

AHS International 71st Annual Awards

By Kay Brackins, AHS Deputy Director

AHS International – *The Vertical Flight Technical Society*, honored members and vertical flight leaders for their outstanding achievements during the Grand Awards Banquet on May 6, 2015 in Virginia Beach, Virginia. The Awards Banquet was one of the highlights of the 71st Annual Forum & Technology Display. Mike Hirschberg, Executive Director, AHS International welcomed attendees and thanked The Boeing Company for sponsoring the VFF Reception and Awards Banquet this year. Hirschberg also thanked all of the AHS volunteers who support the Annual Forum, including the authors, technical committees, session chairs and chapter members, plus 85 student volunteers.

AHS Membership Awards

Mike Hirschberg announced the winners of the AHS International Membership Awards. The winner of the **AHS Individual Member Sponsor** contest for this year was **Steven I. Glusman**, The Boeing Company and AHS Philadelphia Chapter member, who recruited 8 members during the year. The **Montréal-Ottawa Chapter** won the contest for the **AHS Chapter Increase**, with the largest net growth in members, adding 108 new members during the year. Michael Nault and Michel Dion, Bell Helicopter Canada, accepted the award for the chapter. The winner of the **AHS Chapter Percentage Increase** contest was the **Germany Chapter**, with a 30% increase in its membership. Dr. Jürgen Rauleder, from the Technische Universität München, accepted the award. The **Philadelphia Chapter**, represented by Steve Glusman, The Boeing Company, won the **Every-Member-Get-a-Member** contest; eighteen members of the chapter sponsored at least one new member.



Left to Right: Michael Nault and Michel Dion, AHS Chapter Increase; Dr. Jürgen Rauleder, AHS Chapter Percentage Increase; Steve Glusman, AHS Individual Member Sponsor plus Every-Member-Get-a-Member; and Mike Hirschberg.

AHS Technical Awards



The AHS International Technical Director, Dr. David Peters (left), McDonnell Douglas Professor of Engineering at Washington University in St. Louis, presented the Society's technical awards.

The Forum Technical Chair this year was Madame Blanche Demaret (below) of *Office National d'Etudes et Recherches Aéronautiques* (ONERA), the French national



aerospace research center. Being a Forum Technical Chair takes a lot of dedication, and Demaret was no exception. She devoted a tremendous amount of time and effort over the past year to make Forum 71 the great success that it was. Demaret worked with AHS headquarters, the 21 technical committees, and hundreds of authors to create the great technical program that is the hallmark of an AHS Forum. She also found innovative ways to handle the increasing number of papers submitted. Demaret received a tremendous round of applause for her outstanding efforts!

Robert L. Lichten Award

The Robert L. Lichten Award is given to the best new author of a technical paper presented at a chapter meeting during the preceding calendar year, based upon the author's personal contribution, originality of the work, and technical content. The winner this year was Isaac Bandy, MTS Systems



Left: Isaac Bandy, winner of the Lichten Competition and David Peters. Right: David Coleman, Lichten Runner-Up and David Peters.

Corporation, with his paper titled "Health Management Technology Integration and Verification," which was presented in the HUMS-CBM Session. David Coleman, Texas A&M University, was recognized as the Lichten Award Runner-Up with his paper, "Design, Development and Flight-Testing of a Sub-100 Gram Robotic Hummingbird," which was presented in the Advanced Vertical Flight Session.

Vertical Flight Foundation Scholarships

Mike Hirschberg noted that this past year has been an exceptional one with respect to donations received by the Vertical Flight Foundation Scholarship Fund. The total amount of dollars that became available for this year's scholarships – \$68,000 – is \$23,000 more than last year and more than double the awards from just five years ago. This was achieved due to generous donations from AHS members.

During the period of March 2014 to February 2015 (the contributions that went to this year's scholarship winners) VFF had 27 donors giving between \$100 and \$175, 12 giving between \$200 and \$500, and 7 contributing \$1000 or more, including Paul Balfe, Dr. Albert Brand, retired general William "Bud" Forster, Mick Maurer, The Frank N. Piasecki Foundation, Robinson Helicopter, and Sagem Avionics. Several of these donations were made in memory of stalwarts of the vertical flight technical community who recently passed away, such as Hal Andrews, Charlie Crawford, George Powell, Ray Prouty, John Slattery and John Zuk.

In addition, the AHS Stratford Chapter has for many years been making substantial contributions to the VFF Scholarship Fund. Last year they donated \$10,000 for this year's winners and at the Forum, the chapter donated \$12,000. Since 2007, the chapter has donated a total of more than \$70,000, primarily from the proceeds of their annual golf tournament. Marianne Davenport is the chapter officer in charge of organizing the fundraiser. She could not attend the Forum to be recognized for her efforts, so Dr. Maryam Khoshlahjeh, the Membership Chair of the AHS Stratford Chapter, accepted the recognition of her behalf.

