

AHS HRC International Technical Specialists' Meeting on Rotorcraft Structures and Survivability 2013

**Williamsburg, Virginia, USA
29 - 31 October 2013**

ISBN: 978-1-63266-283-5

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Red Hook, NY 12571



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at the address below.

American Helicopter Society International
217 N. Washington Street
Alexandria, VA 22314-2538

Phone (703) 684-6777
Fax: (703) 739-9279

staff@vtol.org

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The Hampton Roads Chapter (HRC) of the
American Helicopter Society (AHS) International
Presents the

**Technical Specialists' Meeting on
Rotorcraft Structures and Survivability**

Structures Solutions for Future Vertical Lift

October 29-31, 2013

Ft. Magruder Hotel and Conference Center
Williamsburg, Virginia

General Chairman

Mr. Jon Schuck, US Army ADD

Technical Chairpersons

Dr. Mark E. Robeson, US Army ADD-AATD

Mr. Nate Bordick, US Army ADD-AATD

Dr. Karen E. Jackson, NASA Langley Research Center

TUESDAY, OCTOBER 29, 2013

8:00 – 12:00 PM Session A:

Structural Integrity and Structural Health Monitoring (SHM)

Moderator – Bordick, US Army ADD-AATD

8:00 – 8:30 AM "[Progress and Planning for US Army Rotorcraft Structural Integrity Program Standardization](#)," Robeson, US Army ADD-AATD

8:30 – 9:00 AM "[SHM of Joints in Composite Laminate Structures](#)," Lissenden, Penn State University

9:00 – 9:30 AM "[Design, Analysis, and Characterization of a PMN-PT Single Crystal Energy Harvester for Rotorcraft Wireless Sensor Applications](#)," Wozniak, Penn State

9:30 – 10:00 AM "[Development of an Airframe Structural Integrity Management System](#)," Brookhart, Sikorsky

10:00 – 10:30 AM Break

10:30 – 11:00 AM "[Flight Severity Calculation for HH-60G Airframe Structure](#)," Wood, Mercer Engineering Res. Center

11:00 – 11:30 AM "[SHM-embedded Design for High Performance, Sustainable, and CBM-Enabling Structures of Future Vertical Lift](#)," Chang, Stanford University

11:30 – 12:00 PM "[The State of the Art and the Art of the Possible Using X-Ray Diffraction Residual Stress Measurement Technologies in Aerospace](#)," Cuccia, Proto Manufacturing Inc.

12:00 – 1:30 PM Luncheon Keynote:

David Friedmann, AATD

Joint Multi Role Technology Demonstration

1:30 – 5:00 PM Session B:

Durability and Damage Tolerance

Moderator - Robeson, US Army ADD-AATD

1:30 – 2:00 PM "[Simulation of Detecting Damage in Composite Stiffened Panel Using Lamb Waves](#)," Wang, NASA Langley Research Center

2:00 – 2:30 PM "[Analysis of Hydrodynamic Ram Compliant Structure](#)," Gatley, Boeing

2:30 – 3:00 PM "[Integrated Test/Modeling Analysis of Bonded Joints in Rotorcraft Composite Structures](#)," Gurvich, United Technologies Research Center

3:00 – 3:30 PM Break

3:30 – 4:00 PM "[Assessing Rotorcraft Airframe Durability & Damage Tolerance](#)," Sarlashkar, Sikorsky

4:00 – 4:30 PM "[Full-Field Strain Analysis of Compressively Loaded Flat Composite Laminates Containing Undulated Fiber Architecture](#)," Henry, Penn State

4:30 – 5:00 PM "[Laser Peening for Improved Fatigue Lifetime of a Wing Attachment Shear-Tie – Application to Rotorcraft Structures](#)," Hackel, Metal Improvement Co.

WEDNESDAY, October 30, 2013

8:00 – 11:30 PM Session C:

Ongoing/Future Programs and Structures Technology

Moderator – Jackson, NASA

8:00 – 8:30 AM "[An Introduction to the Combat Tempered Platform Demonstration](#)," Cappelli, Sikorsky Aircraft
8:30 – 9:00 AM "[NASA's Advanced Composites Project](#)," Young, NASA Langley Research Center
9:00 – 9:30 AM "[Composite Certification Initiative](#)," Schuck, US Army ADD

9:30 – 10:00 AM Break

10:00 – 10:30 AM "[Hybrid Matrix Composites for Aircraft Structures](#)," Caputo, Materials Research and Design
10:30 – 11:00 AM "[Damage Tolerance Stretched Broken Carbon Fiber](#)," Crocco, US Army ADD-AATD
11:00 – 11:30 AM "[Predictive Analysis of Aircraft Structures](#)," Erickson, Third Wave Systems

11:30 – 1:30 PM Lunch

1:30–5:30 PM

**Session D: Crashworthiness
Moderator – Charles Clarke, Sikorsky**

1:30 – 2:00 PM "[Evaluation of the Transport Rotorcraft Airframe Crash Testbed \(TRACT\) Full Scale Crash Test](#)," Annett, NASA Langley
2:00 – 2:30 PM "[H-46 Airframe Crash Test \(TRACT\)](#)," Bark, NAVAIR
2:30 – 3:00 PM "[Active Crash Protection System \(ACPS\)](#)," Bolukbasi, The Boeing Company
3:00 – 3:30 PM "[Investigation of Human Kinematics and Risk of Injury during a Vertical Crash using THOR Dummy and Human Finite Element Models](#)," Untaroiu, VA Tech
3:30 – 4:00 PM "[Biodynamic Model Development for Intense Shocks](#)," Singh, University of Maryland

4:00 – 4:30 PM Break

4:30 – 4:50 PM "[Impact Testing and Simulation of Composite Airframe Components](#)," Jackson, Littell, and Fasanella, NASA Langley Research Center
4:50 – 5:10 PM "[Impact Testing and Simulation of a Full-Scale Composite Subfloor Section](#)," Seal, Fasanella, Littell, and Jackson, Analytical Mechanics Associates, Inc.
5:10 – 5:30 PM "[Impact Testing and Simulation of a Full-Scale Composite Fuselage Section](#)," Fasanella, Jackson, Littell, and Seal, National Institute of Aerospace

THURSDAY, October 31, 2013

**8:00 – 12:00 PM Session E:
Crashworthiness and Vulnerability Reduction
Moderator – Bark, NAVAIR**

8:00 – 8:30 AM "[Predicted Performance of an Optimized Energy-Absorbing Crashworthy Seat During Idealized and Actual Crash Pulses](#)," Richards, BAE Systems
8:30 – 9:00 AM "[Side-Facing Seat Injury Criteria and Testing Methodology Development](#)," Richards, BAE Systems
9:00 – 9:30 AM "[Aircraft Seat Certification by Analysis from a Regulatory Perspective](#)," Pelletiere, FAA
9:30 – 10:00 AM "[Appropriate Dynamic Test of Seat 7YH2VHcb in Rotorcraft](#)," Miles, FAA

10:00 – 10:30 AM Break

10:30 – 11:00 AM "[Variable Profile Energy Absorbers](#)," Labun, SAFE, Inc.
11:00 – 11:30 AM "[Development of Ballistic Tolerant Aircraft Structure](#)," McCarthy, The Boeing Company
11:30 – 12:00 PM "[Blast Analysis of Aircraft Structure](#)," Chiu, The Boeing Company