



# ASIP

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FINAL PROGRAM

THE AIRCRAFT STRUCTURAL INTEGRITY PROGRAM CONFERENCE

**DEC 2-4 2014**

HYATT REGENCY, SAN ANTONIO, TEXAS



THE AIRCRAFT STRUCTURAL  
INTEGRITY PROGRAM CONFERENCE

## WELCOME TO ASIP

The 2014 Aircraft Structural Integrity Program (ASIP) Conference is specifically designed to bring together the world leaders in the area of aircraft structural integrity and to disseminate information of state-of-the-art technologies for aircraft structures in both the military and civilian fleets. This is the 30th Anniversary of the ASIP Conference in its current format, although similar meetings occurred in the 1970s. This year also marks the 56th anniversary of the publication of the initial requirements for the US Air Force's Aircraft Structural Integrity Program.

ASIP 2014 will continue to provide a forum for the technical interchange of information between personnel responsible for structural integrity, including design, analysis, testing, manufacture, certification, non-destructive evaluation/inspection, maintenance, repair, safety, risk assessment and mitigation, durability and life management. This interchange helps provide the communication necessary to ensure that each community is aware of each other's capabilities and needs. The ASIP Conference has become even more important to the Air Force, Navy, Army, NASA and the FAA due to the constantly growing emphasis on sustaining the airworthiness of aging aircraft.

## ABOUT SAN ANTONIO

San Antonio has always been a crossroads for travelers, explorers, and those on a quest for liberty. Its sights, sounds, tastes and past captivate, while friendly people, the relaxing river, and a superb climate entice visitors to come back for more.

From its important role in Texas independence to its fusion of cultures, San Antonio is a truly unique and authentic destination. Explore the routes of the conquistadors, the settlements of the first missions, and the Shrine of Texas Liberty—the Alamo. San Antonio's heart is in its past—but its future is in its celebration of cultures.

## THE RIVERWALK

Millions of people visit the Riverwalk each year to enjoy this unusual urban sanctuary that winds along the San Antonio River in central San Antonio, one story below the bustling street level. Restaurants, galleries and shops line the banks of the downtown Riverwalk while the north and south banks of the River are less commercial.

San Antonio Text Provided by: [visitsanantonio.com](http://visitsanantonio.com)

## THE HYATT REGENCY

### Hotel Address:

The Hyatt Regency San Antonio Riverwalk  
123 Losoya Street  
San Antonio, Texas 78205

Tel: 210-222-1234

Experience the heart of the Riverwalk at Hyatt Regency San Antonio. We are the only San Antonio Riverwalk hotel directly overlooking the historic Alamo and on the Riverwalk, connecting two of San Antonio's top destinations through our 16 story atrium lobby. Be the center of our attention while you are in the center of the action by taking advantage of our unequaled location in the heart of dining and entertainment venues surrounding our Riverwalk hotel in San Antonio.



Photo of The Hyatt Regency Riverwalk San Antonio

## AIRPORT INFO

### Airport Address:

San Antonio International Airport (SAT)  
9800 Airport Blvd.  
San Antonio, TX 78216

### General Airport Information:

210-207-3411

[www.sanantonio.gov/aviation](http://www.sanantonio.gov/aviation)

## FREE WiFi

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# CONFERENCE MOBILE APP

## New! Conference Mobile App

**Attend the Meeting** is a new, free mobile application that also incorporates the SecureLead™ application. Attend the Meeting will include information such as the Conference program, agendas, exhibit hall information, and the Conference rooms map in a mobile format. Contained within the Attend the Meeting application is SecureLead™, which has been designed for users to scan QR Codes and capture participant contact data from Conference badges. Attend the Meeting is now available for iOS (iPhone, iPad and iPod) and Android devices.

### Shortcut Links for downloading and installation:

[www.AttendTheMeeting.com/apple](http://www.AttendTheMeeting.com/apple)

[www.AttendTheMeeting.com/android](http://www.AttendTheMeeting.com/android)



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PLEASE JOIN US  
**TUESDAY EVENING**  
FOR THE

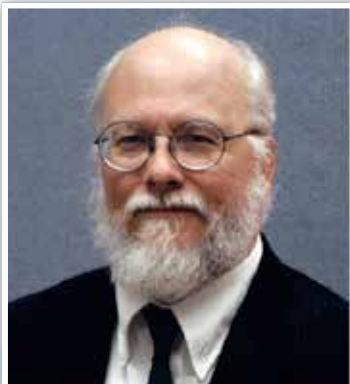
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**FROM 5-7 PM**

Stop by and receive your collectors edition ASIP 30th Anniversary Cup sponsored by Boeing.  
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## **Mr Larry Perkins, Retired, AFRL USAF** **Lincoln Award Winner**

Mr. Larry P. Perkins retired after nearly 30 years of service to the U.S. Air Force, most recently as the Chief Engineer for the Systems Support Division of the Air Force Research Laboratory's Materials & Manufacturing Directorate. In this capacity, he provided leadership and guidance on rapid reaction projects for multiple USAF and DoD customers seeking assistance on materials & processing issues. During the past three decades, he served as the senior materials & manufacturing advisor to the U.S. Air Force's Aircraft Structural Integrity Program.