Hirschberg gave a huge "thank you" to those who have made donations to VFF over the past year and asked every member to please consider making a

donation. The Society would like to continue to increase the size and number of VFF awards in the future. AHS covers all administrative costs for VFF, so 100% of donations goes towards scholarships.

Dr. Catherine Ferrie Kilmain, Bell Helicopter's Executive Vice President of Engineering, gave remarks on behalf of John Garrison, the Chair of the Vertical Flight Foundation and Bell Helicopter CEO. She announced a \$200,000 donation from Bell Helicopter, which will provide a \$5,000 Bell Helicopter Vertical Flight Scholarship each year in perpetuity.

In addition, Kilmain announced the establishment of a new scholarship that will be offered starting next year in honor of Tom Wood's 50th Year of Service at Bell Helicopter – the Tom Wood Honorary Scholarship. Wood is Bell Helicopter's Chief Technologist and advises

executive and program leaders on the technical integrity for all of Bell Helicopter's products. The scholarship was started by a \$5,000 personal donation made by his colleague, Al Brand, which was matched by Bell Helicopter's parent company, Textron. In addition, dozens of AHS members at Bell as well as across the vertical flight community have made personal donations – more than \$10,000 was raised in just two months. With these additional amounts, along with the company match, AHS anticipates raising \$20,000 this year that will fund annual Tom Wood Honorary Scholarships to be awarded for the next few years. This new scholarship is a fitting honor to Tom's lifetime of service in the interest of vertical flight and will provide financial support to the next generation of select students who pursue an education in vertical flight technology.

Dr. Dave Peters then thanked the VFF Scholarship Selection



Top Left: Dr. Maryam Khoshlahjeh accepting a certificate of recognition for Marianne Davenport. Top Right: Dr. Catherine Ferrie Kilmain, Executive Vice President of Engineering, Bell Helicopter. Left: A very surprised Tom Wood on the announcement of the Tom Wood Honorary Scholarship.



Mr. Ramin Modarres, Washington University in St. Louis, St. Louis Chapter Scholarship
 Ms. Katarina Alexis Morowsky, Oregon State University, Stanley Hiller, Jr. Scholarship
 Mr. David B. Reich, The Pennsylvania State University, Frank N. Piasecki Scholarship
 Mr. Joseph H. Schmaus, University of Maryland College Park, Joseph P. Cribbins Scholarship
 Ms. Elena Shrestha, University of Maryland College Park, Alfred Gessow Scholarship
 Ms. Elizabeth A. Weiner, University of Maryland College Park, Richard L. Ballard Scholarship

Committee who performed the difficult process of selecting the outstanding students to receive scholarships this year, and announced the winners.

These following VFF Scholarship winners are truly the future of our vertical flight community! Congratulations to the following students:

Bachelor Degree Recipients

Mr. Gerald Andrews, University of Maryland College Park, John A. Zuk Scholarship
 Mr. Vaibhav Kumar, Georgia Institute of Technology, Hans and Gil Weichsel Scholarship
 Mr. Terry Hei Tsun Ma, Georgia Institute of Technology, George Powell Scholarship
 Mr. Jackson Alexander Morris, University of Alabama, Tuscaloosa, Barry Baskett Scholarship
 Mr. Jagadesh Siva Movva, Georgia Institute of Technology, Richard M. Carlson Scholarship
 Mr. Nikolai A. Travis, The Pennsylvania State University, Larry Doyle Scholarship

Master Degree Recipients

Mr. David Allen Coleman, Texas A&M University, Eugene K. Liberatore Scholarship
 Ms. Amanda L. Grubb, Georgia Institute of Technology, Charles C. Crawford Scholarship
 Mr. Mohit Gupta, Georgia Institute of Technology, Don Toler Scholarship
 Mr. Kevin Jacobson, Georgia Institute of Technology, Jean Boulet Scholarship
 Mr. Robert John Niemiec Jr., Rensselaer Polytechnic Institute, Ray Prouty Scholarship
 Mr. Byron W. Patterson, Massachusetts Institute of Technology, Bell Helicopter Vertical Flight Scholarship
 Mr. Dhwanil Shukla, Georgia Institute of Technology, Alfred L. Wolf Scholarship
 Ms. Stacy Sidle, University of Maryland College Park, Hal Andrews Scholarship
 Ms. Lauren Trollinger, University of Maryland College Park, John M. Slattery Scholarship

Doctorate Degree Recipients

Mr. George Jacobellis, Rensselaer Polytechnic Institute, Paul E. Haueter Scholarship



AHS Awards Recognition

Ed Birtwell, GE Aviation and this year's Chair of the Board of AHS International, presided over the remainder of the Grand Awards Banquet. Birtwell thanked the members of the AHS Awards Committee. With more than 40 extremely impressive nominations this year, the effort and commitment put forth by the members of this committee was considerable. The results of their deliberations have ensured that this year's award winners exemplify excellence in every category.

