PULP & PAPER

U.S. Paper Manufacturer Avoids an Unforeseen Shutdown and Realizes an ROI of Over $900,000 With AMS Machine Works

RESULTS

- An ROI of over $900,000 realized by avoiding catastrophic failure
- Multiple teams easily accessed data and tools from one source
- Unplanned shutdown avoided by early recognition of potential issues in a bearing.

> *The team found the system easy to learn and use. We could quickly identify the equipment vibration issue through the user interface, which simplified our tasks.*

Corporate Analytics Team Lead
U.S. Paper Manufacturer

AMS | EMERSON

APPLICATION

Newly manufactured container paper is rolled on to reel spools that are shipped to manufacturers and distributors around the world.

CUSTOMER

U.S. paper manufacturer of container board.

CHALLENGE

To avoid equipment vibration issues, a large paper manufacturer in the U.S. used the Emerson AMS 2140 Machinery Health Analyzer to manually collect routine monthly vibration data on equipment throughout the plant. They also employed AMS Asset Monitors and AMS Wireless Vibration Monitors from Emerson that automatically delivered vibration data to Emerson's AMS Machine Works for analysis.

Full-width crack of the inner race of bearing.

While the monthly data collection did not identify any vibration issues with the paper machine's Reel Drum, the more frequent data collected by the AMS Asset Monitors and AMS Wireless Vibration System detected a problem and triggered an alarm via Emerson's AMS Machine Works software.

Desiring to avoid a production slowdown, the paper manufacturer began to investigate.

SOLUTION

AMS Machine Works generated an alarm based on a PeakVue™ waveform — Emerson technology that provides a simple, reliable indication of equipment health via a single trend. Emerson's PeakVue technology, embedded in AMS Machine Works, enabled the teams to see the severity that could not be seen in a normal velocity spectrum reading.

In many cases, the mill team can monitor an issue until it becomes significant enough to be acted on. The corporate analytics team works in partnership with the mills to assist in determining the response to issues. Teamwork is enhanced because the analysts at both the mill and the corporate level have a single database and user-friendly interface.

In this case, the corporate analytics team initially used their Advanced Pattern Recognition (APR) model to detect a deviation from the norm. After the corporate analytics team received that alarm from the APR model, the team informed the vibration analysts at the mill. The vibration analysts at the mill then checked AMS Machine Works and the AMS Asset Monitor web-based user interface. The fault appeared in both of these applications as well. The vibration analysts then used the AMS 2140 portable analyzer to confirm that a defect existed in the bearing — a full-width crack in the inner race.

The company replaced the bearing before it experienced a catastrophic failure that would have caused journal damage. In addition, because there was no spare reel drum, the event would have resulted in the roll having to be removed from the machine and sent to a roll shop for repair. As a result, the company realized a return on investment of more than $900,000.

> *The solution just worked. The communication process and all the contributors were able to work together at the same time to address the issues. We were proud to find a resolution in hours rather than days.*
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> **Corporate Analytics Team Lead**
> U.S. Paper Manufacturer

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