Driving habits affect drain intervals.

It's important to adjust drain intervals according to normal and severe service recommendations.

Dan Peterson VICE PRESIDENT, TECHNICAL DEVELOPMENT

Driving habits and the work demanded from vehicles vary greatly. During the week, my old Suburban gets me to work and back over my 24-mile commute; on the weekend, when I'm lucky, I drive 180 miles over to Eagle River, Wis. to enjoy some fishing. Occasionally I drive down to Madison, Wis. to visit my daughter at college, which puts me on the road for a minimum of 10 hours in two days. So how severe are my driving conditions? A daily commute, some light towing and some highway driving seem harmless to me. When I actually break down the miles or hours I put on the Suburban, 80 percent of the miles I log are from workweek commuting; I don't get out fishing more than five or six times a year. With drain interval recommendations dependent on classification of "normal" or "severe" service, determining when to change oil can be more difficult than it seems.

Normal service is defined by AMSOIL INC. in the Product Recommendation and Drain Interval Guide (G1490) as, "Personal vehicles frequently traveling greater than 10 miles at a time and not operating under severe service." AMSOIL INC. defines severe service in gasoline applications as, "Turbo/supercharged engines, commercial or fleet vehicles, excessive engine idling, use of AMSOIL engine oil in vehicles with more than 100,000 miles without prior regular use of AMSOIL engine oil, daily short-trip driving less than 10 miles (16km), frequent towing, plowing, hauling or dusty-condition driving."

Severe service for diesel engine applications is defined as "extensive engine idling, daily short-trip driving less than 10 miles (16km) or frequent dusty-condition driving." The list of driving habits denoting severe service in diesel applications is shorter because diesel engines are built for working conditions and diesel combustion by-products have less of an effect on oil than gasoline combustion by-products.

Taxi Cab 14 mph		City 21 mph		Highway 48 mph	
Miles	Hours	Miles	Hours	Miles	Hours
5,000	357	5,000	238	5,000	104
10,000	714	10,000	476	10,000	208
15,000	1,071	15,000	714	15,000	313
20,000	1,429	20,000	952	20,000	417
25,000	1,786	25,000	1,190	25,000	521

Stop-and-go driving and excessive idling are especially hazardous to engine operation, so it is vital for vehicles like taxi cabs to pay attention to engine hours in addition to miles on engine oil. As indicated by the data displayed in the table above, an engine with low miles but high hours may still be operating under severe conditions.

The table shows that a vehicle traveling primarily on-highway accumulates 15,000 miles in only 313 hours. A taxi traveling the same distance accumulates over 1,000 hours on the oil. Because a taxi drives at very low speeds and idles excessively, the hours on the engine oil can be five times greater than that of a vehicle moving at high speeds for extended periods of time. A vehicle in stop-and-go traffic takes over 700 hours to accumulate 15,000 miles. Engine hours are an important factor to consider when discussing the severity of service.

During short trips (less than 10 miles), a vehicle's engine oil spends a relatively small amount of time at actual operating temperature; this is especially true in colder climates. Frequent starts and excessive idling cause fuel to build up in the oil sump. Fuel dilution causes a decrease in motor oil viscosity, which can create abnormal wear by reducing the protective barrier of oil. Water also accumulates in engines that don't spend enough time at operating temperature. Water can initiate breakdown of the oil and result in a sludgy mess if sufficient quantities are present long enough.

Frequent towing puts a different strain on engine oil. When an engine is operating under heavy load, oil temperatures can increase significantly, which promotes oxidation. As temperatures increase, engine oil reacts with air, and oxygen molecules attach to the base oil chain making it heavier and thicker. This reaction causes decreased oil pumpability. Excessive oxidation causes sludge and other deposits accumulating in the engine. This is one of the primary reasons for reduced drain intervals under this severe-service condition in gasoline applications.

AMSOIL synthetic motor oils – Signature Series in particular – are designed for extended drain intervals beyond OEM recommendations. The example based on my own driving habits confirms that my once-per-year oil change with Signature Series 5W-30 Synthetic Motor Oil is perfectly acceptable. I commute 24 miles a day, haul the boat five or six times a year and make a couple of long trips to see my daughter; I am not over-stressing my engine. It's important to examine your driving habits and conditions to ensure your vehicle is receiving the best protection possible. ■

From the President's Desk

One of our long-time account reps from a major additive supplier paid us a visit recently to announce that he had been promoted to a new position and would no longer be handling our account. He would remain involved at a distance, but the hands-on responsibilities would be left to his replacement. This replacement, our new rep, joined him on this visit. It was his first trip to AMSOIL.

It was apparent from the start that the new rep had been educated on AMSOIL. That is, he had been advised that, above all, AMSOIL was all about quality and any run-of-the-mill technology that may appeal to other companies would earn no interest from us. He knew coming in that "average" was not in our vocabulary. I suspect, also, that our long-time rep had shared a sentiment that he expressed to us years earlier. "Time spent at AMSOIL," he said, "is like spending time at an Airborne Ranger boot camp."

Don't get me wrong. We weren't all that rough on him. In fact, we had a fantastic relationship. He did a great job for us, we respected his effort and we developed a genuine friendship. He enjoyed his trips to AMSOIL. I think he embraced the challenge, and I suspect that he took considerable pride in the role he played in developing products that went beyond the boundaries of the products other companies developed. He respected the fact that AMSOIL is fully committed to investing all that's necessary to remain at the forefront of the lubricant industry.

Our commitment to invest heavily in our products is not new to us. It's been the foundation of our philosophy from the very beginning. I remember distinctly that when we were developing our first 2 –Cycle Oil back in the early 1970s I wanted a product that outperformed all other products. It had to be the very best. At that time I was working with a highly specialized and competent additive supplier, and I knew very well that the additive used would be critical to wear protection. I would start with a pure synthetic base oil, but it would be the additive that carried the load.

As we began formulating, the supplier recommended the additive percentage that should be used. I knew, at that percentage, it would be a good oil, but I wanted to push the limits.

"How much higher can I go?" I asked.

I could tell it was the first time he had ever been asked that question. "Higher," he said, "why would you want to do that? It's very expensive."

"Because I want to make a better oil," I said.

A week or so later the supplier got back to me with the maximum percentage that could be used. So that's where I took it. We had the oil tested at Southwest Research at a mix ratio of 300:1. Keep in mind that the best anyone else was doing was maybe 50:1. We were at 300:1 and passed with flying colors! We eventually introduced the oil at 100:1 because from a marketing perspective no one would have trusted a 300:1 mix ratio.

The investment in our products goes beyond the technology we use. Once products are developed we don't just sit idle and hope they sell. We are constantly investing in field studies and other forms of testing to validate product performance and uncover ways to make improvements. Take a look at page 13 in this issue. We invested five years of time, effort and research to further validate the performance of our SAE 50 Long-Life Synthetic Transmission Oil. As you will see, the oil held up beautifully after over 500,000 miles of service in Eaton manual transmissions.

This study, on the heels of our Diesel Fleet Fuel Economy Study, serves as another example of the commitment we make to ensure that our products perform exactly as we claim they will. We make the investment, and we publish results. We don't speculate on product performance, and we don't hide behind unsubstantiated claims. We show our cards, and all AMSOIL customers can be assured that behind each and every AMSOIL product is documented proof and a rock-solid AMSOIL guarantee.

A.J. "Al" Amatuzio
President and CEO, AMSOIL INC.