

UPCOMING EVENTS

AHS International hosts and co-sponsors events around the globe to facilitate the advancement of vertical flight technology.

Visit the **AHS Events** page for more details at www.vtol.org/events

6th Asian-Australian Rotorcraft Forum Heli-Japan

November 7 – 9, 2017
Japan

AHS Aeromechanics Design for Transformative Vertical Flight Technical Meeting

January 16 – 19, 2018
San Francisco, California, USA

AHS Airworthiness, CBM & HUMS Technical Meeting

February 20 – 22, 2018
Huntsville, Alabama, USA

AHS International Forum 74

May 14 – 17, 2018
Phoenix, Arizona, USA



AHS INTERNATIONAL

HAMPTON ROADS CHAPTER SOUTHEAST REGION



Rotorcraft Structures and Survivability Technical Meeting

***“Innovative Structures and
Survivability Solutions for
Vertical Lift”***

**October 24 – 26, 2017
Hampton Roads Convention Center
Hampton, Virginia**

GENERAL INFORMATION

The AHS Hampton Roads Chapter, Southeast Region, and AHS International are sponsoring this technical meeting highlighting research and development, both current and planned, related to manned and unmanned rotorcraft structures, crash safety and vulnerability reduction.

The displays, as well as all presentations, will take place at the Hampton Roads Convention Center in Conference Rooms A-C.

The Tuesday evening social reception/dinner will take place at the Virginia Air & Space Museum at 600 Settlers Landing Rd, Hampton, VA 23669.

REGISTRATION DESK HOURS

Main Lobby outside Conference Rooms A-C

Tuesday, October 24, 2017
6:45 AM - 4:30 PM
Wednesday, October 25, 2017
7:00 AM - 4:00 PM
Thursday, October 26, 2017
7:00 AM - 10:00 AM

PRESENTATIONS & EXHIBIT HOURS

Conference Rooms A-C

Tuesday, October 24, 2017
8:00 AM - 5:00 PM
Wednesday, October 25, 2017
8:00 AM - 5:00 PM
Thursday, October 26, 2017
8:00 AM - 12:00 PM

COMMUNICATIONS

Complimentary Wi-Fi is provided in the main lobby of the Hampton Roads Convention Center.

CITY OF HAMPTON INFORMATION

A City of Hampton desk with maps and local restaurant information will be located in the main lobby area of the Hampton Convention Center.

EXHIBITORS/SPONSORS

Conference Rooms A-C

Active VTOL Crash Prevention Ltd.

Calspan Corporation
<http://www.calspan.com/>

East West Industries
<http://www.eastwestindustries.com/>

MEETING STAFF

General Meeting Chair
Susan Gorton, NASA Langley

Technical Meeting Chairs
Nate Bordick, US Army ADD
Dr. Karen Jackson, NASA Langley
Dr. Mark Robeson, US Army ADD

Exhibits Chairman
David Meyer, Boeing Co.

Administrative Chairman
Dr. Ferdinand Grosveld, Northrop Grumman

AHS Meeting & Registration Support
Julie M. Gibbs, AHS International

AHS Hampton Roads Chapter President
Clement Ng, US Army ADD

AHS Southeast US Regional V.P.
Daniel Wolfe, Universal Solutions Int'l Inc.

AHS Southeast US Regional Director
Bruce Tenney, Karem Aircraft



**The Vertical Flight
Technical Society**

THURSDAY, OCTOBER 26, 2017
CONFERENCE ROOMS A-C

7:00 AM – 10:00 AM Registration
(Outside Conference Room)

7:00 AM – 7:45 AM **COFFEE**
(Outside Conference Room)

STRUCTURES SESSION II

Session Chair: Mark Robeson, US Army ADD

7:45 – 8:00 AM Welcome/Announcements

8:00 – 8:30 AM *Automating Structural Analysis
On the DARPA VTOL X-Plane*
Adam Nadel, Aurora Flight Sciences

8:30 – 9:00 AM *Combat Tempered Damage
Tolerant Airframe*
Jonathan Garhart, Sikorsky Aircraft

9:00 – 9:30 AM *Combat Tempered Aft Fuselage
Technology*
Lisa M. Chiu, Boeing Co.

9:30 – 10:00 AM **COFFEE BREAK**
(Outside Conference Room)

10:00 – 10:30 AM *Composite Structure Compression
Molding for V-22 Osprey*
D. DeWayne Howell, TenCate Adv. Composites

10:30 – 11:00 AM *In Situ Thermoplastic Highly
Survivable Ballistic Tolerant Composite
Drive Shaft Development and
Test Validation for Helicopter Applications*
Harry R. Lutzetsky, Survice Engineering Co.