The Alexander A. Nikolsky Honorary Lectureship



Ed Birtwell and Dr. Robert Ormiston, Nikolsky Lecturer.

This award is given to an individual who has a highly distinguished career in vertical flight aircraft research and

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development and is skilled at communicating his/her technical knowledge and experience. Established in 1981, the award honors a member of Igor Sikorsky's original team and later Princeton University professor who educated a generation of helicopter engineers.

This year the Awards Committee has bestowed this high honor on Dr. Robert A. Ormiston, US Army Emeritus Scientist with the Army's Aviation Development Directorate – Aeroflightdynamics Directorate (AFDD) at Moffett Field, California. Ormiston's accomplishments have been comprehensive and numerous. He was cited for "Dedicating over 40 years to analyzing and understanding critically important rotary wing aeromechanics phenomena." In addition, he has mentored and inspired two generations of university graduates, many of whom are today's rotorcraft industry leaders, lead designers, and decision makers. The impact that Ormiston has had on the rotorcraft technical community over the past 50 years is immeasurable.

Paul E. Haueter Award

This award is given for an outstanding technical innovation in the development of a vertical take-off and landing aircraft other than a helicopter. Instituted in 1966, the award honors an aeronautical engineer, devoted public servant, and AHS officer who was instrumental in fostering the early development of VTOL aircraft in the United States. The recipient of the Paul E. Haueter Award this year was Ron Kisor, Bell Helicopter's chief engineer on the Bell Boeing V-22 Osprey. Over a career at Bell spanning more than a quarter century, Ron's technical contributions and leadership have been instrumental in the success of the V-22 tiltrotor. Examples of his achievements include his role in mitigating wake interaction during ship-board operations, incorporating high angle of attack limiting in the control laws, and solving lateral axis Pilot Induced Oscillations. His pivotal contributions helped lead to a new understanding of tilt rotors in Vortex Ring State.

Technical Fellows

AHS Technical Fellow Awards are granted to Society members whose career-based accomplishments towards the goals and objectives of the vertical flight industry constitute an outstanding technical achievement. Five Technical Fellow

Awards were presented: Prof. Marilyn J. Smith, Georgia Institute of Technology; Dr. Friedrich K. Straub, Senior Manager of Dynamics Technology / Technical Fellow at The Boeing Company; William Welsh, Technical Fellow, Dynamics, Sikorsky Aircraft Corporation (accepted by Dr. Vineet Sahasrabudhe); Prof. Norman Wereley from the University of Maryland; and Dr. Hyeonsoo Yeo, Research Scientist at the US Army Aviation Development Directorate – AFDD.

Marilyn J. Smith is a Professor in the School of Aerospace Engineering at the Georgia Institute of Technology in Atlanta, Georgia. Smith has made significant contributions to the advancement of rotorcraft aerodynamics modeling methods, especially in the field of computational fluid dynamics. Her participation and contributions to the NASA Rotary Wing Project, the international Higher-harmonic-control Aeroacoustics Rotor Test (HART) Program, NASA-Army UH-60A Airloads Working Group, and several US Army/French MOU tasks have been key to the success of these programs. She is recognized as having a unique ability to understand real world issues and translate them into a form that can be more easily solved.

Dr. Straub is a Boeing Technical Fellow and Senior Manager of Dynamics Technology in Mesa, Arizona. He is an internationally recognized expert in rotorcraft dynamics, aeroelasticity, active controls and adaptive rotorcraft structures. A unique aspect of Dr. Straub's accomplishments is that they include theoretical and numerical contributions, innovative hardware development and testing, and model and full-scale rotor wind tunnel testing. His research contributions are summarized in 24 refereed journal publications, 70 papers published in conference proceedings, 10 reports, and 7 patents.

William Welsh is a Technical Fellow in Dynamics at the Sikorsky Aircraft Corporation. During his career, Bill has been a leading innovator in the areas of rotorcraft dynamics, aeroelastic stability, and the development of control systems for active internal noise and vibration control. He combines theoretical expertise, understanding of complex machinery and ingenuity to solve problems and bring new products to fruition. One key technology Welsh spearheaded was the Active Vibration Controller that has become standard equipment on a variety of helicopter platforms. His record of contributions includes numerous groundbreaking technical papers as well as a suite of 19 important patents.

Prof. Norman Wereley is the Minta Martin Professor and



Ed Birtwell and Ron Kisor, Paul E. Haueter Award.



Left to Right: Technical Fellow Award Winners Dr. Vineet Sahasrabudhe (accepting for William Welsh), Prof. Marilyn Smith, Dr. Friedrich Straub, Prof. Norman Wereley, Dr. Hyeonsoo Yeo and Ed Birtwell.