Mr. Perkins began his career at U.S. Steel's Research Laboratory in Monroeville, PA, where he worked to improve the weldability of corrosion-resistant automotive and structural steels. Following this, Mr. Perkins worked for the U.S. Army's Materials & Mechanics Research Center in Watertown, MA. There he led the welding and casting technologies area supplying materials and manufacturing expertise to a number of ground and air vehicles including the M1 Main Battle Tank, Light Attack Vehicle, and the Apache and Blackhawk helicopters.

Mr. Perkins began his Air Force career as a liaison between Air Force Logistics Command and Air Force Systems Command in the Manufacturing Technology Division of the Air Force Materials Laboratory. He led efforts geared towards modernization of the Air Logistics Centers and provided technical support to maintenance and repair projects. Mr. Perkins' next assignment was as Structural Materials Evaluation Team Lead in the Systems Support Division where he provided critical materials & manufacturing technical assistance to every U.S. Air Force weapon system as well as to numerous Army, Navy, Coast Guard, and civil aerospace programs. These duties included supporting the TWA 800 and Columbia Space Shuttle accident investigations and other investigations conducted by the Air Force Safety Center, National Transportation Safety Board, Federal Aviation Administration, and several foreign governments. Mr. Perkins also served as Technical Advisor for the Metals, Ceramics, & Nondestructive Evaluation Division where he provided technical guidance to several applied research and advanced development programs.

With over 150 technical evaluations, specifications, and other publications to his credit, Mr. Perkins has often been called upon to serve as an expert witness in trials and court proceedings. He has also authored or served as principal reviewer of over 40 military and industry specifications and standards. His career-long accomplishments have resulted in multiple recognitions at the division, directorate, and laboratory levels including being recognized as an AFRL Fellow.

Mr. Perkins received a B.S. degree in Welding Engineering from The Ohio State University and an M.S. degree in Materials Science & Engineering from the University of Dayton.



## A Tribute to Chuck Tiffany - Tuesday Presentation

Tuesday's Group Luncheon will feature a Memorial Tribute to one of our industry's true visionaries, Dr. Charles Tiffany, who passed away recently. His legacy will be celebrated by showing the impact of his many years in the structural integrity field.



## Mr Jeffrey C. Allen, USAF - Wednesday Speaker

Jeffrey C. Allen, a member of the Senior Executive Service, is the Executive Director, Air Force Sustainment Center, Air Force Materiel Command, Tinker Air Force Base, Oklahoma. He is responsible for assisting the commander in providing operational planning and execution of Air Force Supply Chain Management and Depot Maintenance missions for a wide range of aircraft, engines, missiles and component items in support of AFMC missions. He assists in overseeing operations which span three air logistics complexes, three air base wings, two supply chain management wings and multiple remote locations that incorporate more than 32,000 military and civilian personnel. In addition, he helps ensure installation support to more than 75,000 personnel working in 140 associate units at the three AFSC bases.

Mr. Allen is a career logistician who has served in a wide range of positions during his tenure with the federal government. Prior to assuming his current assignment, Mr. Allen was the Director of Logistics, Installations and Mission Support, Headquarters Air Force Space Command, Peterson AFB, Colorado.



THE AIRCRAFT STRUCTURAL  
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## MONDAY, DECEMBER 1