11:00 AM – 11:30 AM *On Rotorcraft Structural Integrity
Program Data Requirement Worldviews
and Acquisition Strategies for Rotorcraft*
Robert E. Benton, Jr., US Army AED

Thank you to our Exhibitors & Sponsors
East West Industries



TUESDAY AM, OCTOBER 24, 2017
CONFERENCE ROOMS A-C

6:45 AM – 4:30 PM Registration Desk Open
(Outside Conference Room)

7:00 AM – 7:45 AM **COFFEE**
(Outside Conference Room)

CRASHWORTHINESS SESSION I

Session Chair: Lindley Bark, NAVAIR

7:45 – 8:00 AM Welcome/Announcements

8:00 – 8:30 AM *A Summary of Results from Two
Full-Scale Fokker F-28 Vertical Drop Tests*
Justin Littell, NASA Langley

8:30 – 9:00 AM *Anthropomorphic Test Device
Response to Vertical Impact*
Joseph Pelletiere, FAA

9:00 – 9:30 AM *Finite Element Model Development
and Test Analysis Correlation for
Two F-28 Fuselage Section Drop Tests*
Martin S. Annett, NASA Langley

9:30 – 10:00 AM **COFFEE BREAK**
(Outside Conference Room)

10:00 – 10:30 AM *Part 1: Combat Tempered Platform
Demonstration Crashworthiness Advancements*
Charles W. Clark, Sikorsky Aircraft

10:30 – 11:00 AM *Part 2: Combat Tempered Platform
Demonstration Crashworthiness Advancements*
Charles W. Clark, Sikorsky Aircraft

11:00 – 11:30 AM **Keynote Presentation:**
***Advances in Rotorcraft Crashworthiness – Trends
Leading to Improved Survivability***
(2017 Nikolsky Lecture)
Dr. Karen E. Jackson, NASA Langley

11:30 AM – 1:30 PM **LUNCH ON YOUR OWN**

TUESDAY PM, OCTOBER 24, 2017
CONFERENCE ROOMS A-C

CRASHWORTHINESS SESSION II

**Session Chair: Dr. Karen Jackson, NASA
Langley**

1:30 – 2:00 PM *Accurate and Reliable Prediction of
Water Landing of Aerospace Structure for
Making Practical Design Impact*
Dhiren Marjadi, Altair Engineering

2:00 – 2:30 PM *Biodynamic Analysis of*

Adaptive Magnetorheological Energy Absorber to Minimize Crash Effects
Caitlin King, University of Maryland

2:30 – 3:00 PM *Comparison of UH-60A/L Crashworthy Crew Seat Dynamic Test Lumbar Loads, Occupant Injury Rates, and Lumbar Load Criterion*
Marvin K. Richards, BAE Systems

3:00 – 3:30 PM **REFRESHMENT BREAK**
(Outside Conference Room)

3:30 – 4:00 PM *A Preliminary Study of Helicopter Crashworthy Stages Adapted to Different Impact Conditions*
Paolo Astori, Politecnico di Milano

4:00 – 4:30 PM *Load Limiting Structural Elements with Active Load Control*
Akif Bolukbasi, Boeing Co.

4:30 – 5:00 PM *Hydrodynamic Ram Compliant and Self-Sealing Fuel Cell Structures*
Dennis K. McCarthy, Boeing Co.

6:00 – 9:00 PM **RECEPTION & DINNER**
Virginia Air & Space Center

WEDNESDAY AM, OCTOBER 25, 2017
CONFERENCE ROOMS A-C

7:00 AM – 4:00 PM Registration
(Outside Conference Room)

7:00 – 7:45 AM **COFFEE**
(Outside Conference Room)

VULNERABILITY REDUCTION SESSION
Session Chair: Ken Branham, Joint Aircraft Survivability Program Office

7:45 – 8:00AM Welcome/Announcements

8:00 – 8:30 AM *Improving Aircraft Force Protection Using Composite Metal Foams*
Afsaneh Rabiei, North Carolina State University

8:30 – 9:00 AM *Experimental and Computational Simulation of Bird Impacts on Flat and Sharp Objects*
J. Michael Pereira, NASA Glenn

9:00 – 9:30 AM *Flaw Tolerant Safe Life Qualification of a Composite Tailboom*
Robert Wardlaw, Bell Helicopter

9:30 – 10:00 AM **COFFEE BREAK**
(Outside Conference Room)

10:00 – 10:30 AM *Shockwave Tolerance of Small of Small-Volume Composite Rotorcraft Structure*

Lisa M. Chiu, Boeing Co.

10:30 – 11:00 AM *Exploration of Damage Tolerance Robustness in Design of Composites via Full-Scale Testing of a UH-60 Stabilator*
Preston Bates, Sikorsky Aircraft

11:00 – 11:30 AM *Composite Drive Element Testing in a Novel Hybrid Drive Rig*
Chuck Ruggeri, NASA Glenn

11:30 AM – 1:30 PM **LUNCH ON YOUR OWN**

WEDNESDAY PM, OCTOBER 25, 2017
CONFERENCE ROOMS A-C

STRUCTURES SESSION I
Session Chair: Nate Bordick, US Army ADD

1:30 – 2:00 PM *Aircraft Component Remaining Useful Life Evaluator (ACRULE)*
Paul Fithian, Mercer Engineering Research Center

2:00 – 2:30 PM *Integrated Structural Methods for Rotorcraft Composites*
Andrew Makeev, University of Texas Arlington

2:30 – 3:00 PM *Reducing Inspection and Repair Burden for Composite Airframe Structures*
Matthew Harrigan, Sikorsky Aircraft

3:00 – 3:30 PM **REFRESHMENT BREAK**
(Outside Conference Room)

3:30 – 4:00 PM *Fatigue Risk Management for Rotorcraft Fail-Safe Structures*
Michael Shiao, US Army ARL VTD

4:00 – 4:30 PM *Multifunctional Structural Composite with Integrated electromagnetic Shielding*
Harry R. Lutzetsky, Survice Engineering Co.

4:30 – 5:00 PM *Fatigue Crack Growth from Aluminum Machining Using Low-distortion Techniques*
Peter J. Matthews, US Army ADD

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and
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