Purpose

• To give an understanding of the oil analysis program and what is required to ensure that oil sampling from applicable equipment is successfully accomplished.
Objectives

• Condition Monitoring Program
• Improve equipment reliability/readiness
• Lower maintenance costs
• Reduce resource usage
• Maintenance diagnostic tool
  - predictive maintenance

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It’s not new

• Railroads in the 1940s
... and

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• are now 28 laboratories worldwide
People

One of the most important parts of the program.
Methods of Analysis

- Spectrometric
- Viscosmetry
- Crackle Test
- Ferrography
- Infrared Spectroscopy
Elements Tested For

- Aluminum
- Antimony
- Barium
- Boron
- Calcium
- Chromium
- Copper
- Iron
- Lead
- Magnesium

- Molybdenum
- Nickel
- Phosphorus
- Potassium
- Silicon
- Silver
- Sodium
- Tin
- Titanium
- Zinc

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Intervals

- DA PAM 738-750, Chapter 4
- ER 750-1-1, Appendix D
- EP 750-1-1, Appendix E
- Local Maintenance Plan
What To Sample

• All equipment in DA Pam 738-750, Chapter 4
• Construction, Watercraft, and other equip.:
  – diesel engines w/oil cap. of 5 gal. or more
  – associated automatic transmissions
  – hydraulic systems w/liquid cap. of 5 gal. or more excluding brake systems
Sampling Methods

- Valve
- Pump
- Drain
• It’s the most frequent problem that affects sample integrity.
  - Wear metals
  - Water
  - Unusual color
  - Particular matter
Problems ID’d

- Faulty air-induction systems
- Leaking cooling systems
- Loose cross-over fuel lines
- Abnormal wear rates of moving metal parts

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Early Detection

• Lowers maintenance costs
• Decreases downtime
• Improves mission capability

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• Laboratory technician uses it to determine:
  - Quality of lubricant/hydraulic fluids
  - Recommendations to solve problems
  - How to increase operational time of equipment and components
Saves Money

- Oil/lubricant products
- Oil/lubricant filters
- Disposal costs of oil/lubricants and filters
- Repairs by early detection
- Downtime

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• Needs to attend a one day training session at an AOAP site to be certified.
• Needs to be appointed by letter by the district commander.

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Logon at

www.aoap@logsa.army.mil

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