SEMINAR

"MEMBANGUN MODA TRANSPORTASI JALAN UNTUK SISTEM TRANSPORTASI MULTIMODA DAN LOGISTIK YANG EFEKTIF DAN EFISIEN DALAM MENGHADAPI MASYARAKAT EKONOMI ASEAN (MEA) 2015"

THE GOLF - PANTAI INDAH KAPUK - JAKARTA

RABU-KAMIS, 25-26 FEBRUARI 2015

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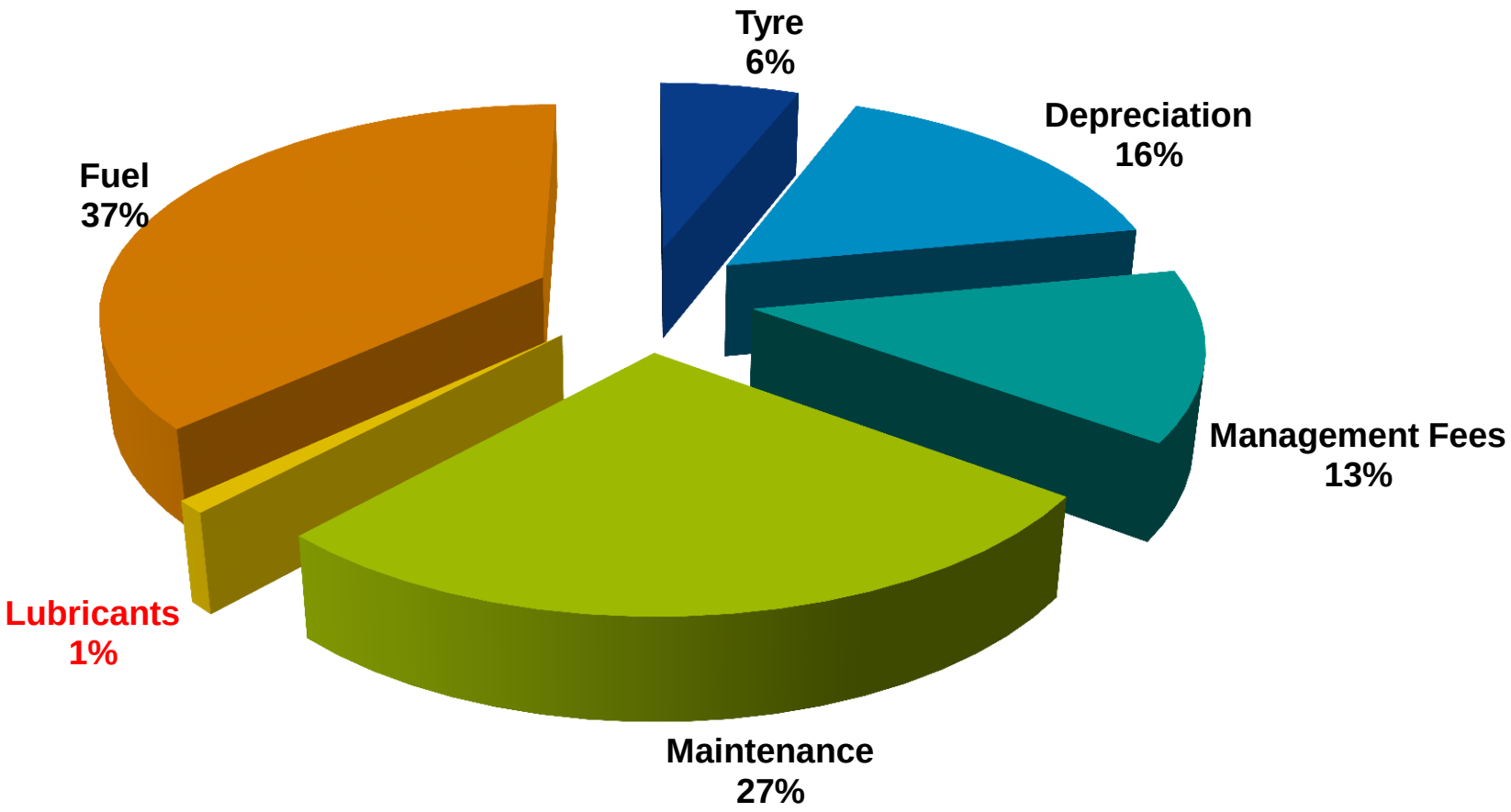
February 2015

How Lubricants Help You to Face Fleet Challenges

Energy lives here™

Launching dan Musyawarah Nasional – APTRINDO
The Golf – Pantai Indah kapuk - Jakarta
25-26 Feb 2015
Sigit W. Wagito

