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Aviation

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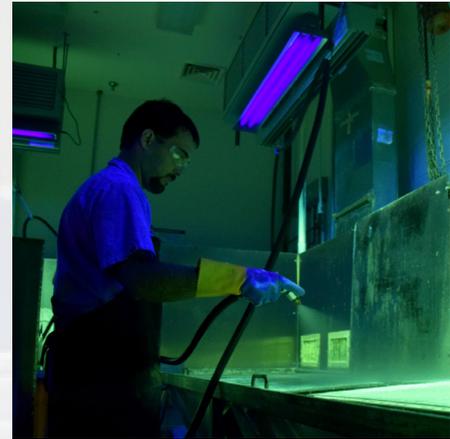


CASTLE

CENTER FOR AIRCRAFT
STRUCTURAL LIFE EXTENSION

Scope of Work

The contract scope of work includes engineering tasks and research activities for aging structures. Mission changes and structural modifications have changed the structural behavior in ways not envisioned by the original designers. Because of these, the engineering and analysis activities surrounding structural sustainment have moved beyond the routine and are now focused more toward research and development. This move from a “find and fix” mentality to one of “anticipate and manage” requires predictive tools and expertise in analysis that goes far beyond routine engineering support. Structural sustainment demands an understanding of the physical principles underlying damage progression, and the development of new, cutting-edge tools and techniques to maintain both certification and economical operation.



Core Competencies

- Structural System Tear-Down Analysis
- Failure (Root Cause) and Metallurgical Analysis
- Fatigue Crack Growth Analysis
- Flight Data Acquisition and Analysis
- Modeling and Simulation
- Corrosion Chemistry and Mechanisms

Contract Activities

- Aircraft Structural Tear-Down and Analysis
- Full-Scale and Component Level Fatigue Testing
- Stress Intensity Factor Solutions for Structural Analysis
- Technology Assessment of Aging Life Support Equipment
- Research for NDI Tool Design and Development
- Development of Aircraft 3D Model and Viewer Software



The scope of this effort may cover a variety of structures (from a micro-level up to aircraft, ships, tanks, ground support equipment, bridges and other varieties of aging structures).

An experienced and diversified aerospace provider, Sabreliner Aviation is recognized worldwide for corporate and government aircraft maintenance, modification, custom completions and manufacturing support. Today's Sabreliner Aviation is a diversified aviation services company that is recognized worldwide for keeping older aircraft flying and supporting new aircraft production. Our customers include some of the biggest names in aviation: Airbus, BAE Systems, Boeing, Bombardier Aerospace, L-3 Communications, Lockheed Martin, Northrop Grumman and Sikorsky Aircraft, to name a few.



Southwest Research Institute® (SwRI®) is an independent, nonprofit, applied research and development organization that has supported the Aircraft Structural Integrity Program (ASIP) efforts of military aircraft for more than thirty years. Our efforts have spanned the entire range of ASIP tasks from providing in-flight measurements of aircraft loads to the fracture mechanics-based damage tolerance analysis of critical fatigue locations using those loads. We have provided a complete range of testing from detailed metallurgy exams to full-scale aircraft fatigue tests. We offer a complete range of ASIP engineering services.



Government CASTLE Points of Contact:

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