



How to Manage Your Equipment Maintenance Options

Whether you're a large production plant or a mobile, field-service operation, you should think carefully about what kind of maintenance plan you need for your equipment. Without fully functioning equipment, production halts, customers get frustrated and angry—and you lose money.

In this article, we look at your maintenance options and how to choose between them. By making intelligent, well-informed choices, you're taking an excellent first step on the road to a more efficient and reliable process.

The Four Maintenance Strategy Options

There are four basic maintenance strategy options to choose from—and companies may deploy more than one option at once.

- Run to fail
- Preventative maintenance
- Risk-based maintenance
- Condition-based maintenance

Let's now consider these in turn.

Run to Fail

The most common, and probably the least costly (at least in the short term), maintenance strategy is “run to fail.” In essence, this means keeping the hardware running at capacity for as long as possible. The commonly held belief that this is not a costly option holds true only up to a point—the point at which the machinery fails.

If you suffer an engineering catastrophe and you're

suddenly faced with an emergency shutdown or stoppage, it can cost your organization more than five times the cost of planned maintenance.

This, then, is the most cost-effective option, as long as you don't have a failure.

Preventative Maintenance

Preventative maintenance involves building in a cadence of regular service. Whether this is a weekly, monthly, quarterly, semi-annual, or annual process, there is a schedule in place to pull products or devices out of process and repair or replace them—the aim being to find and remedy all faults before machinery fails.

This strategy will undoubtedly cost more than run to fail, if there's no failure. However, it is an extremely effective way of ensuring there is no catastrophic downtime owing to a major malfunction.

Risk-Based and Condition-Based Maintenance

Risk-based maintenance and condition-based maintenance share many similarities.

Typically these processes are assisted by smart sensors within devices that can communicate to a higher-level system on the health of the hardware. It's providing data on the relative health of the machinery, and whether any parts need to be replaced.

Companies will receive more timely warnings if there is a problem within the system. The data these methods provide can be incredibly useful. When that data is utilized correctly, you have a system that is going to give you greater throughput, less variability in the output—and the result is improved quality, more revenue, and fewer headaches all around.

The differences between the two strategies are small, but potentially significant.

With risk-based maintenance, you're replacing parts before they fail. If something looks unhealthy, it's removed and then repaired or replaced.

Condition-based maintenance looks at the condition of a part or unit and determines how long it has left to function. With condition-based maintenance, the question goes from "When is it going to fail?" to "How long can it go before it needs to be changed out?" This requires more sophisticated control strategies than risk-based maintenance to function effectively.

The Secret to Minimizing Maintenance Downtime

The first step to minimizing maintenance downtime involves the best use of some or all of the processes outlined above. An intelligent, context-specific maintenance schedule is the best frontline for minimizing downtime.

Next, the use of the best technology for the circumstances is essential. Let's use Lease Automatic Custody Transfer (LACT) units as an example. These are used in the oil and gas sector to remotely monitor oil wells. They measure how much oil, water, and natural gas actually comes out of a line, allowing fractional owners of the well to know exactly how much oil they should be being paid for.

These kinds of technology are invaluable as they can operate many miles away from any office, transmitting

highly valuable information back to base. By avoiding having to send a person out to measure data, you're not only speeding up the process, you're also increasing your productivity.

Better Systems

Finally, good maintenance relies on building a better system. In order to minimize downtime, regular maintenance and automation have significant roles to play, but if your system is intelligent enough to predict failure, then you gain a huge advantage.

By using the appropriate kind of technology to manage and maintain processes, the system becomes intelligent enough to allow maintenance processes to be more automated and more condition-based. This will inevitably lead to a better, more robust and reliable system.

What's Your Strategy?

Maintenance costs can have a significant effect on your output and thus on your bottom line. As we have discussed, it is essential to consider and implement the right range of strategies and technology to keep your equipment running to maximum efficiency.

Taking time out to carefully consider which options best suit your company's needs is never time wasted; in the end, it could result in significant production efficiencies and cost savings. Whether you devise a strategy alone or identify an experienced maintenance partner to work alongside you, now is the time to decide on the shape and direction of your future maintenance plan.

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