

MECHANICAL TEST LABORATORY



The Mechanical Test Laboratory provides the highest standards in static and fatigue testing for composites and metals to generate material strength allowables and evaluate material properties.

Representative Clients: Hawker Beechcraft, Sikorsky, NAVAIR, Via Christi

Representative Projects:

- Off-axis core shear properties of honeycomb core plate shear testing
- Compression after impact testing to determine environmental knockdown effects (NIAR-Industry-State)
- Fatigue and static testing of titanium and stainless steel materials
- ARAMIS photogrammetry on friction stir welded panels
- ARAMIS photogrammetry on patella inserts for alternate ACL human knee repair

Capabilities & Equipment:

- 5-kip to 220-kip load frames with environmental testing chambers
- Slow-cycle fatigue machines
- Impact tower
- Laser extensometer
- Multiple MTS displacement instruments (uni-axial and bi-axial)
- MTS high-temperature chamber (up to 2552° F) and high-temperature uniaxial extensometer
- Strain Smart (multichannel strain indicating software)
- Strain calibrators
- Aramis (offers non-contact 3D optical deformation and strain analysis)
- 60,000 in-lb torsion test frame
- Wide variety of ASTM test fixtures
- High-rate load frame (600 in/sec)

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Located on the Wichita State University campus, in a city recognized as the Air Capital of the World, The National Institute for Aviation Research (NIAR) is a prestigious state-of-the-art aerospace research and development laboratory with global reach and expertise. NIAR integrates university, government and industry in cooperative efforts to advance technologies.

The Institute's clientele include many of the world's aerospace manufacturers, NASA and the FAA. It is the largest aviation R&D academic institution in the United States, with 135,000 square feet and more than a dozen laboratories. NIAR is recognized internationally as a high-tech research and development, design, testing, certification and learning center.