

# **73rd American Helicopter Society International Annual Forum Special Sessions 2017**

Fort Worth, Texas, USA  
8 - 11 May 2017

ISBN: 978-1-5108-4407-0

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2017) by American Helicopter Society International  
All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact American Helicopter Society International  
at the address below.

American Helicopter Society International  
2701 Prosperity Ave, Suite 210  
Fairfax, VA 22031

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

[staff@vtol.org](mailto:staff@vtol.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## NAVY PEO BRIEFINGS

<b>Program Executive Office Air ASW, Assault &amp; Special Mission Programs</b> .....	1
<i>D. Peters</i>	

## GENERAL SESSION BRIEFINGS

<b>CEO Panel @ AHS Forum</b> .....	18
<i>J.B. Dumont</i>	
<b>Bell Helicopter - A Textron Company</b> .....	21
<i>M. Thacker</i>	
<b>Boeing Military Aircraft - Vertical Lift Products</b> .....	25
<i>N/A</i>	
<b>AHS Straight Talk from the Top: CEO Panel</b> .....	26
<i>D. Romiti, R. Garavaglia</i>	
<b>AHS Forum 73 CEO Panel Discussion: SIKORSKY</b> .....	30
<i>M. Miller</i>	
<b>MD Helicopters' Technology &amp; Development Programs 2017- 2020</b> .....	35
<i>N/A</i>	
<b>Advances in Rotorcraft Crashworthiness - Trends Leading to Improved Survivability</b> .....	40
<i>K.E. Jackson</i>	

## ARMY PEO BRIEFINGS

<b>Program Executive Office Aviation Overviews</b> .....	80
<i>N/A</i>	
<b>AHS Forum 73</b> .....	89
<i>T. Neupert</i>	
<b>Apache Update AHS</b> .....	96
<i>A. McClendon</i>	
<b>PM UAS</b> .....	102
<i>D. Sparks</i>	
<b>H-60 Black Hawk Update</b> .....	107
<i>T.S. Sinclair</i>	
<b>PM Aviation Systems</b> .....	113
<i>N/A</i>	
<b>Improved Turbine Engine/Future Vertical Lift (ITE/FVL) Project Office Update</b> .....	117
<i>B. Sheibley</i>	
<b>US Army Aviation Program Manager Briefings</b> .....	123
<i>L. Ericsson, T. Neupert, A. McClendon, T. Sinclair, D. Sparks, A. Medellin, B. Sheibley</i>	

## VTOL PRIZES

<b>AHS Igor I Sikorsky Human Powered Helicopter Competition: History and Lesson Learned</b> .....	124
<i>B.R. Hein</i>	
<b>AHS International's Igor I. Sikorsky: 24 Hour Hover Challenge</b> .....	137
<i>M. Strauss</i>	
<b>AHS Student Design Competition</b> .....	147
<i>R. Singh</i>	
<b>Join us in making the impossible, possible. Go Fly Prize</b> .....	155
<i>N/A</i>	
<b>Pixelmonger Studios: Drone War 1</b> .....	172
<i>N/A</i>	

**ADVANCED AIR VEHICLE DESIGN**

**XV-24A LightningStrike: "A New Species in the Taxonomy of Vertical Flight"** ..... 178  
*C.G. Schaefer*

**NATO Industry Advisory Group (NIAG): Next Generation Rotorcraft Capability (NGRC) Study Group**..... 188  
*D. Newman*

**TRANSFORMATIVE URBAN MOBILITY**

**On-Demand Aviation**..... 192  
*M. Moore*

**VAHANA: Why is A<sup>3</sup> Here**..... 198  
*N/A*

**Bell Helicopter: A Textron Company** ..... 206  
*S. Drennan*

**XTI Aircraft: This Changes Everything**..... 210  
*Robert LaBelle*

**NASA: Overviews/Objectives** ..... 217  
*C. Theodore*

**NASA: On-Demand Mobility (ODM) Overview - Transformative Vertical Flight for Urban Mobility Panel** ..... 225  
*K. Goodrich*

**Transformation of UAS Technology: Enabling Transformative Transportation Concepts**..... 236  
*W. Ryan*

**LATE TECHNICAL PAPERS**

**Advances and Applications in Comprehensive Gearbox Aero-Thermodynamics and Tribology Simulation** ..... 242  
*S. McIntyre, R. Kunz*

**TH-1H Finite Element Model Validation and Flight Loads Development**..... 262  
*J. Brenna, R. McGinty, N. Hatcher, M.W. Schleider, G.T. Wood*

**Pilot Evaluation of a Real-Time Free Wake Model in a Navy Rotorcraft Fleet Trainer** ..... 268  
*J.D. Keller, D.A. Wachspress, J.C. Hoffler*

**Author Index**