4:30 PM –  
6:00 PM

**EARLY ONSITE REGISTRATION & CONFERENCE CHECK-IN**

## TUESDAY, DECEMBER 2

7:00 AM

**REGISTRATION/CONTINENTAL BREAKFAST**

8:00 AM

**WELCOME AND LINCOLN PRESENTATION AND AWARD**

8:00 AM

**Conference Welcome and Remarks**

*Mr James Rudd - Universal Technology Corporation*

8:15 AM

**Lincoln Award Presentation**

*Mr Larry Perkins - USAF AFRL (Retired)*

9:15 AM

**BREAK**

9:45 AM

**SESSION 1: OVERVIEWS I**

*Dr Lawrence Butkus - USAF AFRL*

9:45 AM

**Strategies for and the Importance of DaDT Analysis Validation at the System Level**

*Dr Dale Ball - Lockheed Martin Co*

10:15 AM

**T-38 Fuselage Teardown - Positive Payoff from a Class A Event**

*Mr Isaac Grothe - SwRI*

10:45 AM

**Integrated Technology Development Toward ASIP Corrosion Tools**

*Dr Douglas Dudis - USAF AFRL*

11:15 AM

**The F-16 Canopy Sill Longeron: Getting Control of a Multi-national Safety of Flight Issue**

*Mr Kevin Welch - Lockheed Martin Co*



**11:45 AM**      **GROUP LUNCHEON WITH LUNCHEON PRESENTATION**

**12:15 PM**      **A Tribute to Chuck Tiffany**  
*Mr Chuck Babish - USAF AFMC*

**1:30 PM**      **SESSION 2: CHARACTERIZATION, MODELING & TESTING I**  
*Dr Pamela Kobryn - USAF AFRL*

**1:30 PM**      **Concept of Operations for Corrosion Environment Sensors (aka Corrosion Sensors)**  
*Dr Eric Lindgren - USAF AFRL*

**2:00 PM**      **Weibull Analysis of Fatigue Data from Aircraft Paint Removal Techniques - Lessons Learned**  
*Dr Paul Clark - SwRI*

**2:30 PM**      **Loads Environment Spectra Survey (L/ESS) USCG HC-144A**  
*Mr Patrick Dwyer - Technical Data Analysis Inc*

**3:00 PM**      **BREAK**

**3:30 PM**      **SESSION 3: STRUCTURAL HEALTH MONITORING**  
*Dr Kenneth Griffin - SwRI*

**3:30 PM**      **The Environmental Severity Index and Its Applications**  
*Mr William Abbott - Battelle*

**4:00 PM**      **Embedded Structural Health Monitoring System Development and Testing for Fatigue Crack Detection of Rotorcraft Structures**  
*Mr Jeffrey Bergman - Acellent Technology Inc*

**4:30 PM**      **Quantification of Structural Health Monitoring for Damage Detection**  
*Dr Fotis Kopsaftopoulos - Stanford University*

**5:00 PM**      **POSTER PRESENTATIONS IN EXHIBIT HALL**

**5:00 PM – 7:00 PM**      **SPONSORED EXHIBITOR RECEPTION PRESENTED BY:**





## WEDNESDAY, DECEMBER 3

- 7:00 AM**      **REGISTRATION/CONTINENTAL BREAKFAST**
- 8:00 AM**      **SESSION 4: CHARACTERIZATION, MODELING & TESTING II**  
*Dr Gregory Schoeppner - USAF AFLCMC*
- 8:00 AM**      **F-16 Block 15 Wing Damage Enhancement Test**  
*Mr Marinus Bos - National Aerospace Laboratory NLR*
- 8:30 AM**      **F-16 Block 15 Wing Crack Growth Analysis of Lead Crack Wing Damage Enhancement Test**  
*Mr Frank Grooteman - National Aerospace Laboratory NLR*
- 9:00 AM**      **Simulation of Crack Growth at Cold Worked Holes**  
*Mr Matthew Watkins - Engineering Software Research & Development Inc*
- 9:30 AM**      **BREAK**
- 10:00 AM**      **SESSION 5: OVERVIEWS II**  
*Mr Robert Norcross - USAF HQ ACC*
- 10:00 AM**      **Overview of the Full Scale Durability Tests on F-35 Lightning II Program**  
*Ms Marguerite Christian - Lockheed Martin Co*
- 10:30 AM**      **Importance of Corrosion Prevention Control Plans and Corrosion Prevention Advisory Boards**  
*Mr Terry Gabbert - USAF AFRL*
- 11:00 AM**      **KC-135 DaDT and IATP Toolset Modernization**  
*Mr Lee Zambino - The Boeing Co*
- 11:30 AM**      **Durability Assessment for Non-Legacy Manufacturing Methods**  
*Mr Scott Carlson - SwRI*

**12:00 PM**      **GROUP LUNCHEON WITH LUNCHEON SPEAKER**

12:00 PM      **Luncheon Presentation**  
*Mr Jeffery Allen - USAF*

**1:45 PM**      **SESSION 6: NONDESTRUCTIVE INSPECTION/EVALUATION**  
*Mr David Wilkinson - USAF AFLCMC*

1:45 PM      **Overview of Validation Program of Eddy Current Based Sensor Technologies for the Inspection of Fastener Site Fatigue Cracking in Multi-Layer Metallic Structures**  
*Mr Gary Steffes - USAF AFRL*

2:15 PM      **Quality Assurance and Nondestructive Inspection in Support of Engineered Residual Stresses**  
*Mr Carl Magnuson - Texas Research Institute Austin Inc*

