TOTAL PROTOTYPE SYNTHESIS
FOR HIGHLY ENGINEERED
APPLICATIONS

Defense Aerospace Industrial
Prototype Solutions

Product Improvement Drivers
- Energy Efficiency
- Improved Materials
- Lower Unit Cost
- Lower Maintenance Cost
- Longer Life/Life Extension
- Higher Resistance to Fatigue/Corrosion

Engineering Analysis

Multiple DoD Contract Vehicles

Improvements from Validation Testing

System Design Enhancements

Production Considerations and Sourcing

Technology Integration

Reverse Engineering Alternative Design Comparison

Customer Needs

www.dbttest.com

A World of Engineering and Testing Under One Roof™
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Innovation. Integrity. Dependability.
You can count on DTB for the right answers:

**Specialized Engineering Expertise**
- 2,000 Different Prototype & Testing Jobs a Year
- Prototype Fabrication/Qualification
- Failure Analysis/Materials-Coatings-Corrosion Evaluations
- Development of Complete Design Data Packages
- Vendor Development/Qualification/Quality Control
- Test & Evaluation (All Aspects Test Development/Execution)
- Test Equipment Development/Fabrication
- Documentation & Logistics

**Design Engineering for Prototypes**
- Kinematics Studies
- Thermal Modeling
- Computational Fluid Dynamics
- Rapid Prototyping SLA, SLM, Quickturn Suppliers
- Turnkey Design & Fabrication Services
- Failure Mode Effects Analysis (FMEA)

**Structural Analysis**
- Finite Element Analysis (FEA)
- ANSYS (Version 14.0, Structural)
- Static Linear Solutions
- Nonlinear Variable Contact
- Dynamic, Transient & Shock
- Loads Development
- Static Loads
- Dynamic Loads
- Fatigue Spectrum Development
- Fatigue Life & Damage Tolerance Calculations
- AFGROW, SOMAT LifeEst Software

**Structural Test Facilities**
- Structural Test Center
- Main Test Area - 30,000 sq. ft.
- High Bay Test Area - 7,000 sq. ft.
- Central Hydraulic Power Supply — Eight (8) - 100 gpm @ 3,000 psi Pumps with 200 HP Electric Motors
- 100+ Major Test Fixtures
- Static Testing
- High Cycle Fatigue Testing
- Coupon Testing
- Damage Tolerance Verification

**Material Development**
- Failure Analysis Experience
- Stereomicroscopes
- Borescopes
- Inverted Optical Metallograph
- High Resolution Digital Imaging Equipment
- Metallographic Sample Preparation Equipment
- Advanced Image Analysis Software
- Comprehensive Reference Library & Specifications Database
- Various Nondestructive Flaw Detection Testing Techniques and Equipment
- Sputter Coater
- Hardness Measurement Machines

**CAD to Prototype Technologies**
- Laser, Plasma, Water Jet, Knife and Sheet Material Cutting
- 3-Axis CNC machining: Computer Controlled Subtractive Milling or Turning Machines
- Rapid Prototype: 3D printing of Plastic or Plaster parts using SLS, SLA and FDM

**Reverse Engineering**
- Part Profile Scanning
- Data Package Development
- Material Selection
- Specification Substitution
- Product Improvement
- Vendor Qualification

**Failure Analysis Experience**
- Corrosion Assisted Failures
- Wear and Erosion
- Fatigue Failures
- Defective Design, Manufacturing, & Usage Related Failures
- Aircraft /Armament
- Shipboard & Submarine
- Automotive
- Biomedical
- Electronic’s Sensors, & Systems
- Power Generation
- Safety and Survival

**Typical Deliverables & Benefits**
- Re-Engineering Plans
- Complete, Validated Data Packages
- Affordable, Limited Production Quantities
- Enhanced System Readiness
- Increased Competitive Products
- Product Standardization
- Reduced Design & Construction Cost
- Reduced Procurement Lead Time
- Reduced Operating & Logistics Cost

**Structural Test Services**
- Servo-Controlled Load Application
- MTS Aero-ST Load Control System
- MTS Flex Test Load Control System
- Cyber II Load Control Systems
- 180+ Actuators, 100+ Servo Valves
- Instrumentation & Data Acquisition
- Automated Real Time Data Acquisition
- Load Cells, Torque Transducers, LVDT’s
- Strain Gauge Installation & Calibration
- Crack Wire Installations
- Flight Test Support
- LABview Software Development
- National Instrument Data Acquisition Components

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