Department Chair for Aerospace Engineering at the University of Maryland. Wereley is the world leader in the development of magneto-rheological fluid technology and its application to adaptive energy absorption systems in rotorcraft sub-systems such as landing gear, stroking crew seats, and lag dampers. His related areas of world-class research include the design and development of actuators using smart and multifunctional material actuation schemes, and pneumatic artificial muscles. Wereley has published over 195 articles in technical journals and over 275 articles in conference proceedings. He has 18 patents with several more pending.

Dr. Hyeonsoo Yeo is an Aerospace Engineer at the US Army's Aeroflightdynamics Directorate. Dr. Yeo's accomplishments include developing improved methods for the prediction of rotor blade loads, rotor performance, rotor design, and improved analysis methods for rotorcraft comprehensive analysis. Highlights include the successful coupling of computational fluid and computational structural dynamics for rotor blades, the first-ever use of this coupled methodology to analyze rotor aeroelastic stability, his chairing of the UH-60 Airloads Working Group, and authoring of 28 career peer-reviewed journal publications. Recognition for his technical publications has included five AHS best paper awards and the Alfred Gessow Award for overall best paper at the 2011 AHS Forum.

François-Xavier Bagnoud Vertical Flight Award

This award is given to a Society member under the age of 35 for his/her career-to-date outstanding contributions to vertical flight technology. The award, created in 1992, honors the memory of a young helicopter engineer, Swiss citizen, author and rescue pilot who founded the AHS student chapter at the University of Michigan. This year the award was presented to Andrea Chavez, Bell Helicopter. Through several test programs at Bell, Chavez has built a strong technical background in helicopter propulsion systems. She has managed research and development for six propulsion technologies that focused on demonstrating an improved engine Health and Usage Monitoring System and been Bell's drive system IPT lead for Diagnostic/Condition Based Maintenance research. She is a co-holder of a patent for a supercritical tail rotor driveshaft and of a patent pending for a non-metallic debris monitoring system. Chavez is also

recognized as a powerful advocate for the benefits of careers in Science, Technology, Engineering, and Mathematics (STEM) through pre-college outreach efforts.

Grover E. Bell Award

Given for an outstanding research and experimentation contribution to the field of helicopter development brought to fruition during the preceding calendar year, this award was created by Larry Bell, founder of Bell Aircraft (now Bell Helicopter) in 1957. The award honors his pioneering older brother, Grover E. Bell, who was killed in an aircraft crash in 1913.

This year's honored recipient is the Hub Mounted Vibration Suppressor Design and Test Team, comprised of the US Army Aviation Applied Technology Directorate (AATD), LORD Corporation, and Sikorsky Aircraft. Accepting the award on behalf of their team were Joseph Andrews and Jeff Cozine, Sikorsky; Russ Altieri, Mark Jolly, Greg Fricke, Dan Kakaley and John Nagle, LORD Corporation; and Jim DiOttavio and David Waldman, AATD. The team successfully demonstrated the ability of the HMVS to provide active enhanced vibration suppression compared to the legacy passive systems, with significantly less weight, paving the way for a jet-smooth ride on both legacy and future aircraft with active rotor control. The HMVS is an actively-controlled force generator that can be commanded to cancel the rotating in-plane vibratory hub loads before they propagate into the airframe. This work represents a breakthrough technology for the successful suppression of these vibratory loads at all flight speeds.

AHS Supplier Excellence Award

Created in 1995, this award is given in recognition of a supplier who, through the quality, innovativeness and cost-effective technology of its products, has made a notable contribution to improving the state of the art of vertical flight aircraft. KUKA Systems Corporation captured this year's award. Accepting this award were Jeff Camphous, Mike Jurichny, Robert Soulliere and Craig Tunis, KUKA. This year's award was for the company's extraordinary performance as the tooling integrator for the assembly of the Bell Helicopter 525 Relentless super-medium helicopter. KUKA provided technical guidance where needed and participated in producibility assessments with the Bell team. Leveraging their vast supply



Ed Birtwell and Andrea Chavez, François-Xavier Bagnoud Vertical Flight Award.



Ed Birtwell and members of the Mounted Vibration Suppressor Design and Test Team, comprised of the US Army Aviation Applied Technology Directorate (AATD), LORD Corporation, and Sikorsky Aircraft, winners of the Grover E. Bell Award.



KUKA Systems Corporation Aerospace Group accepts the AHS Supplier Excellence Award.

chain, the company provided a cost effective, efficient and timely response to the program's need. KUKA transcended the role of a tooling integrator and became more than a supplier on the 525 program – they became a true partner in all phases of the program.

AgustaWestland International Fellowship Award

This award is given for the most significant contribution to international vertical flight cooperation by an individual or group. Established in 1989, the award honors the memory of Paolo Bellavita, whose career at Gruppo Agusta was marked by his dedication to furthering international cooperation in the world of vertical flight. This year's award went to William E. Chiles, CEO Emeritus of the Bristow Group and Founder and Chair of HeliOffshore. Chiles has long been a leading advocate for helicopter safety. He drove a safety culture within the Bristow Group, one of the largest helicopter transport companies in the world, and by working in partnership with the manufacturers, his customers and his competitors, he demonstrated a commitment to safety that has become the industry standard. His contributions to helicopter safety have undoubtedly saved many lives already, and the Zero Accidents vision and safety culture that he promoted will continue to save lives.

