



# SERVICE LINE

NEWS AND IDEAS FROM AMSOIL

## AMSOIL Expands Signature Series, XL and OE Lines

### NOTES

#### Quick Lube Market Shows Healthy Growth

The *National Oil & Lube News (NOLN)* 2011 "Tops in the Industry Ranking" indicates the U.S. quick lube market is growing at a healthy rate. In fact, the report shows the first growth in the market in over three years, climbing by 185 stores to a total of 16,716 over the past year.

With the number of new-vehicle dealerships declining over the past few years, quick lubes have picked up the extra oil change market share. *NOLN* estimates U.S. quick lube sales will increase by \$100 million in 2011, reaching more than \$9 billion. With 60 to 70 percent of motorists choosing to pay someone else to change their oil, and that number expected to reach 80 percent by 2018, the quick lube market is expected to continue growing well into the future.

#### Strong Demand for Synthetics

Although overall U.S. lubricant consumption has declined since 2006, demand for synthetic lubricants continues growing. While synthetic motor oil represented 5 percent of the motor oil market in 2005, it now accounts for 7-9 percent. Leading industry research company The Freedonia Group Inc. projects 7.3 percent annual growth for sales of synthetic motor oil through 2013 and 6.3 percent growth for synthetic hydraulic and transmission fluids. A study by Kline & Co., meanwhile, indicates synthetics' share of the global lubricants market will hit 12.5 percent by 2019.

Many original equipment manufacturers (OEM) have transitioned to lighter viscosity motor oils over the years to help meet corporate average fuel economy (CAFE) requirements. While SAE 30 oils (5W-30, 10W-30) once comprised the majority of passenger car motor oil sales, SAE 20 oils (0W-20, 5W-20) have gradually claimed an increasingly larger slice of the pie. Toyota, Honda, Acura and Lexus, for example, recommend 0W-20 oils in most new vehicles, while Ford and Dodge recommend 5W-20 oils in many new vehicles.

With the continuing trend toward lighter viscosity oils, AMSOIL has expanded the Signature Series, XL and OE lines. The Signature Series line now includes a 5W-20 oil (ALM), while the XL and OE lines now each include a 0W-20 oil (XLZ, OEZ). Like the other oils in their respective lines, each new oil is formulated to provide outstanding protection and performance and meet the latest API SN/ILSAC GF-5 specifications.

Offering both a 0W-20 and a 5W-20 in each motor oil line provides customers the precise viscosity specified by their vehicle manufacturer, whether they want maximum 25,000-mile/one-year drain intervals with Signature Series, 10,000-mile/six-month drain intervals with XL or OEM-recommended drain intervals with OE.



ALM

XLZ

OEZ

To establish consistency and increase convenience, AMSOIL synthetic motor oil labels and caps in the three main lines are color-coded according to viscosity grade. The new OE and XL 0W-20 synthetic motor oils feature green labels and caps. To match, AMSOIL Signature Series 0W-20 (ASM) has also transitioned to a green label and cap. Likewise, all 5W-20 oils (ALM, XLM, OEM) feature silver labels and black caps, while 5W-30 oils (ASL, XLF, OEF) retain their red labels and caps; 10W-30 oils (ATM, XLT, OET) retain their blue labels and caps; Signature Series 0W-30 (AZO) retains its bronze label and cap and XL 10W-40 (XLO) retains its yellow label and cap.

# Neglected Equipment: Drivetrains



Most people are aware of the importance of changing their motor oil. Oil life monitors, oil change centers and television commercials all serve as constant reminders. However, many people overlook the importance of changing their automatic transmission fluid and gear lube.

Severe-duty activities such as towing heavy trailers, hauling heavy loads, snow plowing and off-roading place an increased level of stress on drivetrain components. Modern transmissions and differentials are subjected to more horsepower, higher towing limits and hotter temperature extremes than their predecessors, and wear protection and oxidation resistance are more important than ever.

Transmissions run hot, often leading to transmission fluid oxidation that causes clutch glazing and deterioration in shift quality. Clutch glazing can be felt as an elongated, slipping or sluggish shifting feel, and it's usually a precursor to transmission failure. AMSOIL Multi-Vehicle Synthetic Automatic Transmission Fluid (ATF) and Fuel Efficient Synthetic Automatic Transmission Fluid (ATL) deliver outstanding performance in demanding operating conditions, resisting oxidation and providing increased lubricant film strength for maximum protection of transmission components.

