



Increase uptime by extending service intervals

By Crystal Jeffers

Over the last decade, the idea of uptime, preventive maintenance, and extended service intervals have grown in popularity. The need to increase drive time while decreasing operating costs, unexpected tow bills, and expensive repairs is nothing new. There are many approaches to setting extended service intervals, most of which are tailored for specific purposes within specific applications. Before implementing extended service intervals, it is important to understand how they work and how to leverage technologies for data processing, maintenance scheduling, and other time saving automations.

PREMISE BEHIND AND BENEFITS OF EXTENDING SERVICE INTERVALS

When done correctly, extending maintenance intervals is an effective way to lower expenses, improve uptime, and maintain in-house shop productivity. Setting up extended intervals can be complex, but the premise is simple: longer service intervals mean less frequent shop time, which equals lower part and labor costs. These savings add up over time, producing an array of significant benefits, which is why many fleets with the resources to do so leverage this approach.

WHAT TO KNOW BEFORE EXTENDING SERVICE INTERVALS

A commonly targeted area for extended maintenance intervals is oil, but there is much more that can be done. Extended intervals can be set for greases, coolants, filters, fifth wheels, and more. Synchronizing these intervals plays a crucial role in being as efficient with downtime as possible. Careful consideration and thoughtful implementation must be present in the beginning and throughout the process. Without attentiveness and intention, those newly pursuing this method can find themselves in less-than-ideal situations. Selecting the right maintenance interval depends heavily on application and driving frequency.



While extended intervals have the capacity to benefit operating expenses and revenue, improper extension of maintenance intervals can lead to expensive and unexpected repairs.

A fleet's maintenance schedule should always match its application. Delivery trucks have different a maintenance schedule and focus than over-the-road trucks. Delivery trucks accrue a modest daily mileage with frequent stops, wearing down the brakes. Over-the-road trucks rack up hundreds of miles with infrequent stops over the course of just a day, resulting in much lower wear on the brakes by comparison. These types of factors

must be taken into consideration to avoid negative consequences like engine issues and loss of reliability in core components. While extended intervals have the capacity to benefit operating expenses and revenue, improper extension of maintenance intervals can lead to expensive and unexpected repairs.

Another factor to consider with extended intervals is what parts are being used. Whether they are OEM or aftermarket, choosing fluids and filters that can withstand extended oil drain conditions ensures parts

do not fail between oil drains. Poorly chosen parts can result in premature or catastrophic failure. Choosing the right fluids and filters and changing them at appropriate times goes a long way in preventing downtime on any maintenance schedule. Always source parts designed for your application.

Understanding which interval to use and when is critical. Three common approaches to extending intervals are periodic, mile-based, and (engine) hour-based. Though they all fall under the umbrella of preventive maintenance, it is important to understand the advantages and disadvantages of each approach before setting up an extended maintenance interval.

Periodic Maintenance

The best-known maintenance schedule is periodic maintenance, also known as time-based maintenance. An example of this would be changing filters every quarter or lubricating pumps every six weeks. Picking a day and putting it on the calendar is the simplest option. It requires minimal training, few barriers to implementation, and it is highly predictable, making it easy to manage. Though this may be the most convenient approach, it does not take into consideration what happens with trucks day-to-day. It is a difficult approach to use on fluctuating needs without a **maintenance system** but a solid choice for safety-related activities like inspections.

A common assumption is that failures are tied to age, which often leads to the current condition of equipment being overlooked. For example, some intervals are set well in advance of recommended intervals with the hopes of minimizing the corrective maintenance in the future. While this seems an intuitive approach at first, doing so without considering component conditions and applications can result in unnecessary part and labor costs. Working off predetermined dates is better than shooting in the dark or waiting for derate conditions, but with today's technologies, there are many more opportunities to leverage data.

Mile-Based Maintenance

Scheduling maintenance off mileage with odometer readings can require more effort but is often made easier with tools of automation like scheduled odometer reports from telematic devices. In many cases, these



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can be configured to automatically send daily reports right to your inbox at a set time, with no manual recording or paper management. Using odometer readings for maintenance schedules tends to work best for over-the-road applications with high mileage. Odometer scheduling is easily a step up from using no data. Depending on the vehicle application though, we may still need to leverage another data set to tell the whole story. In these cases, switching to an hours-based maintenance program can make a big difference. For instance, if the truck application involves a fair amount of engine

idle time, knowing when to schedule based off engine hours could be instrumental in helping to avoid derates or reduced component life. Could is the keyword here. While many fleets are trending toward using hour-based intervals, a guiding factor should always be vehicle application.

