

# ASSET RELIABILITY AND CONDITION MONITORING

The Transition from “Run to Failure” to  
“Precision Maintenance” at The Buffalo News Inc.

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# WHAT KEEPS YOU UP AT NIGHT?

## Root Cause:

- Bearing failure on 1973 Vintage Building Exhaust Fan

## Consequences:

- Smoke alarm, clears building on deadline, Buffalo Fire dispatched
- OSHA Recordable, electrician on WC for 6 months
- Late press start and late product delivery
- \$100,000 in medical bills + loss of use settlement
- \$35,000 motor replacement

# WHAT KEEPS YOU UP AT NIGHT?

## Root Cause:

- Thrust bearing failure on plate cylinder due to loose retainer

## Consequences:

- \$10,000 in lost color revenue, “make-goods”, and late product delivery
- Loss of 4x4 tower for 1 week
- KBA on-site repair
- Loss of 1/3 of color capacity on daily press
- \$15,000 in repairs

# WHAT KEEPS YOU UP AT NIGHT?

## Root Cause:

- Coil tap on electrical transformer for Sheet Fed Press vibrated loose and burned, rendering it un-repairable.

## Consequences:

- Mad scramble to outsource customers work for nearly two weeks
- \$15,000 for emergency transformer rental and installation
- \$8,000 for replacement
- Lost profit on several commercial jobs

# ALLIED RELIABILITY GROUP & TBN

## Step 1: Education

- Included production department heads and 1<sup>st</sup> line supervision
- Introduction to Conditioned Base Monitoring
  1. Overview of Reliability Engineering
  2. Importance of identifying critical assets
  3. Understanding the primary function of “Maintenance”
  4. Distinguishing between PM vs. PdM as a strategy
  5. Significance of early identification of defects
  6. Advantages of a proactive maintenance workflow model

All are fundamental core concepts to a plant that runs sustainably to capacity!

# ALLIED RELIABILITY GROUP & TBN

- **Step 2:** Perform Criticality Assessment
  
- **Step 3:** Develop effective PM's
  
- **Step 4:** Use technology for *early detection of defects*
  - Infra Red-switch gear, transformers, motors, bearings
  - Ultrasound-air plant, vacuum pumps, transformers, switch gear, lubrication
  - Vibration Analysis-308 assets monitored monthly, mostly rotating equipment
  - Oil and Wear Debris Analysis-Folders and unit oil tested annually
  
- **Step 5:** Monitor Effectiveness
  - Where we are now! 2 years into this program
  - Adding additional assets, back to criticality and single sources of failure

# RETURN ON INVESTMENT (TBD)

## Initial and On-Going Training

- Initial training \$20,000 for staff of 20
- \$5,000 annually for specific training

## Equipment

- FLIR Camera, Data Collector, Ultrasound=<\$50,000

## Data Collection and Analysis

- Data collection, \$250/day or \$3,000/yr
- Analysis of 308 assets \$2,500/mo or \$30,000/yr

**Upfront \$70k, Annually 40k, less than \$1,000/wk.**

**Repairs are scheduled vs. fire fighting**

# DOES CBM WORK?

Yes, catastrophic or “unplanned repair” events are down

## Lessons Learned

1. Improved understanding in the condition of our equipment, increase confidence
2. Never miss a month of measurement, observation
3. Review your data religiously and develop the work plan
4. Data collection and regular PM “eyes” catch other “avoidables”, huge benefits

Thank you