Robert L. Pinckney Award

Given in recognition of notable achievement in manufacturing research and development for rotorcraft or rotorcraft components brought to fruition in recent years, this award was created by The Boeing Company in 1995 to honor the memory of Robert L. Pinckney, an eminent manufacturing engineer.

This year's recipient is the S-97 Raider Helicopter Fuselage Development Team, with members from Sikorsky Aircraft and Aurora Flight Sciences. The award was accepted by Tom Carstensen, Sikorsky Aircraft and Clint Church, Aurora Flight Sciences. The team demonstrated the viability of designing, tooling, manufacturing and assembling a rotorcraft fuselage that was 70% composite in a rapid prototyping environment.



Dr. James Wang accepting the AgustaWestland International Fellowship Award for William E. Chiles.



Tom Cartensen, Sikorsky Aircraft and Clint Church, Aurora Flight Sciences representing the S-97 Raider Helicopter Fuselage Development Team accept the Robert L. Pinckney Award from Ed Birtwell (left).

The team used advanced composite materials including in- and out-of-autoclave curing techniques, innovative tooling to maintain tight dimensional control but allow for reduction in tool count, and extensive use of laser tracker metrology to accurately locate parts and minimize the need for assembly tooling. All these were enabled by integration of the Sikorsky and Aurora design team through a complete 3D digital design environment used throughout the life cycle of the development program.

Harry T. Jensen Award

This award is given for an outstanding contribution to the improvement of vertical flight aircraft reliability, maintainability and/or safety through improved design brought to fruition during the preceding year. Established by Sikorsky Aircraft in 1986, the award honors Harry Jensen's contributions to enhance helicopter qualification, structural reliability and safety.

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Stacey Kelly and Douglass Rhoads receive congratulations from Ed Birtwell (left) for the Harry T. Jensen Award.

This year the award is presented to the V-22 Structural Appraisal of Fatigue Effects (SAFE) Team, a joint US Naval Air Systems Command (NAVAIR)/Bell Boeing effort, accepted by Stacey Kelly, Bell Helicopter and Douglass Rhoads, The Boeing Company (Chuck Miller, NAVAIR, was unable to attend). The SAFE effort has been accomplished by a cross functional Bell Boeing/NAVAIR team whose goal was to improve V-22 safety, reliability and maintainability through a data-based determination of fatigue life expended on critical components. The team plowed new ground to acquire data from numerous sources and process the analytical results to prove that measurements from on-board sensors could reliably determine the remaining life of fatigue sensitive components. To date, several fuselage frames are actively using SAFE for fatigue assessment, extending their lives more than three-fold.

Howard Hughes Award

This award is given for an outstanding improvement in fundamental vertical flight technology brought to fruition during the preceding year. The award is intended to foster accomplishments in the basic science and technology disciplines of the vertical flight community. The award was established in 1977 by Hughes Helicopters to honor

the memory of Howard Hughes and his pioneering accomplishments in aviation.

This year, the Hughes award went to Sikorsky's MATRIX Technology Team – represented at the Awards Banquet by Dr. Igor Cherepinsky, Joshua Leland, John D. Martin, Jr. and Mark Ward – for its advancement of rotorcraft autonomy. In 2014, the team achieved completely autonomous flight with an S-76 helicopter, including takeoff, path planning, navigation to the objective and landing zone selection. Additionally, within the last two years, MATRIX technology has been successfully introduced into commercial helicopter operations as a software application – designated the S-92 Automated Rig Approach system – enhancing the ability of manned transport helicopters to reach oil and gas rigs safely. This technology has tremendous potential for the military, public safety and the commercial sector.

Frederick L. Feinberg Award



Jim Unghire (Kaman), Ed Birtwell, CW4 Anders Nielsen (HAATS) and Travis Simpkins (rescuee) during the Frederick L. Feinberg presentation.

This award is presented to the pilot or crew of a vertical flight aircraft who demonstrated outstanding skills or achievement during the preceding year. The award, sponsored by the Kaman Corporation, honors the memory of an outstanding helicopter test pilot and an exemplary person. This year's award was given to the Colorado Army National

Guard High Altitude Aviation Training Site (HAATS) Black Hawk Team. The team is recognized for performing back-to-back rescues of two mountaineers injured in separate accidents on two of Colorado's 14,000 ft (4.3 km) peaks. Representing the HAATS Crew was co-pilot Chief Warrant Officer 4 Anders Nielsen. The other members of the crew, who unfortunately were not able to attend, were Chief Warrant Officer 5 Jeffrey Girouard, Sergeant 1st Class Tommy Castillo and Sergeant 1st Class Charles Whaley. John Unghire from Kaman joined



Ed Birtwell presents the Howard Hughes Award to the Sikorsky MATRIX Team.