(Engine) Hours-Based Maintenance

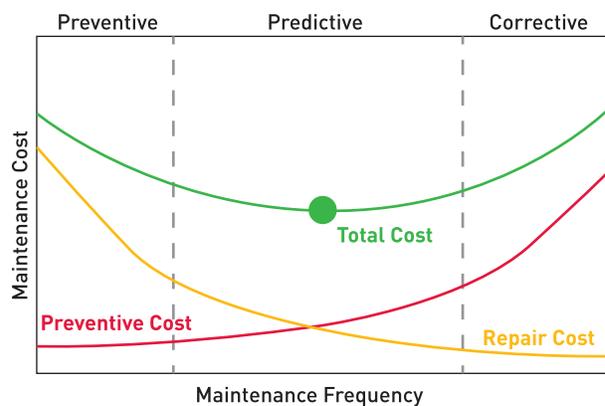
The newest and arguably most reliable method is scheduling based on engine hours. This is also made easily accessible by telematic reporting. A good rule of thumb for determining when to use hours-based maintenance: consider systems that interface with the engine as strongly impacted by engine hours. Great examples include fuel, cooling, and exhaust. Hours-based maintenance also works well for trucks with significant amounts of daily idle time, as greater wear and tear is occurring to the engine under these circumstances. An idling truck perfectly illustrates how engine hours capture data that odometer readings cannot. Engine hours would reveal that oil is fatigued in a truck that has been idling for twenty minutes while the odometer would capture no change.

Maintenance Tools and Technology

These three approaches tend to work best on vehicles that are being run continuously. If assets are only being run occasionally, they will wear down at different rates, requiring different forms of maintenance at

different times. Predictable failures may also be missed if maintenance is too infrequent. Whether extending intervals or not, having access to accurate and up-to-date information is essential to proper maintenance. Telematic devices efficiently capture and relay this data, providing insights much faster than traditional methods. For example, usage-based maintenance relies on telematics to track operating hours, production cycles, and more. These dashboards provide visibility to the entire fleet, helping to glean deeper insights about each vehicle so maintenance can be scheduled accordingly. This knowledge also helps to target specific trucks for focused preventive maintenance, reducing unnecessary maintenance costs and labor. Other technologies are being developed to improve advanced notice and visibility about vehicle conditions as well.

Predictive maintenance, or “condition-based” monitoring, relies on sensors to relay dynamic information about the status of a truck’s components. It looks for signs of deterioration, performance issues, and other anomalies. Using data collected during normal operation, it aims to proactively predict when maintenance may be needed in advance of physical symptoms, helping to focus and optimize maintenance resources. While predictive maintenance does operate from a preventive lens, the primary difference between predictive and preventive maintenance is that predictive maintenance zeroes in on a specific problem in that moment, where preventive maintenance involves performing routine maintenance on a set schedule regardless of whether there is an immediate need for the upkeep. Three pillars of predictive maintenance are real-time monitoring of performance, analysis of data, and benchmarking.



HOW TO EXTEND SERVICE INTERVALS

The best and safest way to set up an extended interval program is by working closely with your OEM provider. As product experts, the tools and resources they provide are critical in developing maintenance intervals that support your fleet. Determine the ideal interval for your fleet by using manufacturer recommendations and asset management key performance indicators (KPIs) like mean time between failure (MTBF), historical maintenance data, and even your own experiences.

Conclusion

The key to achieving uptime with preventive maintenance is finding the balance between general and targeted proactive repairs. Another big factor in maximizing uptime relies on increasing the efficiency of maintenance. Extending service intervals is a great way to reduce repairs and tow bills for fleets with continuously running vehicles. Rely on OEM providers and industry experts to develop extended interval schedules that fit your fleet specifications and applications. Thanks to modern technologies like sensors and telematics, much of the heavy lifting to determine and manage intervals is minimized and simplified. Tools of automation are easy to implement and create streamlined processes that give quick access to data. Use every tool at your disposal to create a maintenance schedule that works for your fleet's dynamic and evolving needs.

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