

• Ballistic/Suspension Equipment Performance Evaluation:

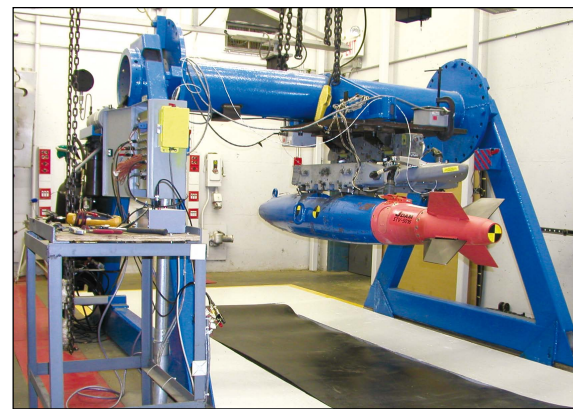
- Simulated Store and Hanger Design and Fabrication
- Store/Separation Evaluation
- Ejector forces (lbs)
- Velocity (ft/sec)
- Displacement
- End of Stroke Determination and Lag Time (ms)
- Pitch Rate (rad/sec)
- Breech Pressure (psi)
- Pitch Angle (degree)
- Simulated Catapult and Arrested Landing Testing
- Qualification of BRU 32/33, BRU 46/47, BRU 55, and B-1 Bomb Racks
- Evaluation of LAU 106 and LAU 117 Launchers
- MIL-T-7743 Testing, Store Suspension and Release Equipment
- First Article/Production Lot on LAU 7 Guided Missile Launcher
- MAU 12 Bomb Rack Testing
- High and Low Temperature Firing of Suspension Equipment
- Ejection Performed Under High g Loading

• Aviation Life Support Equipment/Systems Testing:

- Testing and Evaluation of:
 - Helmets and Helmet Mounted Equipment
 - Rescue and Restraint Systems
 - Flight Clothing, Anti-Exposure Suits
 - Respiration Systems, Pressure Vessels/Systems
 - Chemical/Biological Protective Equipment
- Windblast/Simulated Ejection Test Facility
- Optics and Laser Eye Protection Test Facility
- Inflatable Equipment Test Facility: Rafts, Preservers
- Pneumatics Laboratory: Air, O₂, CO₂, N₂, He, Ar
 - Burst Pressure, Hydrostatic, 30,000 psig
 - Proof Pressure, Gaseous, 12,000 psig
 - Reliability/Life/Fatigue Testing
 - Ballistic Antifragmentation
- Environmental Programs
 - Coatings/Corrosion Prevention Test and Evaluation
 - R&M Improvements: Materials and Products
 - ODC Replacements: Performance Evaluation

• Special Programs we have worked on:

- Positive Pressure Breathing G-Sensing Chest Mounted Regulator
- Chemical and Biological Protection (AR-5 Aircrew Protective System)
- Crash and Post-Crash Survivability:
 - Inflatable Body and Head Restraint System (IBAHRS)
 - Catseye Emergency Divestment System (CEEDS)
 - MA-14 Inertia Reel Qualification Program
- Combat Edge Program
- Eagle AILSS Program
- Alternate Source Qualification
- Accident Investigations
- Fleet Investigations
- Field Training
 - Pre and Post Award Analysis



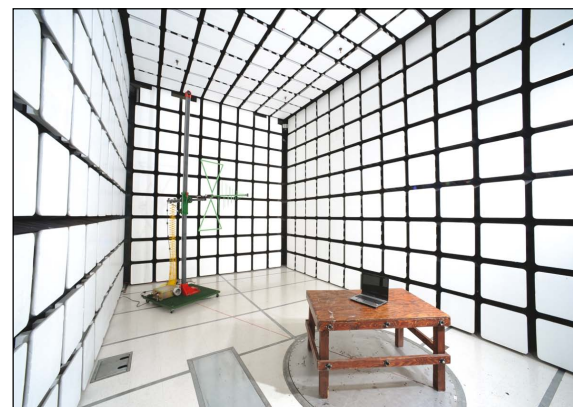
Bomb Rack Performance Ejection Facility



Windblast Testing



Liquid Penetrant



3 Meter Room

AIRCRAFT SYSTEMS TESTING

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Integrity.
Dependability.**



Dayton T. Brown, Inc. has a rich history of testing aerospace structures and components for fixed wing and rotorcraft applications. Backed by an experienced, highly competent staff, DTB offers a broad range of engineering and testing support in aircraft structures, aircraft armament systems, aircraft life support systems, and aircraft components. You can benefit from our expertise in the following areas:

- | | |
|---|--|
| • Structural Analysis and Fatigue Testing | • Environmental and Dynamic Testing |
| • EMI/EMC and Electrical Testing | • Hydraulic Test Stands |
| • Dimensional Inspection Laboratory | • Metallurgical Investigation and Failure Analysis |
| • Instrumentation and Data Acquisition | • Engineering and Analysis |
| • Ballistic/Suspension Equipment Performance Evaluation | • Aviation Life Support Equipment/Systems Testing |

You can count on DTB to provide testing to all aerospace specifications, including:

- MIL-STD-810
- RTCA/DO-160
- MIL-STD-461

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ENGINEERING, ANALYSIS, AND TESTING SERVICES FOR AIRCRAFT SYSTEMS



• Structural Analysis and Fatigue Testing:

- Structural Fixture Design
- Mechanical Systems Design
- 2D and 3D Computer Aided Design
- Fixed Wing and Rotary Fatigue/Structural Test
- Complete Welding and Machining Capabilities
- Aircraft Assembly per Specification
- Automated and Manual Test Facility Design
- Special Purpose Test Equipment
- Prototype Development, Manufacturing, Testing, and Evaluation



Structural Test Facility with 40ft Ceiling

• Environmental and Dynamic Testing:

- Acceleration
- Altitude
- Combined Environments
- Explosive Decompression
- Explosive Atmosphere/Explosive Proofness
- Fluids Susceptibility
- Fungus Resistance
- Humidity
- Icing
- Noise
- Reliability
- Salt Fog
- Sand and Dust
- Shock
- Temperature
- Vibration
- Wind and Rain/Waterproofness



High Level Inverted Vibration Test

• EMI/EMC and Electrical Testing:

- Electrical Power/Power Inputs
- EMI/EMC
- Lightning
- Electrostatic Discharge Testing (ESD)
- Shielding Effectiveness Testing
- Magnetic Field Emissions and Immunity



Lightning Testing

• Test Stands and Test Systems

DTB's Test Stands and Test Systems are Manufactured to Support:

- Hydraulic Components and Support Products
 - Pumps, Motors, Servo Valves, Actuators, Power Supplies, Calibration Carts
- Fuel Components
 - Fuel Transfer Valves and Fuel Pumps
- Pneumatic Components
 - Valves, Cylinders, Actuators, Reservoirs, Vacuum Pumps
- Electrical-Mechanical Components and Assemblies
 - Solenoids and Solenoid Valves, Gear Boxes, Winches, Hoists



Hydraulic Test Stand



CMM Inspection

• Dimensional and Inspection Laboratory:

- Starrett and Mitutoyo Coordinate Measuring Machines (CMM)
- Leitz High Accuracy CMM
- Surface Finish
- Digitization of Part/Flight Surfaces
- Contour Measurement
- Gear Testing
- Aircraft System Parts Evaluation (Fixed Wing, Rotary)
- Complete Inventory of Dimensional Measurement Equipment
- Coating Evaluation

• Root Cause Determination and Failure Analysis:

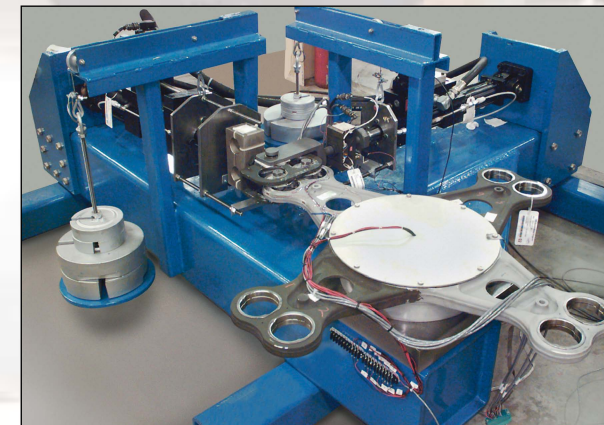
- Scanning Electron Microscopy (SEM)
- Fractographic Analysis (Macro and Micro)
- Metallography
 - Optical Microscopy
 - Metallographic Examinations
- Digital Photography
- Mechanical Properties Evaluation
 - ASTM Standard Tests
 - Hardness
 - Fatigue Strength
- Corrosion Analysis and Testing
- Arc-Emission Spectrometry
- Coating Analysis/Selection
- Nondestructive Testing
 - Liquid Penetrant and Magnetic Particle



Scanning Electron Microscopy

• Instrumentation and Data Acquisition:

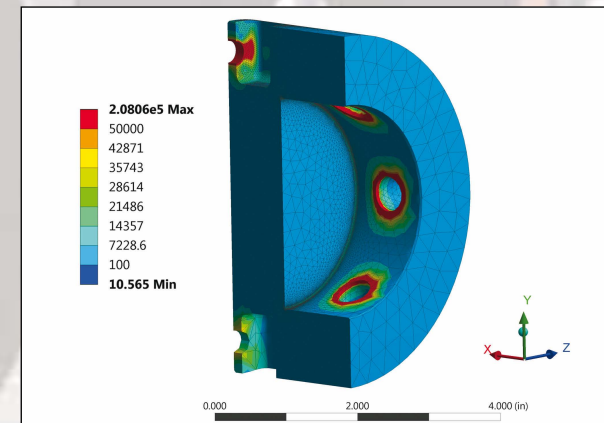
- Strain Gauging
- Crack Wires
- Deflection Measurements
- Load Measurements
- Servo Controlled Fatigue and Static Load Application
- Automated Real Time Data Acquisition to 100 Channels
- Electrical/Electronic Parameter Acquisition
- Data Acquisition During Environmental Exposure



Rotorcraft Fatigue Testing

• Engineering and Analysis:

- Loads and Spectrum Development
- Finite Element Analysis (FEA)
- Specification Development
- Design Improvements/Parts Obsolescence Solutions
- Test Plan/Procedure Development
- Source Identification and Development
- Reverse/Re-engineering Programs
- Life Extension and Aging Aircraft Programs
- Fatigue and Crack Propagation Analysis
- Logistic Support Analysis and Data Package Development
- Qualification and Test of CSI and CAI Parts
- Product Enhancements/QDR Solutions



Finite Element Analysis (FEA)