

## Justin Rausch

### Summary of Qualifications

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| <ul style="list-style-type: none"> <li>▪ Static and Dynamic Mechanical Testing at the Full Scale, Component and Coupon Levels</li> <li>▪ LabView Data Acquisition</li> <li>▪ Test Instrumentation</li> </ul> | <ul style="list-style-type: none"> <li>▪ Root Cause Failure Analysis including Electron/Stereo Microscopy and Energy Dispersive Spectroscopy</li> <li>▪ Composite and Adhesive Bonding</li> </ul> |
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### Experience

Oct 2014 to Present	SAFE Inc.	Monument, CO
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#### Senior Engineer

- Mechanical testing and failure analysis engineering services

Nov 2010 to Oct 2014	Nex-One Inc.	Colorado Springs, CO
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#### Senior Engineer

- Senior Test Engineer
  - Responsible for supervising the creation and execution of test programs
- Senior Member of KC-135 Fuselage Structural Teardown, C-130 Empennage Teardown, and B-707 JSTARS Wing Teardown.
  - Subject matter expert for structural disassembly of components
  - Senior Failure Analyst
- Member of B1-B Structural Teardown Planning Team
  - Responsible for identifying key structural components based on fatigue and damage tolerance data for both the full scale fatigue test and structural teardown.
  - Developed a plan for sectioning the aft fuselage into manageable sections for transportation and further teardown operations, while causing minimal damage to the parts of interest for failure analysis
- Project Lead for Parachute Evaluation Study
  - Interfaced with customer to design a test program studying the residual strength of expired ejection seat parachute canopies
  - Designed fixtures and test methodology to test parachute construction materials
- Installed and maintained strain sensors on Air Force TG-16 gliders in support of flight data acquisition program
  - Accurate loads models from this program gave the maintainers more accurate usage rate for the fleet resulting in increased safety and reduced maintenance burden.

Sep 2004 to Nov 2010	Valdez International Corp.	Colorado Springs, CO
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#### Research Engineer

- Lead Engineer on Air Force Wide Fuselage Dent Program
  - Expanded dent research from a single airframe to all applicable USAF airframes.
  - Designed and executed the mechanical testing that evaluated the effect of dents on the performance of multiple aircraft fuselage structure.
  - If guidance is accepted, could provide millions of dollars in reduced maintenance
- Lead Engineer for customer funded research into crack growth through cold worked holes
  - Tested the effects of overloads and underloads on the crack growth rate through cold worked holes
  - Used Visual Image Correlation to find the strain field around the holes throughout the test.
- Mechanical Testing
  - Executed and consulted on test programs designed by other engineers
    - Primarily fatigue and fracture mechanics related testing
  - Conducted testing and maintained data acquisition on Stress Corrosion Cracking load frames
- Member of engineering team that instrumented Coast Guard C-130 for flight loads
- Assisted lead engineer of KC-135 dent program by conducting shear, compression and fatigue testing of representative aircraft components.

## Justin Rausch

<b>Education</b>		
Sep 1999 – Jun 2004	Wright State University	Dayton, OH
<b>BS – Mechanical Engineering</b>		
<b>Publications</b>		
<u>USAF Technical Reports</u>		
Ms. Cindy Klahn, Dr. Sandeep Shah, Dr. Saravanan Arunachalam, Mr. Kevin Gibbons , Mr. Justin Rausch, Mr. Mike Bugeaud, Mr. Peter Jackman, Mr. Ian Pryce, Mr. Jesse Vickers, Ms. Molly Walters (2013). B-1B Teardown Planning Effort Final Report. United States Air Force Academy.		
Mr. Kevin Gibbons, Dr. Sandeep Shah, Mr. Justin Rausch, Mr. Mike Bugeaud, Mr. Peter Jackman, Mr. Ian Pryce, Ms. Cindy Klahn (2013). B707-330C Wing Structural Teardown Analysis Of Construction Number (C/N) 20124. United States Air Force Academy.		
Ms. Cindy Klahn, , Dr. Saravanan Arunachalam, Mr. Kevin Gibbons , Mr. Justin Rausch, Mr. Mike Bugeaud, Mr. Peter Jackman, Mr. Ian Pryce (2013). C-130 Empennage Structural Teardown Analysis. United States Air Force Academy.		
Mr. Jesse Vickers, Dr. Sandeep Shah, Dr. Saravanan Arunachalam, Mr. Justin Rausch, Mr. Peter Jackman, Ms. Cindy Klahn, Ms. Molly Walters (2013). KC-135 Structural Teardown Analysis Program Report for KC-135R, S/N 63-8886 VOLUME I. United States Air Force Academy		
Justin W. Rausch (2007). Negligible Damage Limits for Dents in Fuselage Structure. United States Air Force Academy.		
Gregory A. Shoales, Sandeep R. Shah, Justin W. Rausch, Molly R. Walters, Saravanan R. Arunachalam and Matthew J. Hammond (2006). C-130 Center Wing Box Structural Teardown Analysis Final Report. United States Air Force Academy.		
<u>Conference Proceedings</u>		
Rausch, Justin, Greg Shoales, and Melinda Laubach (2010). C/KC-135 Teardown Analysis Program, Protocol 4: Teardown Section Disassembly, Development and Execution. Proceedings of the 2010 Aircraft Airworthiness & Sustainment Conference, Austin, TX.		
Rausch, Justin (2007). Negligible Damage Limits for Dents in Fuselage Structure. The 9th Joint FAA/NASA/DOD Conference on Aging Aircraft, Palm Springs, CA.		