

2020 Honours, Medals & Awards

RAeS Honours, Medals & Awards

The global aerospace community's most prestigious and long-standing awards honouring achievement, innovation and excellence.

The Royal Aeronautical Society has been honouring outstanding achievers in the global aerospace industry since 1909, when Wilbur and Orville Wright came to London to receive the Society's first Gold Medal. Over the years, honouring aerospace achievers in this way has become an annual tradition. The Society's Awards Programme recognises and celebrates individuals and teams who have made an exceptional contribution to aerospace, whether it is for an outstanding achievement, a major technical innovation, exceptional leadership, or for work that will further advance aerospace.

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RAeS Honours

Honorary Fellowship

The world's highest distinction for aerospace achievement awarded for only the most outstanding contributions to the aerospace profession. This honour is conferred on those whose careers, leadership, inspiration and impact mark them out as among the most eminent, widely recognised and influential aerospace professionals of their generation.

Dr Meyer J Benzakein FRAeS

Assistant Vice President for Aerospace and Aviation Research at Ohio State University

Dr Benzakein is admitted to Honorary Fellowship for his pioneering work in commercial aircraft propulsion. He led the development of the CFM56 and GE90 Engine series, which powered the Airbus A320, A321, A340-300 and the Boeing 777. He was responsible for advancing the state of the art in engine technology for low noise, low emissions, low fuel burn and high reliability.

Dr Benzakein received his mechanical engineering degree from the Federal Institute of Technology in Zurich in 1960. After his move to the USA he received a Master of Science degree from Columbia University in 1962 and a PhD degree from Wayne State University in 1967. He started his engineering career at General Electric Aviation where he grew through the ranks and ended up leading the engineering development of all new commercial and military engines, as well as the technology for future products. He retired in 2004 and joined the faculty of The Ohio State University as the Wright Brothers Professor and Chair of the Aerospace Engineering Department. In 2012, he moved to his current position as Assistant Vice President for Aerospace and Aviation where he leads different research activities in aeronautics and acoustics, power electronics, additive manufacturing, material research and unmanned vehicles. Dr Benzakein is a member of the United States National Academy of Engineering and the French Air and Space Academy. He is a Fellow of the Royal Aeronautical Society, the American Institute of Aeronautics and Astronautics (AIAA) and the American Society of Mechanical Engineers. He was awarded the Royal Aeronautical Society Gold Medal in 2001. He received an Honorary Doctorate from the University of Poitiers in 2006 and the AIAA Reeds Aeronautics Award in 2007. He also has served on many National Academy, industry and US Government advisory groups.



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Professor Trevor Birch FRAeS

Technical Fellow at the UK Defence Science and Technology Laboratory

Professor Birch is admitted to Honorary Fellowship in recognition of more than 30 years of research, development and leadership in aerodynamics and related flight science disciplines in support of UK and allied forces.

Professor Birch joined the Aerodynamics Department of the Royal Aircraft Establishment as a Scientific Officer in 1986, having previously completed an apprenticeship and degree in Mechanical Engineering. He has spent almost his whole career working in aerodynamics research, development and project support for the Ministry of Defence (MoD) and has worked on many aircraft and weapon programmes. His current primary technical focus is in the area of high-speed and hypersonic systems. Throughout his career Professor Birch has maintained strong links with academia both in the UK and US. He has held several visiting academic positions, been a member of various academic advisory boards and has commissioned and co-supervised a significant number of PhDs. He has also been a reviewer for the EPSRC. Another enduring theme has been international research collaboration. In this field he has been a member of the Executive Committee and Council of the Group for Aeronautical Research and Technology in Europe, Executive Chairman of the Weapons Technology Group and UK lead on the Aerospace Systems Group of the Technical Cooperation Program, and an active contributor to the NATO Science & Technology Organisation. He has been fortunate to have worked with many overseas partners and has led wind-tunnel experiments in major facilities in the UK and overseas, including tunnels at NASA, National Research Council and ONERA. Professor Birch is a Visiting Professor in the School of Mechanical Engineering at the University of Sheffield and a Visiting Fellow in the School of Engineering at Cranfield University. He is a former Chairman of the RAeS Aerodynamics Group and an Associate Editor of The Aeronautical Journal.





