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Keeping equipment humming — not just for maintenance folks

If your organization relies on equipment to get the job done, you should know about Total Productive Maintenance (TPM). That's regardless of whether you use complex machining centers to shape metal, computers to manipulate and store data, or simply vehicles to deliver pizzas.

TPM is a Lean tool that was developed to address the many wastes that occur when the machines we rely on are not working properly, such as:

- Disappointed customers waiting for deliveries.
- Frustrated employees waiting to be productive.
- Defects and accidents that are more likely to occur when another operation is quickly substituted for the disabled process.
- Escalating costs due to expedited shipments of service parts and overtime required to compensate for downtime.
- Stockpiling inventory as a precaution against an unreliable machine.

Most organizations view responsibilities for keeping equipment humming as the sole jurisdiction of the maintenance department in manufacturing or the IT department in an office setting. That's unfortunate, because, like our cars, both driver and mechanic influence vehicle reliability and maintenance expense.



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TPM changes that by getting the people that use the equipment day in and day out actively engaged in its upkeep. This is accomplished through three primary activities:

- Operators are asked to preserve normal conditions. This is akin to teaching a teen driver to religiously check that their car has gas in the tank, proper tire pressure and the correct amount of oil, transmission and other various fluids required for it to move, stop and turn.

- Operators are tasked with identifying abnormal conditions. Addressing most issues early means they can be corrected quicker and at a fraction of the cost of an ignored issue. This is similar to the driver who understands that squealing brakes may likely indicate that brake pad wear has occurred beyond the normal limits.

- Operators are trained on how to respond to abnormal conditions. Returning to our auto analogy, the properly trained driver immediately reports the squealing brakes to their

mechanic rather than waiting until the car rolls through a red light because of lost brakes.

The various checks which operators regularly perform are based on both recommendations provided by the equipment's manufacturer in the Owner's Manual as well as historical maintenance data on the machine in the actual operating environment. What has caused downtime in the past? What checks foretell of impending repeats? How often does each check need to be made (daily, weekly, monthly)? What should be done if that check falls outside of the normal operating range?

Like almost any improved process, it's critical to involve employees when establishing TPM standards for equipment. Both machine users and maintenance personnel can offer valuable suggestions on important checks and reasonable expectations for their frequency and effort required.

Once established, it's critical to make TPM expectations clear and visual. A Standard Work document with photos and simple verbal instructions works best for defining the various checks, their frequency and required responses to abnormal conditions. Labels attached to the various check points are helpful, especially if the

equipment is complex (like the engine compartment of a car) or if a number of different employees use the machine.

Finally, like other improvements that rely on behavioral change, it's vital that supervisors understand their role in holding employees accountable for integrating the TPM activities into their daily job. This is especially important during the critical habit-forming period.

Properly executed TPM generally takes employees less than 10 minutes per shift to quickly ascertain that everything is in order. This small investment can significantly free up the maintenance staff from reactive firefighting, and allow them to address more proactive activities such as preventative maintenance and even predictive maintenance.

The result can be a dramatic reduction in unplanned machined downtime. That's a winner for customers, employees and owners.

Rick Brimeyer is the president of Brimeyer LLC, an independent management consulting firm located in Ames that guides organizations to higher performance by focusing on process improvement and leadership development.

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