Railroad Engine Oil is Changing

Once seen as a dying industry, railroads today are thriving economically and moving record levels of freight throughout North America. Mergers and acquisitions in Canada, Mexico and the U.S. during the past decade have enabled some railroads to offer true scheduled service, while all have improved services throughout their networks.

Railroads are facing a number of issues that affect their lubricant suppliers along with the composition of RREO. Changes in both emission regulations and the demand on railroad engines have been impacting the railroad industry since the late 1990's. Starting in mid-2007, railroads started to feel the impact of new fuel standards similar to what the on-road trucking industry faced a decade earlier. All these factors have influenced the development of additives for fuels and lubricants.

Low sulfur (500ppm) diesel consumption in locomotives was mandated as of July 2007. Ultra-low sulfur (15ppm or USLD) diesel will become mandatory for locomotives beginning in 2012, though many locations throughout the country already supply ULSD to locomotive companies today.

Historically, mono-grade SAE 40 engine oils had been utilized. The advent of the high horsepower line haul locomotives in North American railways led to the migration to 20W40 multi-grade engines in the early 1990s.

Recently, there have been improvements made over the traditional multi-grade approach that has dominated the industry. Specifically, the introduction and performance of particulate filters and oxidation catalyst in locomotive engine operations required an optimized additive technology to reduce ash content, incorporate advanced dispersant technology and improve yellow metal wear protection.

After examining each of these factors one-by-one, it became clear that there is a growing necessity to develop a Functionalized Mono-grade (FM). FM is a finished oil formulation that provides excellent wear control, shear characteristics and viscosity retention that contributes to longer oil life and reduced maintenance costs. The attributes of the FM are oil consumption savings achieved via the introduction of multi-grade RREOs, an optimized viscosity index improver dosage, low SAPS, and a fresh kinematic viscosity of 14.6 c St at 100 C. *Compoundings Additive Issue Vol. 58*

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