David Gibbings received the John J. Schneider Historical Achievement Award.

in the presentation.

The first rescue was on the morning of September 13, 2014, at 13,900 ft on Mt. Sneffles near Ouray, Colorado. The climber, Travis Simpkins, had tumbled 50 ft (15 m) breaking his femur. The HAATS crew performed a successful hoist operation to extract him from the mountain and then transported him to Ouray where he was immediately transferred to a LifeFlight helicopter. He underwent successful surgery on his leg later that day. The next day, September 14, 2014, the same crew performed a one-wheel landing on Capitol Peak to rescue another climber, Justin Vassar, who had tumbled 300 ft (91 m) during a rockslide, suffering severe bleeding and lacerations to his face and arms. He was transported directly to the hospital where he underwent successful surgery on his injuries.

CW4 Nielsen was joined on stage by Travis Simpkins, the person who nominated the crew, but far more importantly, the individual who was rescued by the HAATS crew from Mt. Sneffles. Simpkins would likely not be alive had it not been for the incredible efforts of the crew. The HAATS crew received a standing ovation.

John J. Schneider Historical Achievement Award

Established in 2003 in the memory of vertical flight historian John J. Schneider, this award is given to an individual for distinguished achievement in encouraging appreciation of, and enhancing access to, the history and legacy of vertical flight aviation. This year's award was presented to David Gibbings, MBE. Gibbings was recognized for his distinguished achievement in encouraging appreciation of, and enhancing access to, the history and legacy of vertical flight aviation. Since his retirement from Westland in 1993 – after 44 years in aviation – Gibbings has served as the historian for AgustaWestland UK and has written several histories of Westland aircraft. He has also been actively engaged as a consultant, author, lecturer, and aviation artist (with over 250 paintings distributed worldwide, despite being diagnosed with Parkinson's Disease in 2001), and as an active member of the AHS History Committee for the past decade. In 2014, David was appointed as a Member of the Most Excellent Order of



Clayton Turner (left) accepted the Vertical Flight Heritage Site Award for NASA Langley Research Center, and Jimmy Hayes and Kristin Robertson for the Piasecki/Vertol/Boeing site, from Ed Birtwell.

the British Empire (MBE) by Her Majesty Queen Elizabeth II for "services to aviation heritage and defense."

Vertical Flight Heritage Site Awards

The Vertical Flight Heritage Sites program is intended to recognize and help preserve locations with the most noteworthy and significant contributions made in both the theory and practice of vertical flight aircraft technology. This year the committee selected two sites to be recognized for their historic significance.

NASA Langley Research Center, Hampton, Virginia has had a long and distinguished history in powered lift technology development. This research has formed the foundation of knowledge for the powered lift community worldwide. Since the dedication of Langley in 1920, it has contributed to the understanding, design, analysis and flight test development of experimental and production vertical flight configurations. Mr. Clayton Turner, Acting Deputy Director of the Center, accepted the award for NASA Langley.

The Piasecki/Vertol/Boeing "Morton" Site, Springfield, Pennsylvania was also selected. On this site, from March 1947, Piasecki Helicopter Corp. developed its tandem rotor helicopters, the XHRP-X / HRP-1 Rescuer, the HUP Retriever and H-21 Workhorse/Shawnee. As Vertol, the company continued development of the tandem helicopter, resulting in what would become the Boeing CH-46 Sea Knight and the CH-47 Chinook. Representing the Morton site were Jimmy Hayes, Piasecki Aircraft Corp. and Kristin Robertson, The Boeing Company.

Captain William J. Kossler, USCG Awards

This award is given for the greatest achievements during the preceding year related to the operation or application of a vertical flight aircraft. Established in 1951, the award honors the memory of a US Coast Guard airman, aeronautical engineer and early advocate of helicopters in search and rescue operations. This year, the Awards Committee selected



Ed Birtwell presents LTC Whitney B. Gardner and CW4 Brandon S. Tipton, representing the US Army 2nd Battalion 501st Aviation Regiment with the Captain William J. Kossler Award.

two incredible nominees for the Award.

The US Army 2nd Battalion 501st Aviation Regiment was represented by LTC Whitney B. Gardner and CW4 Brandon S. Tipton. The successful deployment of the 2nd Battalion as part of Task Force 2-501 Aviation marks the first time US Army aircrews and aircraft joined a joint forces command in response to a regional pandemic. In October 2014, the Task Force deployed 273 personnel and aircraft to West Africa as part of the United States' response to the deadly outbreak of the Ebola Virus Disease in Liberia and West Africa. Given the challenging tropical environment and extremely limited infrastructure in this part of Africa, Task Force Iron Knights played a critical supporting role in providing the speed and flexibility to overcome great distances and rapidly construct treatment facilities and blood sample testing laboratories.