The extreme pressures and temperatures generated by modern vehicles increase stress on gear lubricants and can lead to a serious condition known as thermal runaway. As temperatures in the differential climb upward, gear lubricants lose viscosity and load-carrying capacity. When extreme loads break the lubricant film, metal-to-metal contact occurs, increasing friction and heat. This increased friction and heat, in turn, results in further viscosity loss, which further increases friction and heat. As heat continues to spiral upward, viscosity continues to spiral downward. Thermal runaway is a vicious cycle that leads to irreparable equipment damage from

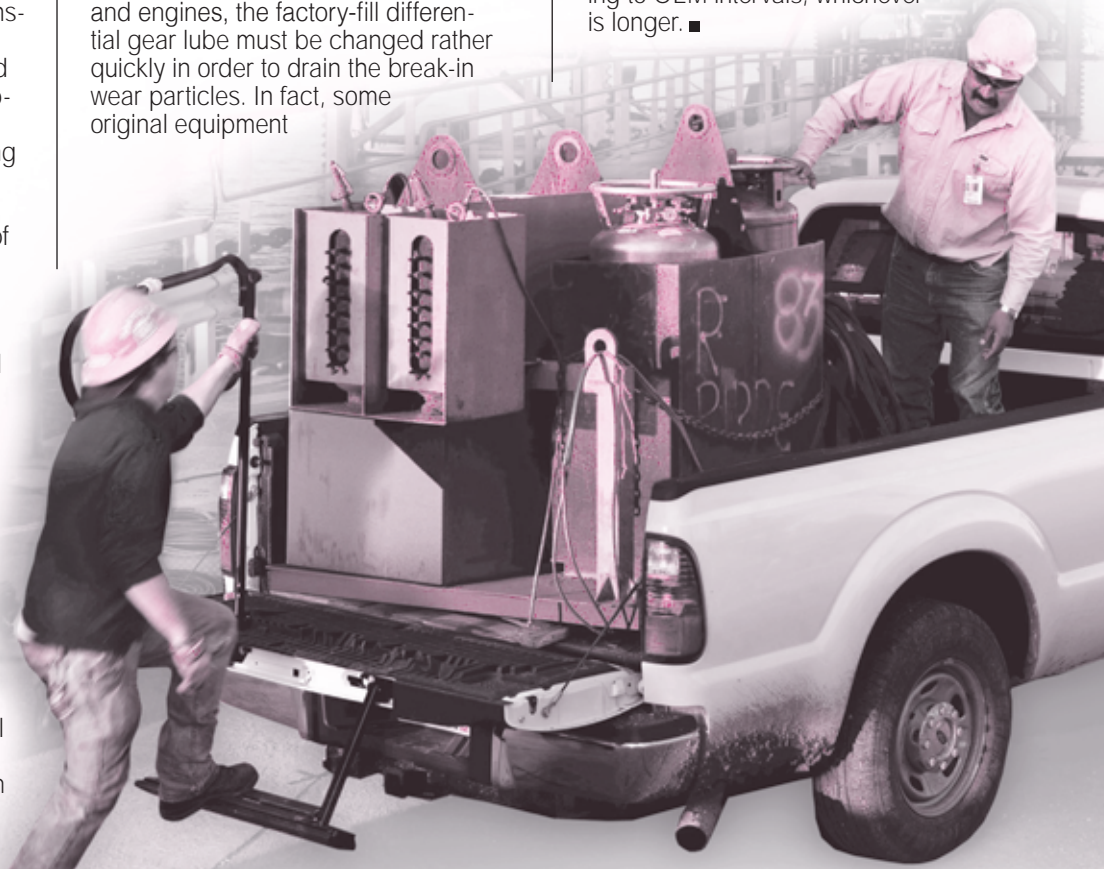
extreme wear, and ultimately catastrophic gear and bearing failure.

AMSOIL Severe Gear® Synthetic Gear Lube demonstrates superior viscosity index (VI) and shear stability properties, and it is better-equipped to protect equipment against the devastating effects of thermal runaway. Severe Gear Synthetic Gear Lube is blended with superior high-viscosity-index, shear-stable synthetic base oils and an overtreatment of extreme-pressure additives that effectively protect high-stress applications against friction, heat and wear and keep equipment in top working order.

