



Failure Analysis 2 - COURSE DESCRIPTION

TITLE: Failure Analysis 2

ISSUE DATE: October 15, 2018

DURATION: 4 days

Failure Analysis Services Level 2 course runs 34 hours over a 4-day period. The class material is presented via slide presentations, lecture, class exercises, general labs, and extensive labs. Class concludes with final exam. This course teaches advanced failure analysis principles that participants need to perform their role in servicing and supporting heavy duty components i.e. Gas Engines, Recip. Compressors, Pumps, etc. **Failure Analysis 2** continues the study and review of principles learned in **Failure Analysis 1** and applies the principles learned to lubricants and components with higher degrees of hardness making them more difficult to analyze. Monday begins with reviewing basic principles and learning about lubricants. Practicing principles begins on Tuesday and continues through Thursday with a combination of presentations and hands on labs. Throughout the week attendees learn about gears, anti-friction bearings, and shafts. Thursday afternoon attendees take a comprehensive 50 question exam then analyze actual field failure case studies and present results while practicing customer presentations and communication skills.

Intended Audience

This course is designed for service managers/supervisors, engineers, service technicians, make ready support personnel, technical support personnel, warranty administrators, etc.

Minimum / Maximum Attendance-

Minimum: 4

Maximum: 12

Prerequisites

Attendees should have:

- Attended Failure Analysis 1 within the last 5 years
- Applied course 1 learnings for a period of 90 days
- Have the opportunity to immediately apply course knowledge and skills

Learning Outcomes

After successfully completing this workshop, participants should be able to:

- Understand the importance of part inspection and reuse in regards to improving durability in component rebuilds and repairs
- Use techniques and procedures to identify the most probable root cause of failures
- Identify several materials and processing flaws that might be found in OEM parts including inclusions, forging laps, quench cracks, hardness levels, machining flaws, etc.
- Identify and list road signs for different types of fractures and the loads that create them, explaining the most probable root cause for each type of fracture in gears and shafts including longitudinal torsional fatigue.
- Identify and list road signs for lubricant related failures and explain the root cause for each type of wear on gears and anti-friction bearings.
- Provide accurate and complete failure analysis determination and reports, particularly in warranty/policy settlements, on a broad range of components
- Provide appropriate and professional operation and preventative maintenance advice to customers.
- Apply knowledge learned to improving service repair methodology, efficiency practices and overall service quality.

Course Agenda

Course is delivered via class lecture, slide presentations, multiple hands on labs, performance of case studies and review of findings.

- Monday
 - Course 1 learning review
 - Lubricants and their failure modes
- Tuesday
 - Gears presentation
 - Gears hands on lab
- Wednesday
 - Anti-friction bearings
 - AFB hands on lab
 - Shafts presentation
- Thursday
 - Shafts lab
 - Exam
 - Case studies
 - Learning review

Resources and Reference

Participants will receive

- USB Flash drive with course info
- Loupe magnifier
- Spiralbound FA notebook
- Contact support

Pre-course Work

No Pre-course work required

If for any reason there is a need to contact Failure Analysis Services, Inc. regarding this learning program, the following personnel should be contacted:

Administration:

Name: Jim Dettore

Phone: +1-601-842-7718

Email: jimdettore@fas-training.com