



# AGING AIRCRAFT LAB

The Aging Aircraft Lab supports the federal government and the aviation industry with investigations into the effects of age on commercial and military aircraft.

## CAPABILITIES

### • Teardown Evaluations:

- Large Section Extraction
- Detailed Disassembly
- Chemical Coating Removal
- Non-Destructive Inspection
  - Close Visual Inspection
  - Florescent Liquid Penetrant Inspection
  - Magnetic Particle Inspection
  - Bolt Hole Eddy Current Inspection
  - Surface Scan Eddy Current Inspection
  - Magneto Optic Imaging Inspection  
(Eddy Current Technique)
  - Ultra Sonic Inspection

### • Failure Analysis

(Optical and Scanning Electron Microscopy)

- Flaw Extent Characterization
- Crack Failure Mode Determination  
(Fatigue, Stress Corrosion, Overload, etc.)
- Corrosion Characterization
- Conductivity Testing
- Chemical Composition Analysis
- Hardness Testing
- Fatigue Crack Growing Rates

### • Process Development

## EQUIPMENT

- 21-cubicft. dry blast paint stripping booth for removal of organic coatings
- Magnaflux L-10 coil
- Parker Research AC/DC yoke
- Liquid penetrant inspection system
- Magneto optic imaging system
- Staveley workstation
- Nortec 2000S eddy scope
- Sonic 1200 ultrasonic unit
- Meiji Inc 7-45x optical microscope
- Hirox Co. 50-300x optical microscope
- Rene Co. digital optical micrometer
- Joel scanning electron microscope
- Chemical coating removal facility

## ENGINEERING EVALUATIONS

- Stress
- Damage Tolerance
- Finite Element Modeling
- Repair Design

## PROJECTS

- KC-135 teardown examination
- C-5A aftcrown skin testing, inspection and analysis
- F-16 STA teardown examination
- A-10 BHEC specimen generation
- B-52 landing gear and flight control teardown and inspection
- FAA Metallurgical/ Fractographic Evaluation of Structural Components

## CLIENTS

- AdamWorks
- Boeing
- Lockheed Martin
- Israel Aerospace Industries
- Sabreliner Corporation
- Sierra Nevada Corporation

## CONTACT

**Melinda Laubach-Hock, Ph.D. Director**  
 melinda.laubach-hock@wichita.edu  
 (316) 978-8205  
 www.niar.wichita.edu