Dr Ashwani Gupta FRAeS

Distinguished University Professor at the University of Maryland, USA

Dr Gupta is admitted to Honorary Fellowship in recognition of his fundamental work on swirl flows used in almost all aviation and industrial gas turbine engines. This has led to improved combustion, reduced fuel burn and reduced pollution, including reduced noise.

Dr Gupta received his original PhD from the University of Sheffield. He then undertook research work at Sheffield and at the Massachusetts Institute of Technology, before joining the University of Maryland in 1983. His work on swirl flows led to the development of the double annular staged combustor and the twin annular premixing swirler that are used in aircraft engines and stationary gas turbines manufactured by General Electric, Pratt & Whitney and Rolls-Royce. In addition, Dr Gupta made fundamental contributions to the development of High Temperature Air Combustion Technology (HiTAC). This technology has had a global impact on industrial combustion processes yielding significant energy savings and pollution reduction. Dr Gupta is an Honorary Fellow of ASME and a Fellow of AIAA, AAAS and SAE. He has served on the Board of Directors of AIAA. He has published more than 750 technical papers and three books. In addition, he has edited 18 books and several technical journals. He had been awarded two higher doctorates and three honorary doctorates. Dr Gupta has received several national honours and best paper awards from AIAA, ASME and the University of Maryland.

2020 Honours, Medals & Awards

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Ing Fabio Nannoni

Former Senior Vice President, Engineering and Head of the Design Organisation at Leonardo Helicopters

Ing Nannoni is admitted to Honorary Fellowship in recognition of his profound contribution to helicopter design.

Ing Nannoni was awarded a Master's degree in Aeronautical Engineering by Politecnico Turin in 1982. After working briefly for Alenia, he joined Agusta in 1985, beginning a 35-year career in helicopter design, development and engineering. He played key roles in the development and evolution of aircraft such as the EH101, NH90, A109 and the revolutionary AW139. He was the architect of the Agusta Westland family of helicopters – AW149, AW169 and AW189 – and has been crucially influential in the engineering effort that has created the world's first civil tilt-rotor – the AW609. After ten years as the Technical Director and Head of Design Organisation for Agusta Westland, in 2019 he became Head of Safety System Governance for the Leonardo Helicopter Division, reporting directly to the Company Managing Director. Ing Nannoni has been the recipient of many awards, including in 2010 awards from Agusta Westland, Finmeccanica and the Italian Government for his invention of the Fourth Generation Advanced Rotor for Helicopters.





Dr David Newman FRAeS

Managing Director of Flight Medicine Systems Pty in Australia

Dr Newman is admitted to Honorary Fellowship in recognition of his extensive contribution to the field of aviation medicine over several decades.

Dr Newman is Visiting Professor of Aerospace Medicine at King's College London. His widely cited research covers the full spectrum of aerospace medicine and physiology, clinical aviation medicine, aerospace biomechanics, and flight safety. He was previously Professor of Aviation Medicine at Monash University in Australia. Prior to his academic career, Dr Newman spent 13 years as a military officer and aviation medicine specialist in the Royal Australian Air Force (RAAF). His RAAF career, in Australia and on exchange in the UK, included three years in support of tactical fighter operations and two years as Chief Instructor at the RAAF Institute of Aviation Medicine. He left the RAAF in 2000. In addition to his academic work, he provides high-level aviation medicine consulting services to various private and public sector organisations, and government agencies across the globe. Dr Newman has published more than 100 scientific papers and two books, including 'High G Flight'. He is a pilot with experience in a range of military and civilian aircraft including the F/A-18 Hornet, the Hawk T1 and the Harrier. Dr Newman holds a medical degree from Monash University, a PhD from the University of Newcastle, an MBA from Deakin University and a Diploma in Aviation Medicine from the Royal College of Physicians of London. His many international awards include the Stewart Memorial Prize from the RAF School of Aviation Medicine in 1997, the Royal Aeronautical Society's 2000 Buchanan-Barbour Award, the Aerospace Medical Association's 2000 Arnold Tuttle Award, and the 2014 John Paul Stapp Award.

Royal Aeronautical Society

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Dr Alexander J Smits

Eugene Higgins Professor Emeritus of Mechanical and Aerospace Engineering at Princeton University, USA

Dr Smits is admitted to Honorary Fellowship in recognition of his scientific leadership, notably his pioneering contributions to the observation and understanding of wall turbulence in extreme Reynolds number and Mach number regimes.