With only two weeks to prepare, the Aviation Task Force began a unique and highly publicized medical threat training program while beginning movement from Fort Bliss, Texas to Monrovia, Liberia of six UH-60L Black Hawks, four CH-47F Chinooks, four HH-60L MEDEVAC rotary wing aircraft, an air traffic services tactical terminal control section, and all associated equipment, including 69 pieces of rolling stock and 97 containers.

Next honored was the crew of United States Coast Guard Helicopter 6029, including LCDR James R. Cooley, LT Adriana Knies Gaenzle, AMT1 Shawn J. McCann and ASTC Joel M. Sayers. On the night of 26 January 2014, Coast Guard District Thirteen received a request from the Air Force Rescue and Coordination Center to MEDEVAC a seriously injured ice climber in the Cascade Mountains in central Washington. The climber had fallen approximately 800 ft (240 m) down an ice slope, and had come to rest on boulders protruding from the mountainside at 5,200 ft (1.6 km) above sea level. The fall caused a compound fracture of the leg, head injuries and a broken shoulder. Cold temperatures then contributed to the onset of hypothermia. With multiple Puget Sound aviation rescue assets grounded by dense fog in the Seattle metro area, the District Thirteen Command Center contacted Sector Columbia River to assess options for the employment of an MH-60T helicopter.



Ed Birtwell with LCDR James R. Cooley, LT Adriana Knies Gaenzle, AMT1 Shawn J. McCann and ASTC Joel M. Sayers. The crew of United States Coast Guard Helicopter 6029 were honored with the Captain William J. Kossler Award.

Arriving on scene, the crew of CG6029 located the ground rescue team and the injured climber on the side of a mountain. With steep terrain in close proximity, and with little illumination for aviation night vision goggles, LCDR Cooley and LT Knies made reconnaissance approaches to assess aircraft power requirements, evaluate winds, search for obstacles and assess the effects of rotor wash to the personnel on the mountain. LCDR Cooley maintained a precision hover while AMT1

McCann performed a direct deployment of ASTC Sayers to the mountainside, immediately followed by a rescue litter hoist deployment. But the steep terrain and boulders at the climber's location forced AMT1 McCann to place ASTC Sayers and a rescue litter in a safer location approximately 50 yards (45 m) downslope.

Navigating in instrument meteorological and icing conditions, LT Knies contacted air traffic control and coordinated priority aircraft clearance to proceed directly to Boeing Field in order to transfer the climber to a Level 1 trauma center. The climber was transferred to emergency medical services, and survived the accident.



LT Adriana Knies Gaenzle holding the US Coast Guard covers at the banquet.

Dr. Alexander Klemin Award

The Dr. Alexander Klemin Award is the highest honor the AHS bestows on an individual for notable achievement in advancing the field of vertical flight aeronautics. The award, created by Frank Piasecki in 1951, honors the memory of an eminent aeronautical engineer, educator, and pioneer in rotary



wing aeronautics. This year the Society recognized Franklin D. Harris.

After graduating from Rensselaer Polytechnic Institute in 1956, Harris began his career at what was then the Vertol Company where (in his words) he spent his “apprentice years” and “grew up.” He considers the highlight of this stage of his career was being the manager of the newly completed V/STOL Wind Tunnel Complex. Subsequently, he served as the Director of Research and Development. In 1977, Harris moved to Bell Helicopter and entered what he calls the “technical management” phase of his career. His positions at Bell included being Manager of Preliminary Design, Engineering Director for the Army Helicopter Improvement Program, and culminated in his being Vice President Engineering for the LHX SuperTeam. Since retirement from Bell in 1992, Mr. Harris has served as a consultant and collaborator in close cooperation with the US Army’s AFDD and NASA. He thinks of this third phase of his career as “returning to his technological roots.”

In the course of his career, Harris contributions to the technical community have been documented in a staggering number of in-house reports, AHS proceedings papers and NASA publications. He has received numerous recognitions from AHS, including an Honorary Fellowship, a Grover E. Bell Award, a Nikolsky Lectureship, and a Schneider Historical Achievement Award. The Schneider Award recognized Harris for documenting rotorcraft heritage and history in the first two volumes of his epic trilogy entitled “Introduction to Autogyros, Helicopters, and Other VTOL Aircraft.” He has also received the NASA Public Service Medal.

AHS Honorary Fellow Award

Honorary Fellow status is granted to highly distinguished Society members who have made exceptional leadership, innovative or technical contributions that have significantly advanced AHS International and the vertical flight community during their career. The Society honored Dr. Michael S. Torok, Vice President for the CH-53K Program at Sikorsky Aircraft (accepted by Mark Miller) and Tommie L. Wood, Senior Technical Fellow at Bell Helicopter.

