

Death of the maintenance department and what you can do about it.

Sometime in the '90's, the maintenance department as we knew it died. The people who carried out good maintenance practices such as PM got laid off. We lost the planners, maintenance engineers and support people who made the systems work.

The old paradigms and strategies don't apply in the new corporate order. We must ask fundamental structural questions about what types of tasks maintenance personnel should do and who should do maintenance tasks. The first question concerns the mission of maintenance.

What is the mission of maintenance? There used to be as many answers to this question as there were companies. When a company even had a mission statement, it ranged from ensuring quick reaction times fixing breakdowns to serving the customer. Some companies are intent on reducing downtime, and others focus on cost control or quality. A few focus on safety or environmental security.

All these missions are useful and important. And all ignore the deep issue: the organization has changed and something very simple transcends these missions or values.

The old mission statements and the new culture collide. The old mission statement contradicts the new core corporate philosophy of being a lean, mean, fast, in-your-face competitor. The old vision of maintenance is as obsolete as a relay rack. Here is the new vision:

The mission of the maintenance department is to provide excellent support for customers by reducing and eventually eliminating the need for maintenance services.

That calls for retooling traditional roles. On one side, maintenance must merge with machine and tooling design to integrate maintainability improvements into design. The accumulated knowledge and lessons of maintenance will be immediately merged into the design profession. Designers and maintainers will have a revolving door.

On the other side, routine maintenance activity should be merged into operations. The TPM (total productive maintenance) model shows that operators can handle the task and that the whole maintenance effort will benefit from operator involvement.

What happened to our organizations? What is the best structure to produce cars, to generate electricity or to provide a college education? Increasingly the answer is not a traditional structure. The optimum structure is increasingly a matrix, a network, a wheel or something people never thought of before.

In some notable cases (such as film making), the best organization is virtual. It is assembled ad hoc — with independent contractors who are experts in their fields — and dissolved when the need changes or ends. The lean and mean virtual corporation depends far less on bricks and mortar than the old one did.

The creed of the new organization is that everyone must add value to the product. Everyone is expendable, outsource able. Think of the current corporate hero, who is no longer a lone product-development genius but now a tough cost-cutter (who just engineered a 1,000-person right-sizing). Imagine how she would react when you tell her you need additional people to carry out PM and other sound maintenance practices.

Breakdowns are not okay! Traditionally, maintenance people have believed that breakdowns are okay. After all, that's what we're paid for. The same attitude supports designs that demand constant investment in PM and routine maintenance.

This acceptance of the status quo is unacceptable. Breakdowns should be viewed as failures of the maintenance system. Any equipment that needs periodic attention to avoid breakdowns is likewise a failure of design engineering.

Where do PM and predictive maintenance fit in the new structure? Organizations spend millions of dollars on PM (preventive maintenance, which includes all predictive technologies, such as infrared inspection and vibration analysis). Do we scrap the hard-won improvements in uptime and reliability gained through the judicious use of PM?

The fatal flaw of PM is that it requires a constant investment of labor and materials to maintain the uptime. PM itself never improves the underlying engineering situation. No improvement will ever flow from a traditional PM orientation, because it never addresses the flaws in the design, use or operation of the equipment.

What's more, when your company downsizes and your PM crew is laid off and not replaced, reliability and uptime will return to their old frequency.

PM does, for a price, increase the life of equipment and decreases the size and scope of failures. The new organization has a place for PM. View it as a station or resting place on the way to maintenance elimination.

When you don't have the time, resources or technology to figure out the underlying problem, use a PM approach to reduce your exposure to breakdowns. Also continue PM, along with other methods, where the implications of breakdown are deadly or terribly expensive.

The chart following shows PM in its correct context. The MI (maintenance improvement) curve has reduced failures and requires only a one-time investment. Virtually everyone involved in maintenance improves a system at one time or another. Yet until now most people haven't viewed it as their mission!

Here's an example of the new approach I'm talking about.

A manufacturer had excessive problems with air cylinders:

1. His calculations showed he was getting only 1 year between rebuilds (MTBF) in his adverse environment. A seal kit cost \$30 plus labor and downtime.

2. He instituted a PM system with weekly cleaning and inspections. The PM approach worked, and the MTBF increased to 2 years. The problem was that he needed people to make all the checks and cleaning.

3. At a local trade show, he saw a new type of seal kit that promised a long life in adverse environments. It cost \$85. His tests revealed that the new seal lasted more than 5 years without a PM program! As the new seals were phased in, his maintenance requirement dropped, reliability increased, and the production line was well served by the reduction and eventual elimination of maintenance services.

Every maintenance improvement reduces the need for maintenance labor and increases the service level to the maintenance user. The same asset can be successfully maintained by a smaller and smaller crew. Maintenance departments that take this approach will be doing their part to ensure that their organization survives and thrives.

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