Dr Smits received his PhD from the University of Melbourne, Australia in 1975. After conducting research at Imperial College, London and the University of Melbourne, he was appointed Assistant Professor in the Department of Mechanical and Aerospace Engineering at Princeton University in 1981. Promoted to Full Professor in 1991, he was Chairman of the department from 1998 to 2004 and from 2007 to 2014. Dr Smits' interests are centred on fundamental experimental research in turbulence and fluid mechanics. In addition to turbulent wall-bounded flows, particular interests are: the fluid mechanics of swimming and bio-inspired propulsion; sports ball aerodynamics; wind turbine aerodynamics; and the development of new and improved measurement techniques. Dr Smits is a Member of the US National Academy of Engineering, Fellow of the American Academy of Arts and Sciences, Fellow of APS, AIAA, ASME, and AAAS. He has received the AIAA Fluid Dynamics Award, ASME Fluids Engineering Award, APS Fluid Dynamics Prize and the IUTAM George K Batchelor Prize in Fluid Mechanics. He has been Editor-in-Chief of the AIAA Journal since 2015. Dr Smits holds two patents on testing the aerodynamics of golf balls.

Mr Tom Williams FRAeS

Former Chief Operating Officer of Airbus

Mr Williams is admitted to Honorary Fellowship in recognition of his distinguished career in the aerospace industry.

During a career that took him from the shop floor to the Board of the second largest commercial aircraft manufacturer in the world, Mr Williams has helped to shape the UK and global aerospace industry into what it is today. He has had a major impact on every Airbus aircraft programme over the past 20 years, creating and sustaining thousands of jobs. During his time as Chief Operating Officer of Airbus he managed to increase the aircraft delivery rate by more than 25% in response to global demand. He also conceived and oversaw the innovative developments in aerostructures and engine technologies that led to the A320neo aircraft. Mr Williams completed an apprenticeship with Rolls-Royce in 1972 and started working on the RB211 programme. Subsequent moves took him to manufacturing engineering and management roles in GEC Marconi, Cummins Engines, Shotts Diesel Engines and Pilkington Optronics. He joined British Aerospace at Prestwick as General Manager Regional Aircraft in 1997, before moving to the Eurofighter programme at Warton. In 2000 Mr Williams became the Managing Director of Airbus operations in the UK, heading the team that developed the A380 wing. After subsequent posts in Airbus, he became the Chief Operating Officer of Airbus Commercial Aircraft in 2015. Mr Williams has an MBA from Glasgow University and an honorary PhD from the University of the West of England. He has been awarded the Legion d'Honneur and a CBE.



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Honorary Companionship

Awarded for rendering distinctive and notably meritorious service to the aerospace profession. This honour is conferred on those whose professional achievements may not be exclusively in aerospace, or may be in some way unconventional, but who have, nevertheless, made a distinctive and notably meritorious contribution to the aerospace profession.

The Honourable Jeffrey Shane

General Counsel of the International Air Transport Association (until June 2020)

The Honourable Jeffrey Shane is admitted to Honorary Companionship in recognition of his distinguished career as one of the world's leading aviation lawyers.

Mr Shane is a graduate of Princeton and Columbia Law School. He is internationally recognised for his role in establishing an Open Skies policy for the United States, leading to a global air transport system largely driven today by competition and consumer benefit. He was also an early champion of the 'NextGen' transformation of the US air traffic control system, the acceleration of GPS modernisation and other technology initiatives to enhance the safety, security and efficiency of aviation and other modes of transportation. He served as General Counsel of the International Air Transport Association (IATA) for more than seven years, retiring at the end of June 2020. Earlier in his career Mr Shane held three Presidential appointments in the US Department of Transportation (DoT), including Under Secretary for Policy from 2003 to 2008. In addition to other senior positions at DoT, he was Deputy Assistant Secretary of State for Transportation Affairs for four years, where he served as chief aviation negotiator. Mr Shane practiced law in Washington for 14 years at two major international law firms. He currently sits on advisory boards at NASA and the FAA. In 2007 he was elected President of the Triennial Assembly of the International Civil Aviation Organization. He has also served as Chairman of the Commission on Air Transport of the Paris-based International Chamber of Commerce, Chairman of the Military Airlift Committee of the National Defense Transportation Association, Chair of the American Bar Association's Forum on Air and Space Law and President of the International Aviation Club of Washington. He taught for four years as an Adjunct Professor of Law at Georgetown University. He is a member of the District of Columbia Bar.

