Southwest Research Institute® (SwRI®) structural engineers perform damage tolerance analysis for military and commercial aircraft to give clients the information necessary to safely and effectively manage the structural health of their fleets. SwRI has expertise using state-of-the-art tools such as AFGROW, NASGRO®, and StressCheck® along with significant experience correlating analyses to crack growth test results. Proficiency with automating these tools allows for efficient and timely results.

**Capabilities**

- Crack growth analysis software tools (AFGROW, NASGRO®, CRACKS, etc.)
- Stress intensity calculation using finite element and boundary element tools (StressCheck®, NASBEM, etc.)
- Correlation to spectrum test results from coupon and full-scale tests to determine crack growth rates and crack growth retardation due to spectrum effects
- Automation for efficient and accurate analysis of large numbers of locations and/or variation of parameters
- Stress determination using hand stress analysis and finite element tools such as FEMAP and NASTRAN
- Risk and probabilistic crack growth analysis using state-of-the-art tools such as PROF and NESSUS®
- Material, component, and full-scale testing
- Damage tolerance training/short course
Experience
SwRI has performed damage tolerance and fatigue analysis for U.S. military aircraft (A-10, F-5, F-16, T-37, T-38) and for foreign military and commercial clients.

Facilities and Analysis Tools
SwRI uses state-of-the-art crack growth analysis tools such as NASGRO® and AFGROW, as well as finite element modeling tools such as NASTRAN, FEMAP, and StressCheck® for the determination of stresses and stress intensities. SwRI has facilities to perform tests on structures ranging from coupons to components to full-scale aircraft.

We welcome your inquiries.
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