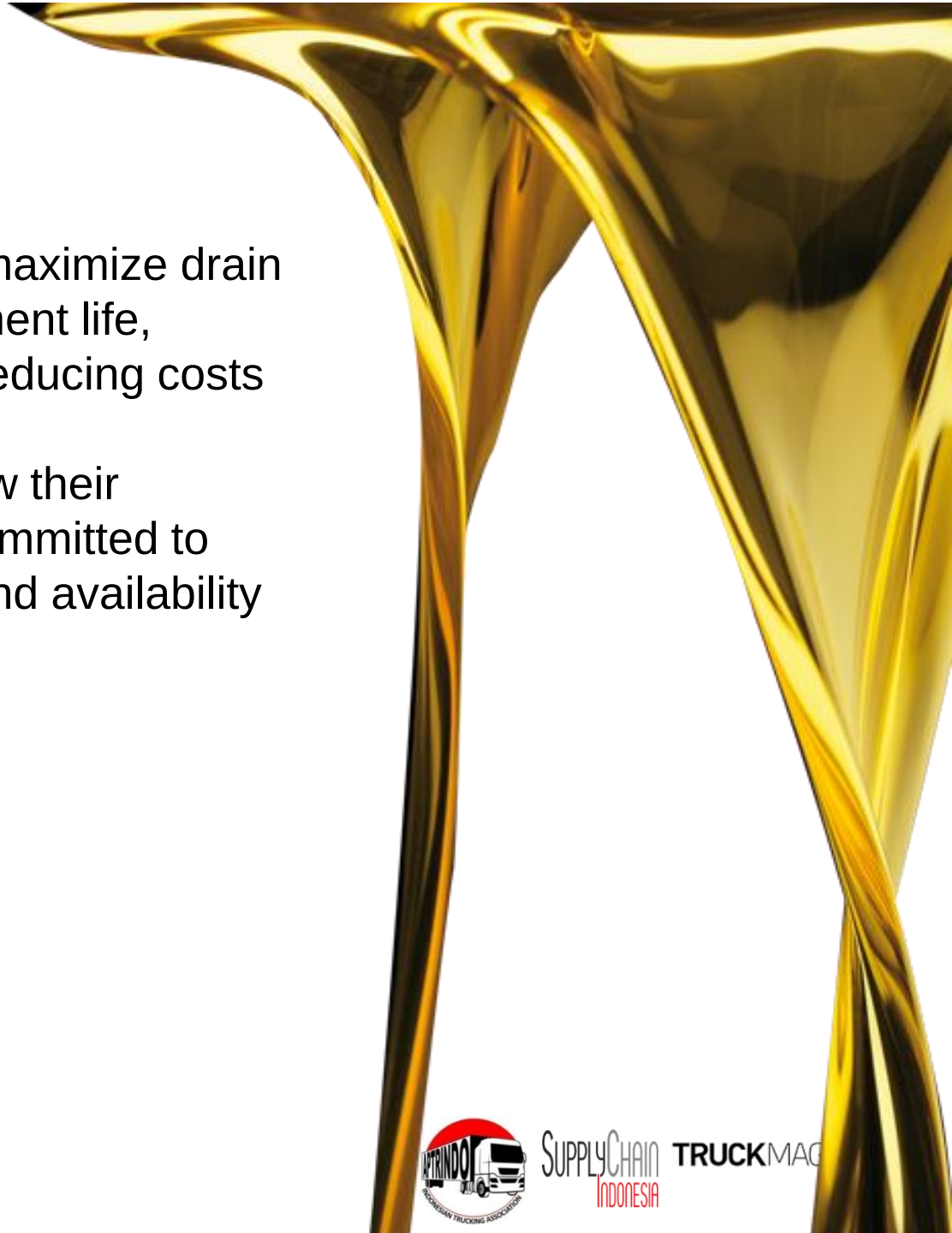
Fleet cost analysis



Survey on operational cost of 115 fleets in USA

Fleet's challenges

- Trucking fleets looking to maximize drain intervals, extended equipment life, enhance fuel economy – reducing costs
- Companies looking to show their customers that they are committed to sustainability – reliability and availability



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Expectation of Lubricants

Criteria of Product Performance:

- Engine life, cleanliness level, and wear protection
- Performance at high and low temperature
- Optimized drain intervals
- Reduced oil consumption
- Reduced downtime
- Energy efficient