Studies reveal most differential wear occurs in the first 5,000 miles of operation. Because differentials go through a break-in period and are not equipped with filters like transmissions and engines, the factory-fill differential gear lube must be changed rather quickly in order to drain the break-in wear particles. In fact, some original equipment

manufacturers (OEMs) require the factory-fill differential gear lube be changed within the first 3,000 miles, or the first 500 miles if towing. Break-in wear particles allowed to remain in the differential mesh between the gears and cause gear or bearing wear or failure. Changing the factory-fill differential gear lube at the OEM recommendation, then switching to AMSOIL synthetic gear lube, ensures long, trouble-free differential life.

In automotive and light truck applications, AMSOIL synthetic automatic transmission fluids and gear lubes are recommended for up to 50,000 miles under severe service and up to 100,000 miles under normal service, or according to OEM intervals, whichever is longer. ■







# AMSOIL-EQUIPPED MOTORCYCLES SHINE IN FUEL ECONOMY CHALLENGE

AMSOIL synthetic lubricants figured prominently in the Vetter Fuel Economy Challenge held May 13 in northern California, where a diesel-powered motorcycle using AMSOIL products won by achieving 128.24 mpg. Many of the other bikes also relied on AMSOIL products to help achieve results nearly as impressive.

Winning driver Fred Hayes of Hayes Diversified Technologies (Hayes-DT) completed the challenge riding the company's MD670 F2 diesel-powered motorcycle (pictured above). Hayes bested the next closest competitor by over 18 mpg using biodiesel fuel, a lightweight motorcycle design (370 pounds dry) and AMSOIL synthetic lubricants throughout:

- Engine and Transmission - Series 3000 5W-30 Synthetic Heavy Duty Diesel Oil
- Cooling System - Antifreeze and Engine Coolant; Dominator® Coolant Boost
- Chassis - Series 2000 Synthetic Racing Grease
- Chain - MP Heavy Duty Metal Protector
- Forks - Shock Therapy® Suspension Fluid #10 Medium
- Fuel - Diesel Concentrate

Competitors completed a 133.5-mile course designed to provide real-world, challenging conditions. The trip, beginning and ending in Carmel, Calif.,

included mountainous terrain cresting a 2,500-foot pass, while the return ride along the famous El Camino Real subjected riders to 30 mph headwinds that tested the limits of each motorcycle's fuel efficiency. Held at various places throughout the country, the Vetter Fuel Economy Challenge dates to 1980 and aims to encourage development of motorcycle technologies that improve fuel economy while remaining viable for everyday drivers.

The winner must consume the least amount of fuel measured in dollars and cents while meeting all prescribed conditions. Hayes used \$4.53 in biodiesel, essentially one gallon, to travel the entire 133.5 miles in challenging conditions, highlighting the bike's impressive technology and the effectiveness of AMSOIL products. Hayes said his bike showed measurable improvements running Series 3000 5W-30 Synthetic Heavy Duty Diesel Oil and Diesel Concentrate, including easier shifting from the transmission. Competitors had to remain ahead of a trailing official at all times to prevent them from padding fuel economy statistics by driving slowly. Two bikes were disqualified for doing so.

AMSOIL-sponsored Hayes-DT focuses on developing the world's most cutting-edge, heavy-fuel-powered, light tactical vehicles and small engines for military

use. In fact, key Hayes-DT corporate personnel have served in modern military conflicts deployed on Hayes-DT military motorcycles. The bikes receive the most use from the Combat Military Police for route recognition and convoy control.



**The Hayes-DT Street Fighter bike achieved 90.82 mpg running biodiesel and AMSOIL lubricants throughout.**

A second Hayes-DT bike, the Street Fighter, was disqualified after a battery problem caused it to miss the official start. Following repairs, driver Josh Chen rallied

to complete the course anyway, achieving 90.82 mpg, which would have been good enough for third place. The Street Fighter used the same lineup of AMSOIL products as the MD670 F2. Although neither motorcycle is available to the general public yet, Hayes-DT is currently working on EPA and EU emissions certification. Until then, competitions like the Vetter Fuel Economy Challenge allow Hayes-DT to showcase the advanced technologies of their bikes and the performance benefits of AMSOIL synthetic lubricants and additives. ■