



MAINTENANCE SCORECARDS: MEASURING WHAT YOU MANAGE

The scorecard concept offers an easy solution to tracking maintenance effectiveness. Here's how to put it to work.

Industrial maintenance is getting beyond the days when it was called to action only when equipment failed. Plant managers know maintenance plays a key role not only in equipment uptime, but in production and overall plant efficiency. Nonetheless, it can be difficult to determine the real effectiveness of even top maintenance crews without a way to measure what they do, how well they do it, and how their actions further company goals.

A measurement technique many pros use is the maintenance scorecard. Maintenance scorecards – either in electronic format or charts and graphs marked by hand - are used for two main reasons: first, to measure performance against established goals; and second, to help justify obtaining additional resources to assist a maintenance team on its mission of continuous improvement. Both of these are critical to maintaining staff and capital expenditure levels. Over the years Maintenance scorecards have been used to justify the following:

- Capital expenditures when production equipment maintenance costs were rising
- Additional overtime hours and pay for PM and PdM (predictive maintenance) work when manufacturing demands would not allow it on straight time
- Increased maintenance training when lack of knowledge was causing increased production downtime
- Additional contractor assistance when backlog man-hours were on an upward trend
- Hiring planner/schedulers to improve maintenance efficiency
- Increased stock of maintenance supply parts when machinery downtime waiting on parts became a concern
- Vibration and infrared programs were justified based on savings from equipment history of catastrophic failures
- Component or system reengineering were justified based on equipment history of repeat failures

Prerequisites

If maintenance scorecards are to assist in measuring maintenance performance and justify equipment expenses, they must be rooted in objective, detailed information. A key part of the information gathering process involves use of a properly installed and maintained CMMS (Computerized Maintenance Management System). The operation of the CMMS must be disciplined and driven by the passion that leads the overall maintenance improvement initiative. Basic information categories include:

- **Maintenance labor.** All work assignments completed by the maintenance team must be captured by the CMMS.
- **Maintenance repair parts and supply costs:** Capturing the cost of all maintenance parts and supplies associated with each work order is as important as knowing the cost of maintenance labor.
- **Contractor costs:** Contractor costs can be significant and, sometimes, hidden.

Key Maintenance scorecards

There are hundreds of potential scorecard measurements available to a maintenance team. And while every industry likely will have unique measurements and scorecards, those explained below are the top scorecards, with applications in all industries and in most facilities. They include:

Backlog – The backlog measurement should be calculated in man-hours or man-weeks

Machine downtime/uptime – The primary use of maintenance downtime or uptime reporting is to see if maintenance improvement efforts are having an impact on the manufacturing effort.

Work distribution – The work distribution scorecard provides a constant status on the types of work for which crew members are allocating time.

Interrupts – An interrupt refers to any work completed that was not scheduled for that day or week.

Schedule effectiveness and compliance – Useful only after you begin scheduling maintenance work, this scorecard compares total maintenance man-hours available to total man-hours placed on the work schedule. It also compares total man-hours on the schedule to total man-hours *completed* on the work schedule.

Percent PM work – This scorecard is designed to track the weekly man-hours assigned to preventive and predictive work assignments.

Pareto analysis of interrupts and downtime – The Pareto analysis is one of the most useful scorecards in assisting the maintenance team in lowering downtime and interrupts.

Cost of maintenance vs. ERV – This scorecard is less common in the maintenance arena, but offers another valuable perspective on maintenance costs.

Cost savings – The most subjective of all the measurements, this is based on documenting savings for repairs that were averted.

Inventory control – Inventory control scorecards are extremely helpful in ensuring the maintenance team has the repair parts and supplies they need to maintain the plant's equipment.

With scorecards, it's key to remember they must be meaningful to the maintenance team and, ultimately, to manufacturing management.