ExxonMobil

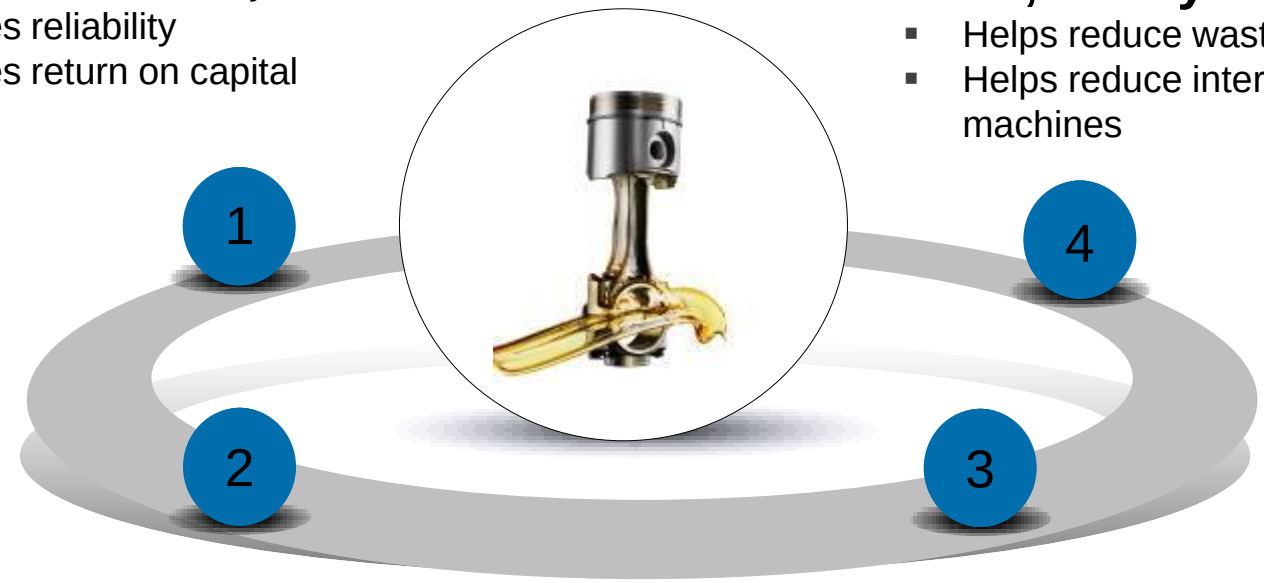
High Performance Lubricants contribution

Extended equipment life

- Helps enhance durability
- Increases reliability
- Increases return on capital

Improved environment, health, safety

- Helps reduce waste streams
- Helps reduce intervention in machines



Extended oil life

- Helps increase equipment availability
- Helps reduce labor
- Reduces inventory costs

Reduced energy consumption

- Lowers operating costs

High Performance Lubricants can Contribute to Sustainability

Reduced Waste Streams

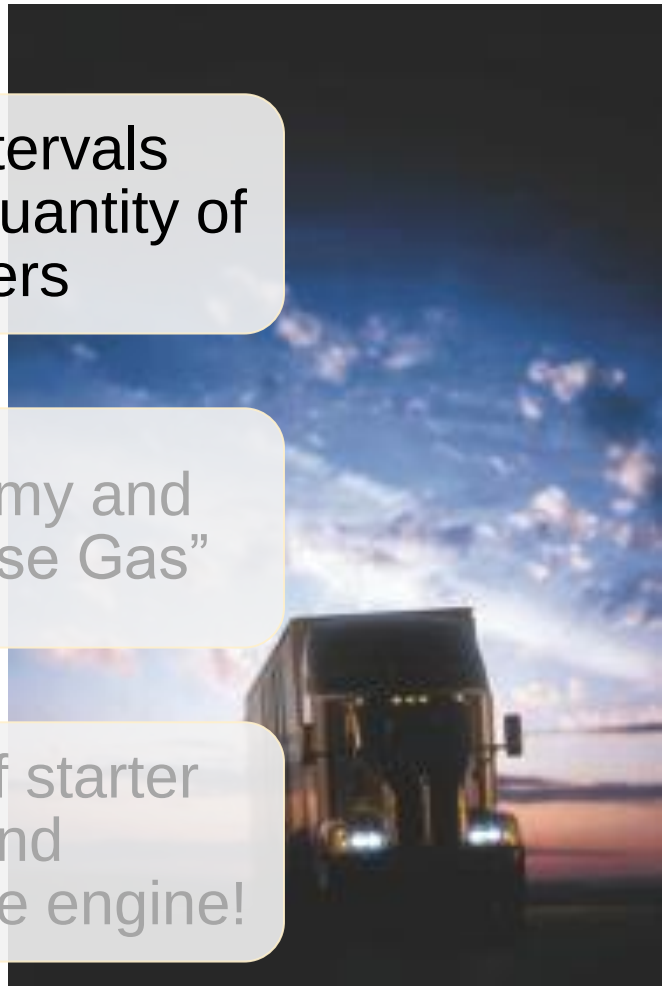
- Optimize service intervals which can reduce quantity of waste oil and oil filters

Reduced Emissions

- Improve fuel economy and reduce “Green House Gas”

Longer Equipment Life

- Reduce recycling of starter motors, batteries, and essentially the entire engine!



