Service life can be determined in various ways.

Signature Series' new 700-hour limit provides clarity for those operating vehicles that idle excessively.

Dan Peterson | VICE PRESIDENT, TECHNICAL DEVELOPMENT

Oftentimes we talk about how long motor oil can be used – the expected service life – before it needs to be changed. Service life is most frequently described in miles and can be greatly affected by a vehicle's operating conditions, which is why AMSOIL has provided definitions for normal and severe service.

For our Signature Series products, AMSOIL defines severe service as primarily short trips (less than 10 miles [16 km]); turbo/supercharged engines; commercial or fleet vehicles; excessive idling; first-time use of AMSOIL motor oil in a vehicle with more than 100,000 miles; frequent towing, hauling, plowing, or driving in dusty conditions. Most of those conditions are straightforward. "Excessive idling," however, can be difficult to define. To add clarity, AMSOIL is now adding a 700-hour interval under both normal and severe service conditions.

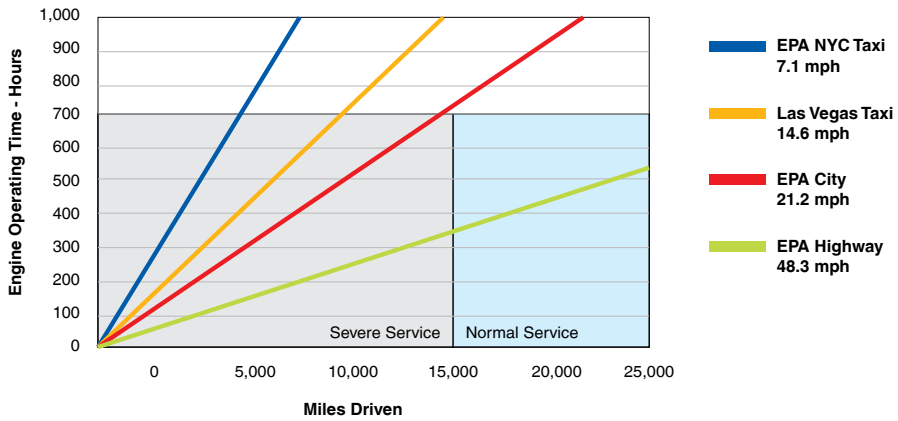
Matt Erickson, our Technical Product Manager, Passenger Car, created the graph below to help illustrate the importance of the hours interval by highlighting some examples. The graph shows the hours of engine operation, or idle time, versus the miles driven for a drain interval. The colored lines represent average speeds of a vehicle in four different scenarios. The blue line represents an average speed for a New York City taxi, which according to the EPA is only 7.1 mph. Even though the taxis there don't move very fast, their engines are operating nearly continuously, which means that the oil is being stressed for a large amount of time. If you follow the blue line in the graph, you can see that after 700 hours they have only traveled 5,000 miles. And according to the updated AMSOIL recommendation, these cabs should change their oil unless oil analysis says they can go longer.

During testing, we found that taxis running in Las Vegas average a consistent 14.6 mph. Even though the vehicles are not always moving, the engines stay on just to keep the air conditioners running. Following the orange line in the graph shows that these vehicles can accumulate a little more than 10,000 miles in 700 hours. That's the same amount of time as the NYC taxi, but they can go twice as long in terms of miles. This is a clear example of how the hours interval can significantly impact the amount of miles achieved in a drain interval.

The EPA city driving cycle is used to estimate the city fuel economy numbers we are familiar with seeing advertised on vehicles. It has an average speed of 21.2 mph, and it is a good representation of short-trip or stop-and-go driving seen in cities without major congestion. Vehicles primarily used in this capacity fall into severe service, so the mileage cutoff would be at 15,000 before the next oil change, which happens to correspond nicely with the 700-hour mark. Now if speeds are slightly above 21.2 mph, but the driving conditions fall into severe service (turbocharged, dusty, towing, plowing, etc.), then the drain interval will be limited by 15,000 miles before it reaches 700 hours.

Finally, the EPA highway cycle is shown in green, averaging 48.3 mph. This is mostly highway driving, and even after 25,000 miles the engine operating time is only slightly over 500 hours. Therefore, drain intervals will be set by 25,000 miles, and the hours don't even come into play.

AMSOIL Signature Series Motor Oil represents the pinnacle of oil formulation, but all motor oils eventually break down. For many applications, especially personal-use vehicles, the average speed is high enough that the hours of engine operation are not a concern. However, for high idle-time applications, such as those common to fleets, logging the amount of time the engine operates is important. Be sure to talk with your customers about their driving habits so you can help them follow the drain interval that is best for their situation. ■



THE VALUE OF CONSISTENT CLUTCH FEEL

It's well-known that racing is one of the ways AMSOIL motor oils are tested, proven and fine-tuned to become the exceptional products we stand behind. We don't invest in racers simply to put the AMSOIL brand in front of fans; AMSOIL racers become technical partners.

The development of new AMSOIL Synthetic Dirt Bike Oil, introduced last month, offers a perfect example. AMSOIL-sponsored supercross and motocross racers identified consistent clutch feel as a key performance attribute on the track. At the time, there was no dirt-bike-specific oil on the market that provided the level of clutch consistency professional and amateur riders need. Consistent clutch feel is critical to riders during race starts to keep the bike from lurching forward prior to the gate dropping. Trail riders, meanwhile, need consistent clutch feel to confidently navigate obstacles without having to shift gears and lose momentum.

Armed with that information, AMSOIL engineers went to work. Clutch feel is inherently subjective, which creates challenges in designing a lubricant that delivers this benefit. To overcome that challenge, AMSOIL designed an extreme simulated-start test for dirt bikes. The test allows AMSOIL engineers to apply accelerated stress to a dirt bike's clutch in order to monitor clutch feel produced by a candidate lubricant.

AMSOIL Synthetic Dirt Bike Oil was also subjected to extensive on-track testing in the bikes of GEICO/AMSOIL/Honda Factory Connection and other professional riders. This combination of rider feedback and lab testing resulted in the final formulation of AMSOIL Synthetic Dirt Bike Oil.

AMSOIL research and testing results in products Dealers can rely on to deliver the benefits their customers can't find in other products.

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