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
    - Fluorescent 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
- Hinox Co. 50-300x optical microscope
- René 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 aft crown 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