ExxonMobil

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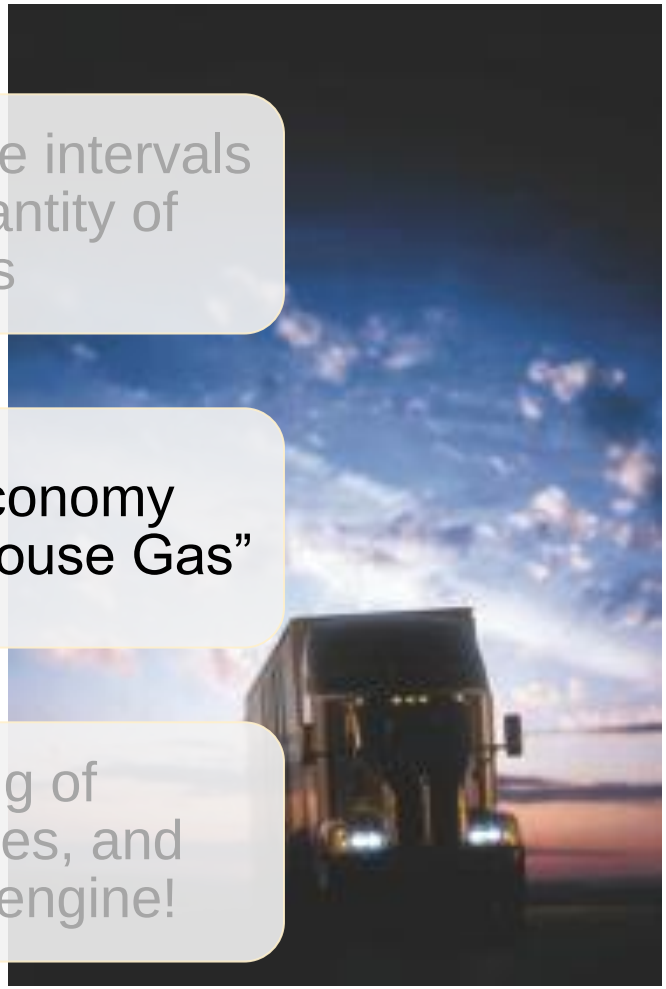

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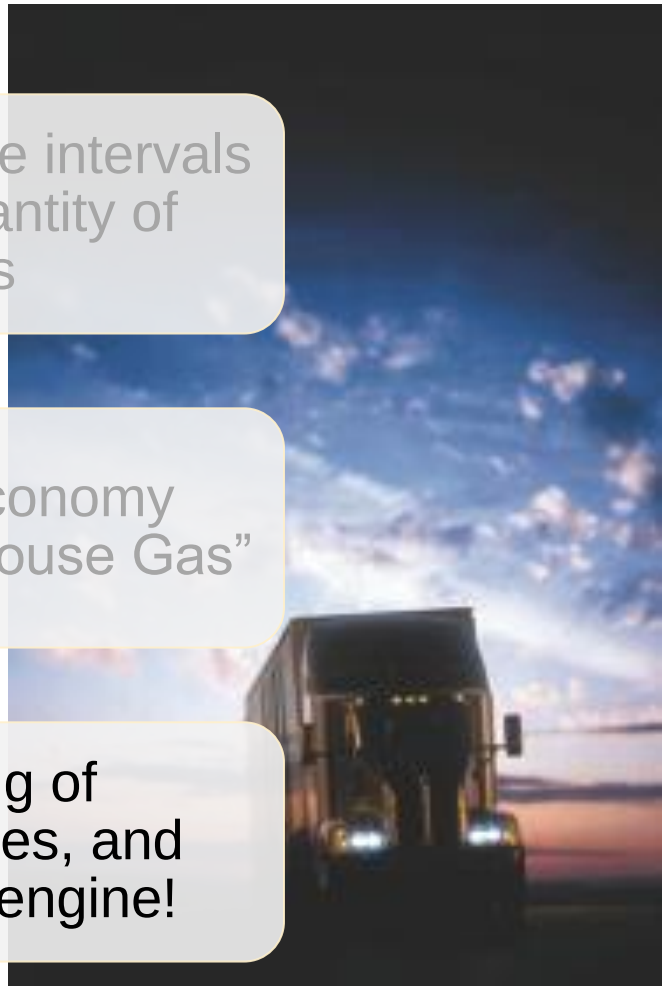
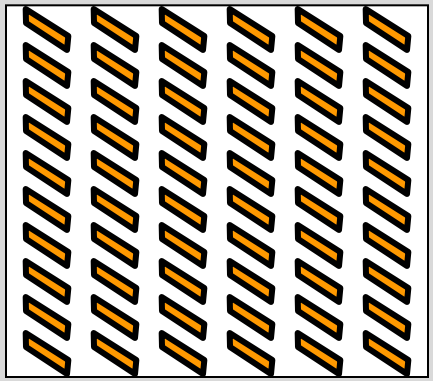
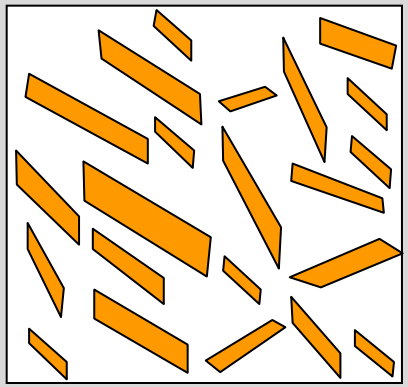
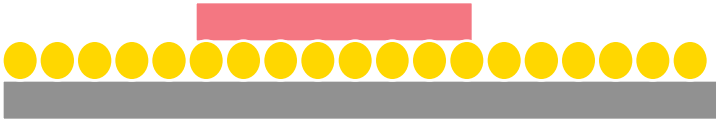