Mr Idris Ben-Tahir MRAeS

Information Scientist and former Public Servant

Mr Ben-Tahir is admitted to Honorary Companionship in recognition of his many varied contributions to the Canadian aerospace community.

Mr Ben-Tahir has completed more than 50 years public service in Canada, including 28 years as an officer in the Royal Canadian Air Force (RCAF) Primary Reserve. He holds a BA degree from the University of Ottawa and an MSc in Information Science from Lehigh University, Pennsylvania. His research on how scientific meaning changes over time has significantly impacted how aerospace is represented and taught in Canada and the United States. His varied career has embraced roles at Air Transport Command HQ, the Aerospace Engineering Test Establishment at Cold Lake, the staff of the Chief of the Air Staff and the National Research Council. He is recognised as having played a part in enhancing the diversity of the Canadian Forces, having forged a bond between the Canadian Muslim community and the Canadian Forces through his involvement in Operation Maple Crescent. In 2019 Mr Ben-Tahir was awarded the Canadian Aeronautics and Space Institute's 'Above and Beyond' Award, becoming only the second person to receive the award in the Institute's 65-year history.





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RAeS Medals

RAeS Silver Medal

Awarded for major contributions to the advancement of aerospace art, science and engineering.

Dr Alice Bunn FRAeS

International Director at the UK Space Agency

Dr Bunn is awarded the Society's Silver Medal for her significant personal contribution to developing and implementing UK Space policy which has generated important economic benefits for the sector.

As International Director she is responsible for security, regulatory, statutory, communications and international engagement. She heads the UK Delegation to the European Space Agency (ESA) and is Vice-Chair of the ESA Council. After completing a PhD in metallurgy at Darwin College, Cambridge, Dr Bunn was a Researcher and Exhibition Developer at the Science Museum, before moving to the Natural Environment Research Council where she was Head of Earth Observation Future Missions. She joined the UK Space Agency in 2012, initially as Head of Earth Observation Strategy. Dr Bunn sits on the Board of the US Space Foundation and is Co-Chair of the World Economic Forum Future Council on space technology. She is a Council Member of the Royal Aeronautical Society.





Dr Ashitey Trebi-Ollennu

Deputy Chief Engineer, Autonomous System Division, NASA Jet Propulsion Laboratory

Dr Trebi-Ollennu is awarded the Society's Silver Medal for his major contribution to the successful development and delivery of the InSight Mars Mission Instrument Deployment System. This enabled the first robotic deployment by NASA of a seismometer on another planet.

Dr Trebi-Ollennu joined the NASA Jet Propulsion Laboratory at the California Institute of Technology in 1999. Since then he has been at the forefront of space robotics systems, comprising autonomous manipulation, artificial intelligence, human robot interfaces, planetary rover operations, system of system design, flight systems integration and test, and space robotics mission concepts. He received a Bachelor of Engineering degree from Queen Mary, University of London and a PhD from The Royal College of Military Science, Cranfield University. Dr Trebi-Ollennu was awarded the 2019 NASA Exceptional Public Achievement Medal for contributions to the InSight Mars Lander mission and the 2008 NASA Exceptional Engineering Achievement Medal for his contributions to the Mars Exploration Rover mission. He received the RAeS Specialist Silver Award in 2010. He is a Fellow of the Institution of Engineering and Technology, and a Fellow of the Ghana Academy of Arts and Sciences.

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RAeS Bronze Medal

Awarded for notable contributions to the advancement of aerospace art, science and engineering.

Mr Edward Anderson MRAeS

Senior Technology and Resilience Specialist for the World Bank Group

Mr Anderson is awarded the Society's Bronze medal for his work to demonstrate the transformative potential of unmanned aerial systems (UAS) in East Africa.

Mr Anderson's career is focussed on the use or air and space technology for sustainable development and to create greater resilience in African economies. Based in Tanzania, he led the creation of the African Drone Forum. This is a regional platform to accelerate the deployment of safe, equitable and pro-poor autonomous services in Africa. The Lake Victoria and Lake Kivu Challenges, that he organised, were practical flying demonstrations in front of government regulators, industry leaders, entrepreneurs and other professionals, of the potential of UAS to help sustainable development in Africa. He has a Master of Aerospace Engineering Degree from Bristol University and a Master of International Relations degree from Johns Hopkins University and he holds a Private Pilot Licence.

