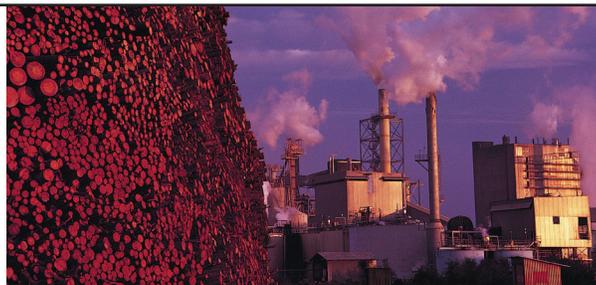


# Paper Mill Saves \$300,000 with Emerson's Continuous Online Monitoring Solution



## RESULTS

- Saved \$180,000 by avoiding lost production and replacement parts
- Additional \$120,000 saved on machine clothing
- Fault discovered during testing stage prior to system commissioning



## APPLICATION

Fine Paper Production

## CUSTOMER

Paper Mill, Louisiana, USA

## CHALLENGE

Typing and copy paper is produced on large and complicated machine trains comprised of dryers, siphons, motors, ventilation systems and a wide range of rolls, drives, and webs. These machines produce paper at 3,200 feet per minute, and operate in a hot, wet, dirty and dusty environment. Downtime for adjustment, cleaning, and replacement of worn parts and critical components is required every six weeks.

If an unexpected shutdown occurs, the mill incurs a production loss of \$15,000 an hour. The average time to change one roll is 12 hours. This does not include the cost of a ruined journal, replacement parts, or a repair crew.

Maintaining the machines is a constant job. Vibration route monitoring with the CSI 2130 Machinery Health<sup>®</sup> Analyzer and analysis with AMS<sup>®</sup> Suite: Machinery Health Manager for each of the fine paper machines was scheduled monthly, but sometimes even that was not enough. Even careful route-based vibration monitoring could be too infrequent to detect the rapid deterioration of the machines' high-speed bearings.

***“On Monday, I saw a fault that didn't show up on Friday. With the CSI 4500, I could look back at the data the system collected over the weekend and could watch how the fault developed.”***

**Vibration Analyst,  
Fine Paper Machines**



For more information:  
[www.assetweb.com](http://www.assetweb.com)



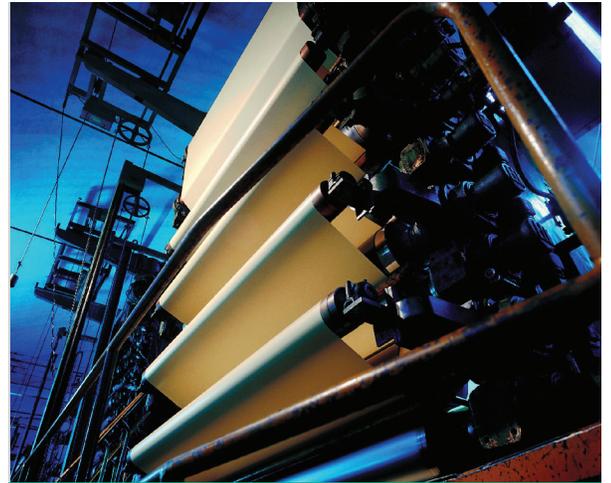
### SOLUTION

The paper mill decided to implement an online continuous monitoring solution and chose Emerson's CSI 4500 Machinery Health Monitor. The CSI 4500 is uniquely suited to the demands of high-output machinery, including large paper machines. With all the roll bearings, motors, gearboxes and other critical parts rotating at high speeds, a large machine such as the 20-year old Valmet paper machine used at the mill can develop a problem very quickly.

An Emerson team was at the mill testing network connections for a new CSI 4500 installation prior to commissioning on the machine. As the wiring and communications were being checked, an inner race bearing fault was detected on the breast roll in the Fourdrinier section of the machine. The expert vibration analyst verified the fault by using the CSI 2130. The roll wasn't due to be checked again until after the scheduled outage. By that time, it would have been too late and the fault would have triggered an unscheduled shutdown. Instead, repairs were made during the planned outage and no production time was lost.

The CSI 4500 saved the company \$180,000 in lost production and \$120,000 in machine clothing replacement before it was even commissioned. The mill now has 46 CSI 4500 monitors, which keep track of approximately 600 sensors on hundreds of rolls turning from 160 rpm up to 2000 rpm on each fine paper machine.

To expand their predictive maintenance program, they implemented the CSI XP32 Machinery Health Expert. The CSI XP32 combines the transient capabilities of the CSI 4500 with PeakVue technology while allowing the portability to monitor and analyze one machine or an entire group of machines. With their newly-integrated approach to predictive maintenance, the mill is now confident that unexpected shutdowns are a thing of the past.



***“You can't walk around and continuously monitor. It takes me 30 days to walk all the routes. The beauty of Emerson's online monitoring solution is that it's on all the time.”***

**Vibration Analyst,  
Fine Paper Machines**

#### **Emerson Process Management Asset Optimization Division**

835 Innovation Drive  
Knoxville, Tennessee 37932  
T 1(865) 675-2400  
F 1(865) 218-1401  
[www.assetweb.com/mhm](http://www.assetweb.com/mhm)

©2008, Emerson Process Management.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available on request. We reserve the right to modify or improve the designs or specifications of our products at any time without notice.

All rights reserved. AMS, Machinery Health, and PeakVue are marks of one of the Emerson Process Management group of companies. The Emerson logo is a trademark and service mark of Emerson Electric Company. All other marks are the property of their respective owners.



Online Machinery Health Management powers PlantWeb through condition monitoring of mechanical equipment to improve availability and performance.