Synthetic fluids – the difference

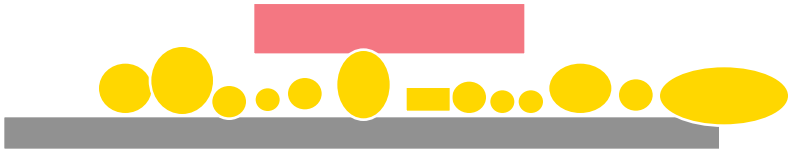
Synthetic	Mineral Oil
Improved purity (no wax or impurities)	Complex mixtures
Tailored properties	Compromise among properties
Synthetic molecular chains 	Mineral oil molecular chains 

Synthetics Are Strong

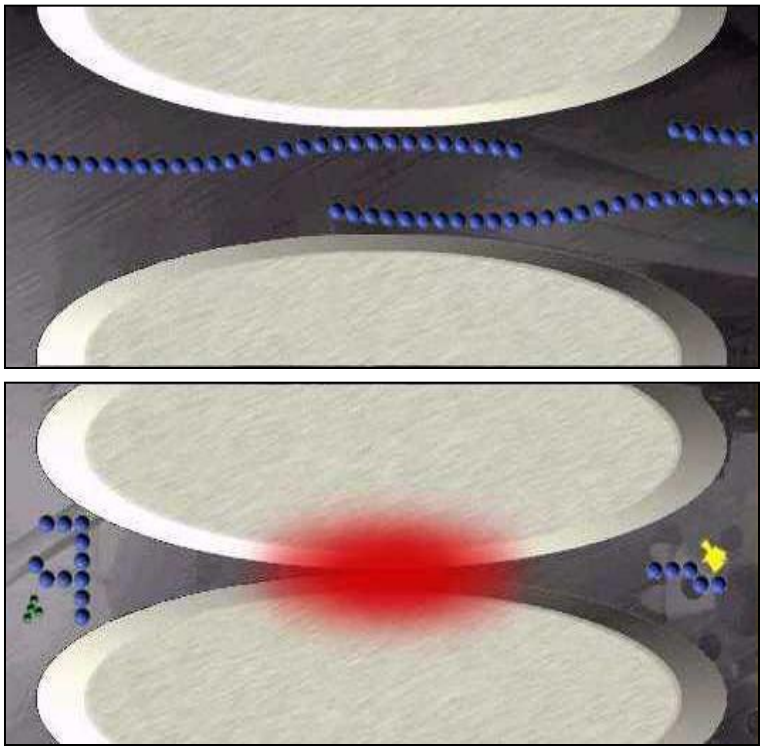
- The uniformly sized molecules in synthetic oil increase film strength
- Strength improves load carrying and reduces component wear