2:45 PM      **Evaluation of NDE Methods as Applied to Metallic Honeycomb Structures**  
*Mr Nathan Smith - The Boeing Co*

**3:15 PM**      **BREAK**

**3:45 PM**      **SESSION 7: CHARACTERIZATION, MODELING & TESTING III**  
*Mr Ko-Wei Liu - The Boeing Co*

3:45 PM      **Integration of Incremental Crack Front Evolution into the Structural Integrity Process: Examples, Experimental Comparisons, and Lessons Learned**  
*Mr Joshua Hodges - USAF*

4:15 PM      **Models for Corner and Through Cracks in Support of Beta Curve Development for the P-8A Poseidon Full Scale Fatigue Testing**  
*Mr Jason Hawks - ESRD Inc*

4:45 PM      **Automatic Stress Intensity Factor Calculation based on the Elastic Energy Release Rate Method Coupled with the NASTRAN FEM Solver**  
*Mr Thierry Stehlin - RUAG Aviation*



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# THURSDAY, DECEMBER 4

**7:00 AM**      **REGISTRATION/CONTINENTAL BREAKFAST**

**8:00 AM**      **SESSION 8: OVERVIEWS III**

*Mr Robert Burt - Lockheed Martin Co*

**8:00 AM**      **Structural Component Corrosion Simulation - Test Program Update**

*Mr Steven Thompson - USAF AFRL*

**8:30 AM**      **Non-Chrome OML System Transition Effort**

*Mr Michael Spicer - USAF AFRL*

**9:00 AM**      **Investigation of C-5 Honeycomb Floor Panel Dent Limits**

*Mr Chad deMontfort - Mercer Engineering & Research Ctr*

**9:30 AM**      **BREAK**

**10:00 AM**      **SESSION 9: PROGNOSTICS & RISK ANALYSIS**

*Dr Michael Gorelik - FAA*

**10:00 AM**      **Instantaneous Monte Carlo Calculation of Single Flight Probability of Failure**

*Dr Thomas Brussat - Tom Brussat Engineering LLC*

**10:30 AM**      **The F-16 Canopy Sill Longeron: Using Risk Analysis to Ensure Continued Structural Safety**

*Mr Kevin Welch - Lockheed Martin Co*

**11:00 AM**      **F-35A MLG Drag Brace Risk Analysis**

*Mr John McClure - USAF F-35 Joint Program Office*

11:30 AM **OPEN LUNCH**

1:30 PM **SESSION 10: LIFE ENHANCEMENT/REPAIR/REPLACEMENT CONCEPTS**

*Mr Daniel Bowman - UDRI*

1:30 PM **Enabling High-Quality and Efficient Engineering Decisions with 3-D Visualization of Maintenance Data**

*Mr Hazen Sedgwick - USAF AFLCMC*

2:00 PM **Friction Plug Welding of 2024-T3 Aluminum**

*Mr Michael Lange - Mercer Engineering Research Ctr*

2:30 PM **Fighter Jet Wing Repair and Refurbishment**

*Mr Christopher Garville - Merex Aircraft Co Inc*

3:00 PM **BREAK**

3:30 PM **SESSION 11: CHARACTERIZATION, MODELING & TESTING IV**

*Dr Dale Ball - Lockheed Martin Co*

3:30 PM **Titanium 6Al-4V Durability Method Development and Test Verification Results**

*Dr Ji Park - Lockheed Martin Co*

4:00 PM **Determination of Flight Loads for the HH-60G Pave Hawk Helicopter**

*Dr Robert McGinty - Mercer Engineering Research Ctr*

4:30 PM **Predicting Fatigue Crack Growth in Forgings with Bulk Residual Stress**

*Dr Robert McClung - SwRI*

5:00 PM **CONFERENCE ADJOURNS**



## 2014 EXHIBITORS



**ASIP WOULD LIKE TO THANK ALL OF  
OUR EXHIBITORS!**

IF YOUR COMPANY IS INTERESTED IN EXHIBITING  
OR SPONSORING AT THE ASIP CONFERENCE, PLEASE  
VISIT US AT THE REGISTRATION DESK.

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**Triumph Aerostructures -  
Vought Aircraft Division**

*A Triumph Group Company*

## 2014 POSTER SESSION

**POSTER SESSION 2014: LOCATED IN THE EXHIBIT HALL**

**Investigation of the Transport Helicopter Harsh Landing Test Results**

*Mr Marcin Kurdelski - Air Force Institute of Technology Poland*

**Thickness and Property Measurement of Each Layer in Multi-Layer Structures**

*Mr Russell Austin - TRI/Austin Inc*

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Thank you for attending the 2014 ASIP Conference, your participation is greatly valued and appreciated.

Please visit our website for the 2014 Conference Proceedings plus proceedings from previous years.

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