

Static Testing

Overload frames, hydraulic actuators, servo-controlled and pressure-controlled load application, test fixture design, strain gauge data acquisition and deflection measurements are all among the tools and methods available to help test the strength of your product. Data can be continuously recorded and data "snapshots" taken at prescribed loading increments.

Fatigue Testing

DTB has an extensive fatigue test laboratory capable of performing Coupon, Component and Full Scale Fatigue Testing of various components. Over 100 major test fixtures are available to test specific aircraft components. We also have the engineering and design capability to design and fabricate specialized test fixtures to test any type of component requiring fatigue testing.

Fatigue Life Prediction

Using strain life methods, stress life or load life methods, we can analyze your product, develop a loading spectrum and make fatigue life predictions for your system. The strain information can come from test data or from finite element modeling. We can support field strain gauges and load measurements to provide data for these analyses.

Damage Tolerance Analysis

DTB has conducted significant structural test and analysis programs that involve damage tolerance principles and design. Crack growth coupon tests are used to determine the effect of loading frequency and environment on crack growth parameters. DTB utilizes AFGROW and other software packages for analysis of structures for crack growth life.

Servo-Controlled Load Application

DTB utilizes Servo-Controlled linear or rotary hydraulic actuators to apply the test loads or displacements during all static and fatigue testing. Load control for fatigue applications is typically accomplished using Cyber computer controlled servo feed back control systems.

Loads Development

We can work with your engineering staff to determine the actual, real world loading conditions on your system. Using statistical methods a loading spectrum can be determined that expands the recorded data into the full range of conditions. This information can be used in analytical life predictions and for discrete tests.

Coupon Testing

DTB facilities include a static load Tinius Olsen, two Instron test systems and two servo hydraulic MTS systems to perform several types of material, hardware or component tests. The testing ranges can reach up to 120 kips statically and 22 kips (tension) dynamically. We also provide coupon programs for environmental (high temp and low temp) and corrosion affects on materials as well as surface finishes.

Strain Gauge Services

We have experience with custom strain gauging of customer parts for obtaining accurate strain data in support of structural and fatigue testing. Applications include most materials such as aluminum, steel, alloys, titanium and fiberglass laminates. Our technicians are trained in gauge selection, surface preparation, adhesive selection, installation and wiring for all types of strain measurements.

Flight Test Support

We have the expertise for installing all types of transducers and recording equipment for aircraft flight testing.

Instrumentation and Data Acquisition

DTB has the capability of acquiring and recording 100+ strain measurements, 25+ deflection measurements and 30+ load measurements. Our engineers can quickly tailor software programs to meet customer requirements for data recording and real-time display of data.

A World of Engineering and Testing Under One Roof™

* Please visit www.dtb.com for testing covered under our scopes of accreditation.

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ENGINEERING & TEST DIVISION



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COMMERCIAL & MILITARY AIRCRAFT STRUCTURAL SERVICES

Innovation.
Integrity.
Dependability.



When your product's structural durability needs to be predicted, verified and validated, turn to DTB's Structural Testing and Fatigue Testing group. We provide you with the necessary structural testing equipment and personnel to test the design and manufacturing integrity of your product. Call upon our vast experience in commercial and military applications.

Testing Services

- Static Testing
- Fatigue Testing
- Fatigue Life Prediction
- Servo-Controlled Load Application
- Coupon Testing
- Strain Gauge Services
- Flight Test Support
- Instrumentation & Data Acquisition
- Proof Load Testing
- Qualification Testing

Engineering Services

- Design and Program Engineering
- Reverse Engineering
- Metallurgical Engineering
- Failure Analysis
- Prototyping
- Ruggedizing
- Damage Tolerance Analysis
- Loads Development
- Fatigue Life Extension

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*A World of Engineering and Testing
Under One Roof™*



ISO 9001:2015 and AS9100D
Registered



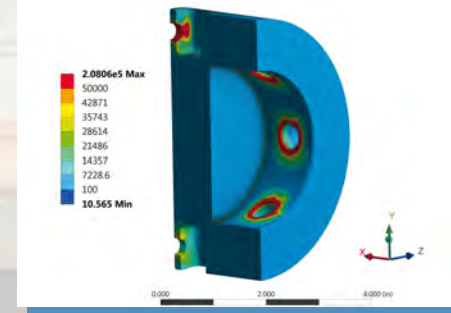
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Visit our web site at: www.dtb.com

* Please visit www.dtb.com for testing covered under our scopes of accreditation.



Alternate Source Qualification Testing:

- Two (2) Specimens Required
- Compare to OEM Test Results
- AMCOM Approved Test Plans Available
- AMCOM Validated Test Setups Available
- Over 40 Fixtures Available for Part Qualification



Engineering and Analysis:

- Loads Development
- Finite Element Analysis (FEA)
- Specification Development
- Design Improvements
- Test Plan/Procedure Development
- Reliability and Maintainability Analysis
- Reverse/Re-engineering Programs
- Life Extension Programs
- Fatigue Analysis
- Logistic Support Analysis and Documentation

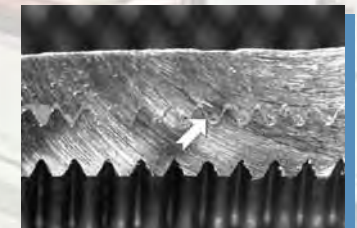
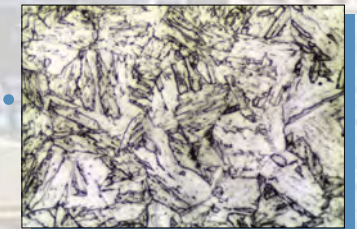
Design Engineering, Fabrication:

- Structural Fixture Design
- Mechanical Systems Design
- 2D and 3D Computer Aided Design
- N + 1 Aircraft Interfaces
- Complete Welding and Machining Capabilities
- Aircraft Assembly per Specification
- Automated and Manual Test Facility Design



Failure Analysis:

- Scanning Electron Microscope (SEM)
- Optical Microscopy
- Metallography
- Digital Image Capturing



Inspection Laboratory:

- Leitz and Starrett Coordinate Measuring Machines (CMM)
- Hardness
- Liquid Penetrant
- Magnetic Particle
- Complete Inventory of Dimensional Measurement Equipment
- Coating Evaluation

Instrumentation and Data Acquisition:

- Strain Gauging
- Crack Wires
- Deflection Measurements
- Load Measurements
- Servo Controlled Fatigue and Static Load Application
- Automated Real Time Data Acquisition to 100 Channels
- Electrical/Electronic Parameter Acquisition
- Data Acquisition During Environmental Exposure