Synthetic Oil

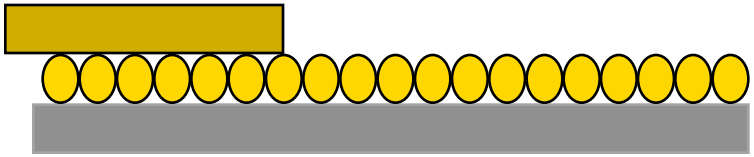


Mineral Oil

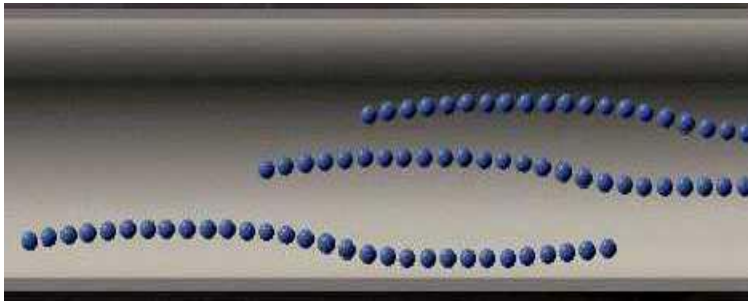


Friction: Synthetics vs. Mineral Oil

Friction Forces

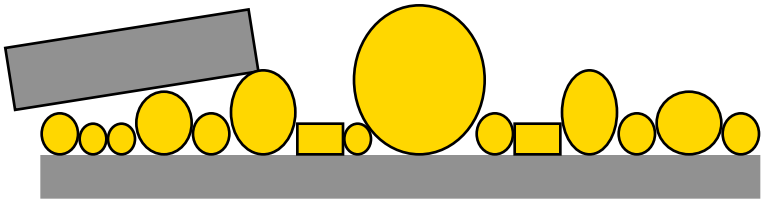


Synthetic Oil

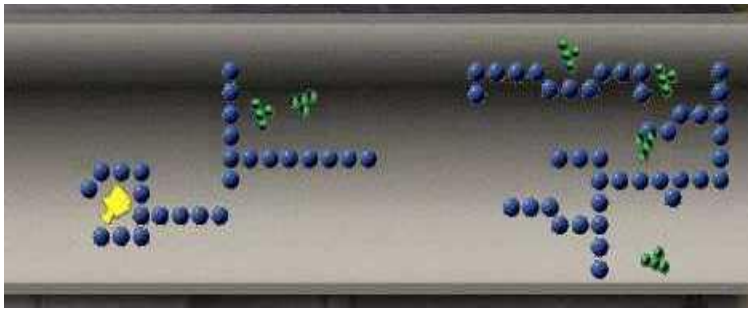


Molecular Structures

Higher Friction Forces



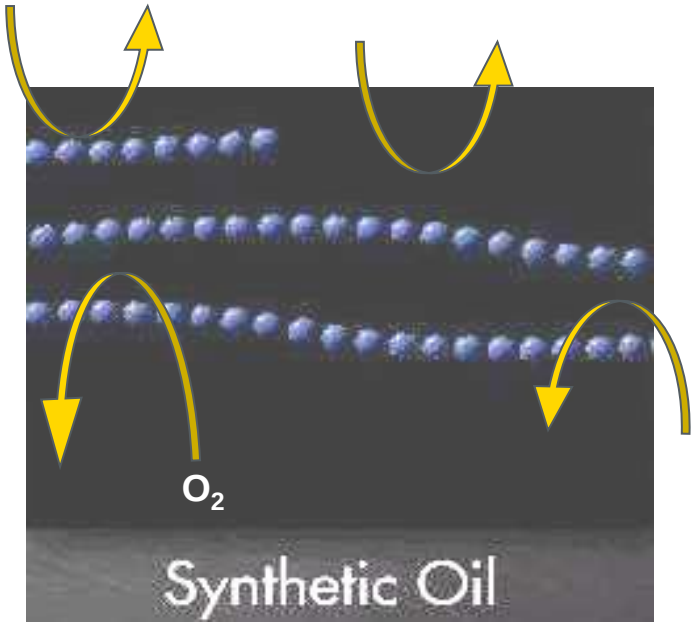
Mineral Oil



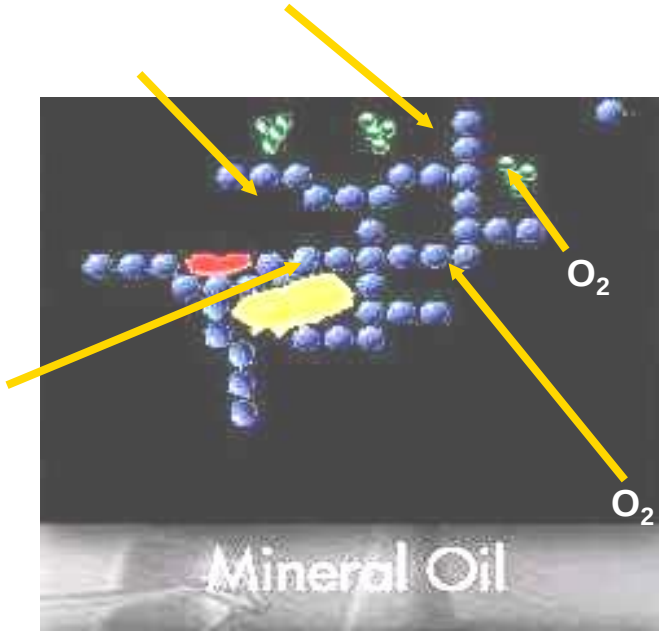
Because of their molecular structures, synthetics have a lower coefficient of friction than mineral oil.

Oxidation Stability

- Oxidation stability is the oil's ability to resist breakdown when combining with oxygen.



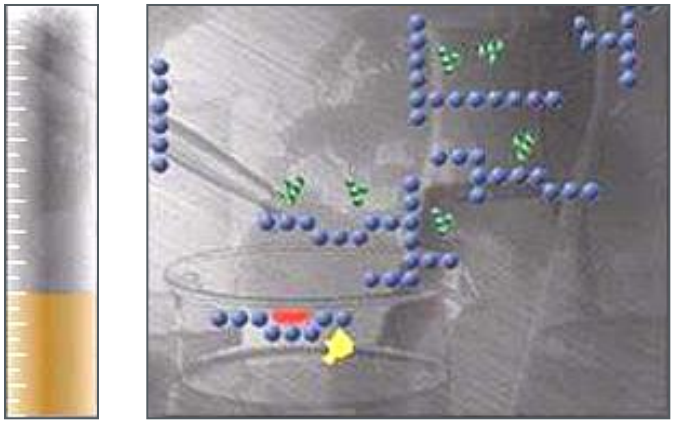
Homogeneous molecules resist attack by O_2



Many weak spots in mineral oil that allow oxidation

Lower Volatility

- Synthetics have lower volatility than mineral oils. Here's why:



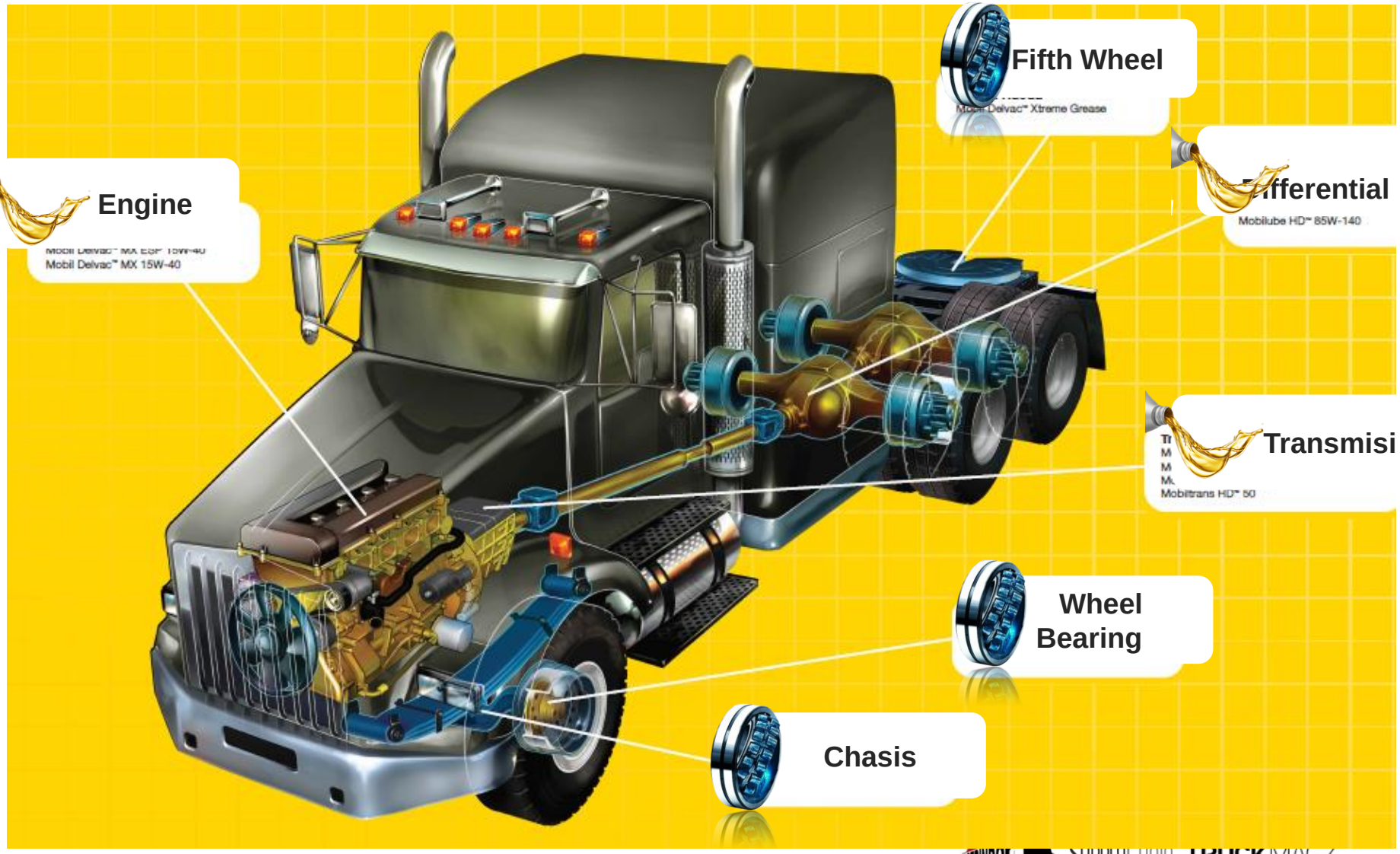
Mineral Oil

Mineral oils have light components that evaporate quickly.

Synthetic Oil

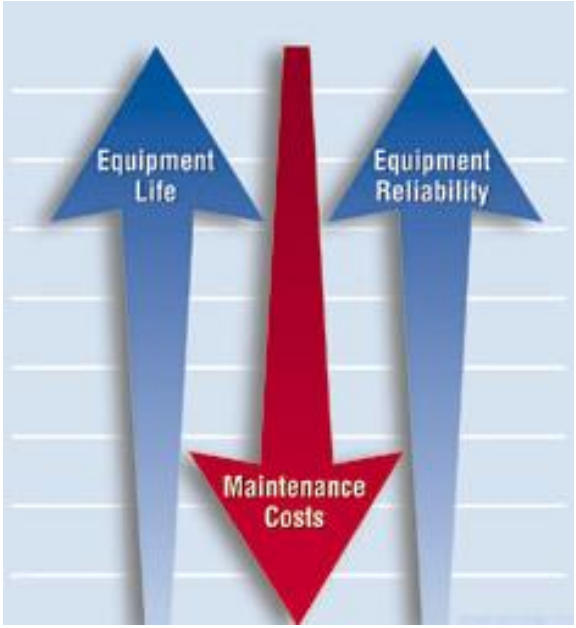
Synthetics have almost no light components, so they evaporate slowly.

Bumper to Bumper Lubes Application



Oil Analysis, Why?

