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Sunday, 01 November 2009 00:00

If boosting available productive capacity and increasing wrench time has some appeal for your team, explore this fast-lane approach that the production side of the house has been using.

Shigeo Shingo (of Shingo Prize fame) is the inventor of the Single Minute Exchange of Dies (SMED) process. Some of his changeover accomplishments were so revolutionary at the time that they were thought to be impossible, even by visitors who watched an actual die change take place right in front of them. Today, however, many of these techniques are standard practice in manufacturing, and they should become standard practice in maintenance as well.

As in the application of various other lean principles, SMED allows operations to increase throughput and reduce WIP inventory. In the same way, applying SMED principles can allow maintenance to boost the amount of productive capacity available and increase the use of precious labor hours (wrench time).

Rev up

To get started in applying the SMED process, pick a PM or other procedure that fits one of the following criteria:

- It takes a long time to perform.
- It occurs on several pieces of equipment in the plant.
- It occurs frequently.
- It is on bottleneck production equipment.

Using these criteria will allow your solution to provide the biggest bang for the buck. Keep in

mind that the goal of SMED is to reduce the amount of time that the equipment is down and still be able to carry out necessary maintenance tasks. The activities listed here are critical steps in the improvement process:

1. Document the "as is process."
2. Move internal (static) work to external (dynamic) work.
3. Convert internal work to external work.
4. Create a pre-PM plan.
5. Simplify internal work—*standardize*.
6. Verify PM quality.
7. Complete post-PM activities.

The following principles are being applied:

- To the maximum extent possible, maintenance should be done during scheduled work periods.
- Maintenance should be performed on a schedule that is predictable and known by operations.

Change lanes

Let's examine what goes on in our operations when we need a maintenance task performed. We'll first review planned work, then later look briefly at how this technique applies to urgent or emergency work.

A planned job is in the backlog or a job to be scheduled. It is given—*either electronically or on paper*—to the crew supervisor, who assigns the work order to the craftsperson(s) who will then go through a typical work cycle, or, as shown in Fig. 1, a typical "as is process."

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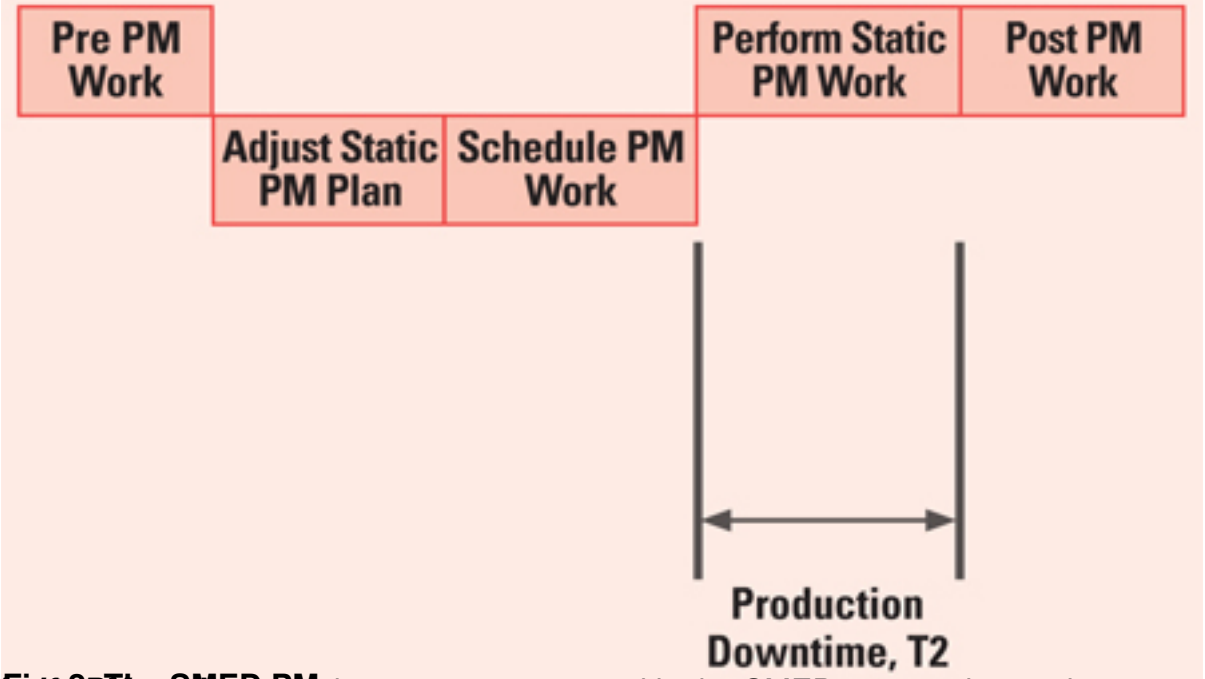

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