

# A Defining Moment for Maintenance

For the sake of communication, maybe it's time for the industry to standardize some key maintenance terms.

By Ray Oliverson

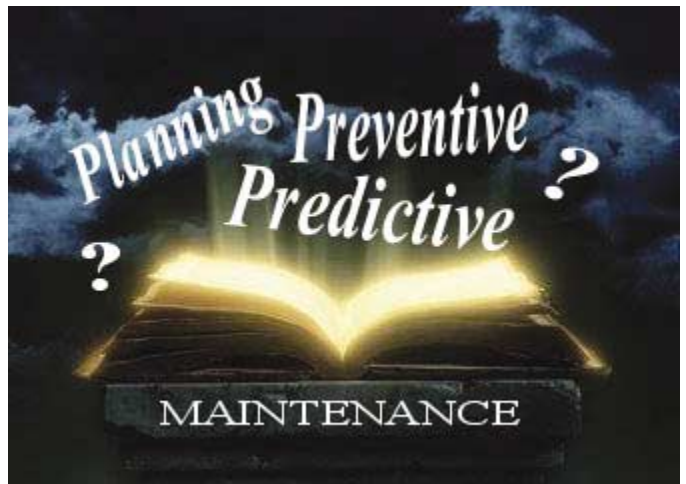
Over the 35 years I have spent helping paper mills and other customers improve maintenance and reliability, I have been concerned with the varied words and definitions people use to reference key elements of this critical area of improvement for today's paper industry. If we are going to survive and thrive in today's global competitive environment, we need to know what we're talking about when we are trying to improve our mills' reliability and maintenance.

The following looks at eight of these key elements in terms of the conceptual meanings and common usages in today's pulp and paper industry.

**1. Planning and Scheduling.** This may be the most common area of confusion in the reliability and maintenance lexicon. Planning and scheduling are not synonyms. Planning involves defining scope, sequence, skills, time, parts, mobile equipment, safety, etc. Scheduling involves operations and maintenance giving planned jobs a weekly and daily horizon for completion. Often, when reviewing mill performance, we discover that the percent planned jobs metric is really schedule attainment. It's difficult to improve if you don't keep score properly.

**2. Expense Maintenance.** "Repair maintenance," "responsive maintenance," "routine maintenance," and "reactive maintenance" are terms people use interchangeably to describe day-to-day maintenance that is expensed. People also define this activity in terms of "repairing" or "fixing" equipment or facilities. Yet "maintain" is defined by Webster's New World Dictionary as "to continue in, or preserve, the same condition."

Papermakers would be well-served if we could settle on one term, such as "expense maintenance" and forever forget the concept of "fix."



**3. Preventive Maintenance.** During my visits to paper mills and hundreds of other plants, I have seen the term "preventive maintenance" (also known as "preventative maintenance") used to describe efforts ranging from non-emergency maintenance to intervention based on time, volumes, condition monitoring, or statistical predictions. We should narrow the definition of "preventive maintenance" to: "intervention by maintenance (or operating) personnel based on time periods or measures of usage (such as miles driven) intended to reduce the frequency or severity of equipment failure."

**4. Predictive Maintenance.** I believe that much confusion exists about the term "predictive maintenance." Most often, "predictive maintenance" is used to describe the application of condition monitoring or non-destructive testing, from vibration monitoring to oil sampling to thermography to ultrasound. Condition monitoring is exactly what the English words describe: the monitoring of the condition of the equipment. It does not become "predictive maintenance" until someone (or some software) analyzes the data and forecasts the need for intervention by maintenance personnel. In many ways, this

connotation is the “just-in-time” version of the old “don’t-fix-it-till-it-breaks” philosophy.

Another thing I notice regularly is the tendency for companies to forget that empirical analysis of failure histories is a very effective part of predictive maintenance. Too many times people act as if only data from condition monitoring can be used to predict the need for intervention.

**5. Maintenance Prevention.** Another term that surfaces regularly is “maintenance prevention,” sometimes known as the “prevention of maintenance.” This is a very valid concept that is often limited to the role designers or project engineers play in building new (or modifying existing) manufacturing units. Sometimes “maintainability” is used to refer to this concept.

In the area of maintenance prevention, I believe that maintenance management should initiate failure analysis to track recurring failures, and drive to identify and resolve root causes. With this approach, management will be able to track unnecessary maintenance, which our studies show ranges from 40-60% of the workload in a typical mill.

**6. Operability.** “Operability” is another word often used in plants today. “Operable” is defined by Webster as: “to be in action; work.” This leads to another word: “availability,” which leads to the concept of “uptime/downtime.” Does “availability” only count in relation to the production schedule or should it relate to 8,760 hours per year with no excuses?

**7. Reliability.** “Reliable” is defined as: “that which can be trusted; dependable.” “Reliability” is often used to characterize an umbrella concept. Maintenance, engineering, operations, and support personnel all have a role in promoting reliability. Reliability is not restricted to maintenance issues.

**8. Reliability-Centered Maintenance.** The terms “reliability-centered maintenance,” “risk-based maintenance,” “optimized reliability-centered maintenance,” etc., lead to another area of confusion that needs to be cleared up. Are these really different concepts, or different names for the same concept?

Many more examples of multiple words or phrases for the same concept exist, especially in the area of maintenance materials management.

## The Challenge

A defining moment has arrived in the North American pulp and paper industry. We are faced with a global competitive

environment like we have never faced before. Recognizing the need for change isn’t enough; survivors must both embrace and implement change. Part of the change required is to identify and implement world-class, standardized maintenance and reliability practices.

This means reaching out beyond your mill, or your corporation, to the pan-industry maintenance and reliability profession to identify best-in-class maintenance and reliability practices, and adopt them. Yet in order to know what to adopt, we must recognize what we are adopting.

I challenge the pulp and paper industry to define and standardize the key words used to describe reliability and maintenance—or to recognize prevailing global standards in the maintenance and reliability profession—so that all of us may communicate and perform more effectively as we engineer our operations to compete in this truly global marketplace. ■

---

*Ray Oliverson is vice president, ABB Reliability Services. He can be reached at [info@paperage.com](mailto:info@paperage.com).*