1. Increase productivity
2. Detect potential failures before they occur
3. Reduce unscheduled downtime
4. Improve component durability
5. Lessen lubricant consumption and disposal with optimized drain intervals



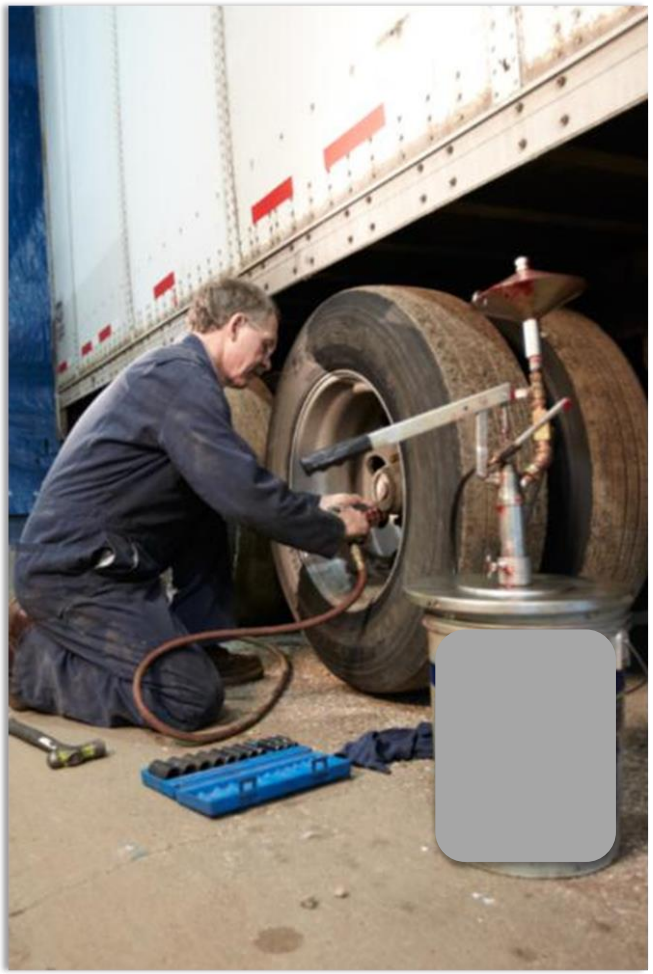
Oil Analysis can help increase productivity and reduce overall maintenance cost

Example: On-Highway Fleet Cost Savings

Lesmeister Transportation

A 50-vehicle fleet based in North Dakota, using fully synthetic engine oil and synthetic products in transmissions, differentials, and gearboxes

- Lesmeister reports a 4% increase in fuel economy, an annual savings of $79,341*
- Fleet owner estimates a savings of over $500,000* in the past 10 years using synthetic products in his fleet



"One of the best business decisions I have ever made, hands down, was upgrading our entire fleet to synthetic oils."

Barry Lesmeister
Owner, Lesmeister Transportation
Bismarck, North Dakota

* Fuel and maintenance savings shown are based on fleet reports. Actual results may vary.

ExxonMobil

Conclusion: High Performance Lubricants can help to overcome Fleet's challenges

Extended equipment life

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- Increases reliability
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Improved environment, health, safety

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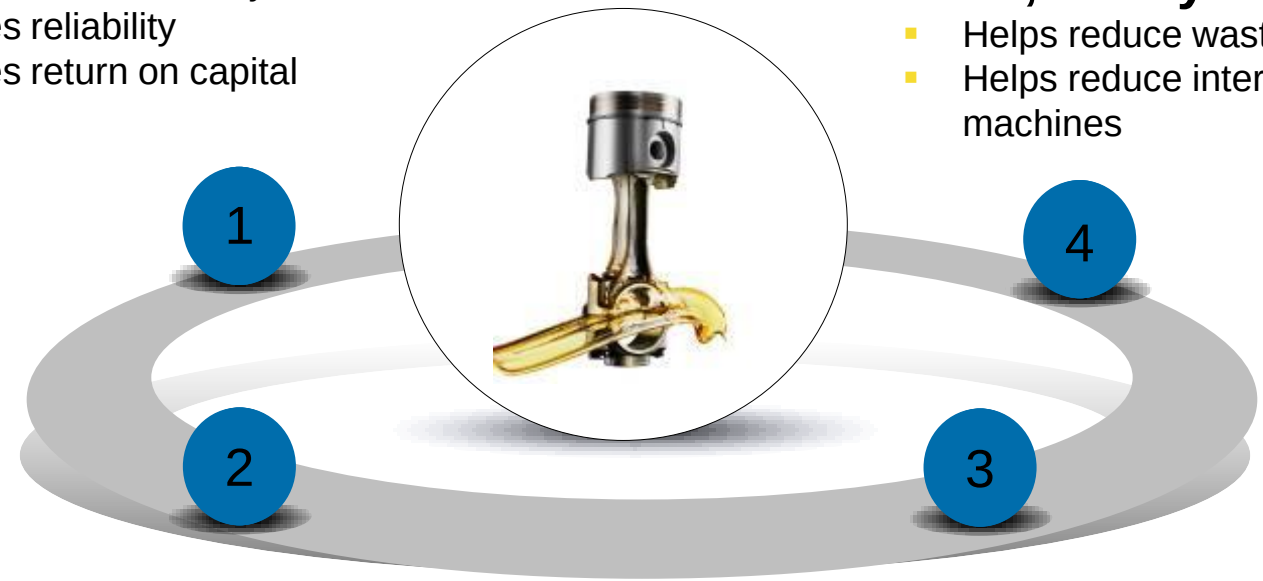

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Thank you!