Mike Torok is the Vice President for the CH-53K Program at Sikorsky Aircraft. He has been an active AHS member since 1986 and has made exceptional leadership, innovative and



Top Left: Ed Birtwell and Franklin Harris, who was honored with the Dr. Alexander Klemin Award. Top Right: Ed Birtwell awards Honorary Fellowships to Michael Torok (accepted by Mark Miller) and Tom Wood. Left: Mike Hirschberg congratulates Ed Birtwell on a job well done as Chair of the Board.

technical contributions in the advancement and development of rotary wing aircraft over a career spanning more than 25 years. During this time, his outstanding commitment to the Society has included officer position at the local, regional, and national levels. He has been recognized numerous times by the Society, by industry, by academia, and by his peers. Torok was also a VFF Scholarship winner in 1987.

Tom Wood is the Senior Technical Fellow at Bell Helicopter. Having worked at Bell for 50 years, Wood has been a key figure in all major development programs undertaken at the company in the past decades, contributing numerous and significant innovations in the field, as well as mentoring generations of rotary wing engineers. Due to his extensive external relationships, Wood is well known to leading figures across the aerospace and rotorcraft industry, NASA, DoD, and academia. Wood has also been a longtime leader in AHS, having joined in 1967. Wood was selected for the Howard Hughes Award in 1984, the Paul E. Haueter Award in 2005, an AHS Technical Fellow in 2010, and the Dr. Alexander Klemin Award in 2011.

Passing of the Gavel

Ed Birtwell thanked AHS staff and all committee members and chairs, presenters, board members and Technical Council members who made Forum 71 such a great success. He noted

that these last three years on the AHS executive committee was a great honor and reinforced for him the great value that AHS makes to the vertical lift community. Mick Maurer, Sr. Vice-President of United Technologies Corp., is the incoming Chair of the Board of AHS International; as he was unable to attend the banquet, Mike Hirschberg recognized Birtwell's outstanding work on behalf of the Society as AHS Board Chair, and Chair of the AHS Awards Committee. Hirschberg thanked Birtwell for having led the AHS Board with a great deal of passion, advocating for the Society across the industry. Birtwell was presented an honorary engraved gavel in recognition of his superlative efforts on the AHS International Board as a fond reminder of the tremendous growth the Society saw during his tenure on the Board.



For more photos, check out our gallery at www.vtol.org/qr/forum-71-awards or scan this QR code!



History Committee Award

Paul Fardink was the recipient of the AHS History Committee's Bernard Lindenbaum Award for best historical paper, for his documentation of "The US Army's CH-54 Skycrane Helicopter: History and Contributions.



From left to right: Dr. Bruce Charnov, History Session Chair; Paul Fardink, The Bernard Lindenbaum Award Winner for Best Historical Paper; David Gibbings, John J. Schneider Historical Achievement Award Winner; and Jacques Virasak, AHS History Committee Chair.

Student Design Competition Winners

Each year for the last 31 years, an AHS corporate member has sponsored the Annual Student Design Competition. The sponsor for 2013-2014 was AgustaWestland. The Request For Proposal challenged students to design an experimental Vertical Take-off and Landing (VTOL) aircraft – an X-VTOL – which is intended to establish key performance attributes to enable transformational mission capabilities on an objective aircraft. These include efficient sustained hover, long-range cruise, high useful loads and sustained flight at high speeds.

The 71st Annual Forum & Technology Display afforded the winning graduate and undergraduate students the opportunity to present their winning entries

in the Awards Presentations Session. The first place undergraduate prize went to St. Louis University with "Heli-Fast." Team members included Allison Hefferan, Philip Hampton, Daniel Vogel, William Scott, Nicholas Craft and Raymond LeBeau, Faculty Advisor. The Georgia Institute of Technology placed first in the graduate category with their "XV-58 Manta" entry. Team members included Clélia Level, Akshay Pendharkar, Dmitry Bershadsky, Frank Patterson, Istvan Keszte, Joachim Hodara, Lee Whitcher, Nathon Woelke, Siti Nur Aqidah Md Azmi, Thomas Fell, Yong Boon Kong and Prof. Daniel Schrage, Faculty Advisor. In addition to winning a cash prize, each student on the team is presented with an individual certificate and the school receives a certificate during the session. See www.vtol.org/sdc to view the winning entries.

Cheeseman Award

The Ian Cheeseman Award is given for the best paper at the European Rotorcraft Forum (ERF). This year the award was presented to Dr. Joon W. Lim, US Army Aviation Development Directorate-AFDD for his paper, "Consolidation of Structural Constraints in Passive Rotor Blade Design for Improved Performance." This paper was first presented at the 40th ERF in Southampton, UK September 2-4, 2014.



From left to right: Dr. Richard Markiewicz, ERF Chair; Dr. Joon Lim; and Blanche Demaret, Forum 71 Technical Chair.