Mr Greg McDougall

Founder and Chief Executive Officer of Harbour Air Group, Canada

Mr McDougall is awarded the Society's Bronze Medal in recognition of his commitment to Green aviation. This is exemplified by the flight of the world's first fully electric commercial aircraft - a de Havilland DHC2 Beaver powered by a magniX 750 horsepower electric motor - in December 2019.

Born in California to Canadian parents, Mr McDougall spent every summer in British Columbia. This early exposure to the coast gave him a taste of aviation. He earned his Private Pilot Licence in 1977 and started his own airline, Harbour Air Ltd, in 1982. Harbour Air quickly grew from a two-plane, charter-only operation to what it is today; North America's largest all-seaplane airline that services over 500,000 passengers per year on scheduled services and tours using a fleet of over 40 seaplanes. Harbour Air became North America's first carbon-neutral airline in 2007 and aims through the ePlane project to become carbon-zero. To this end, Harbour Air has partnered with magniX, the electric motor company. Having flown the world's first commercial electric flight on 10 December 2019, Mr McDougall plans to work with regulators to convert the entire Harbour Air fleet to electric propulsion. Mr McDougall has 12,000 hours logged as a pilot. He has received many national and international awards and, in 2019. he was inducted into the Canadian Aviation Hall of Fame.

Mr Ian Walters

Airbus UK Project Manager for the Solar Orbiter Mission

Mr Walters is awarded the Society's Bronze Medal for his inspiring leadership of the Airbus team making the Solar Orbiter spacecraft.

The Solar Orbiter spacecraft was successfully launched on a joint ESA and NASA mission in February 2020 and is now performing perfectly. Solar Orbiter is one of the most challenging science mission spacecraft ever built. Among the technical challenges, the craft's complex instruments need to operate autonomously in temperatures of more than 600 degrees Centigrade as they observe the Sun from the closest proximity to date, inside the orbit of Mercury. Ian Walters has worked for Airbus since 1982. He has previously held positions of Chief Technical Officer for Galileo Industries, the company responsible for developing the Galileo Navigation System for the European Union, and Airbus Vice President for Navigation Systems in Munich. He was also Engineering Manager for the Rosetta Platform and Project Manager for the James Webb Space Telescope Mid-Infrared Instrument.









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Team Silver Medal

Awarded for major contributions to the advancement of aerospace art, science and engineering.



Aircraft Fuel Tank Component Design Team

The Aircraft Fuel Tank Component Design Team is awarded the Society's Team Silver Medal for the application of the novel Elemental® computational fluid dynamics (CFD) software to deepen the understanding of complex aircraft slosh loads and as such achieve significant reductions in manufacturing cost to the largest selling Airbus A320 aircraft. This has made a major international impact in aircraft design.

The team involved members of the Industrial Computational Fluid Dynamics Research Group from Airbus UK and members of the University of Cape Town (UCT). Managing the project on the Airbus side, Francesco Gambioli, Expert for Wing Component Loads, worked closely with the UCT group over a period of two months. The UCT team working on Elemental consisted of Dr Leon Malan, Principal Scientific Officer; Professor Arnaud Malan, SARChI Chair in Industrial CFD; and post-graduate students Niran Ilangakoon and Bevan Jones. The novel CFD software was instrumental to the project; the use of highly innovative Elemental CFD analysis was the key enabler for the implementation of the modification and minimisation of stress design work.

HTX Team

The HTX Team is awarded the Society's Team Silver Medal for the successful demonstration of a High Temperature Heat Exchanger (HTX) capable of quenching the heat from intake air for an engine operating at Mach 5 equivalent conditions. This is a breakthrough which makes air breathing engines capable of full operability at hypersonic speeds feasible and makes reusable space planes possible. This was a remarkable test campaign by a highly motivated team who used their deep understanding of the physics and engineering of the system to prove the viability of operating air breathing engines from zero to speeds far in excess of any aircraft to date.

The HTX team, led by Dr Helen Webber, is a wide collaboration of key functions and departments across Reaction Engines Ltd including performance and aerodynamics, mechanical design, and technicians. The team also incorporates the design and test engineers of its US division, Reaction Engines Inc, who built and ran the hot air supply in Denver Colorado. Also integral to the project were teams from BAE Systems, that were instrumental in the hardware commissioning phase, and a team from Airborne Engineering, that delivered the control and instrumentation system.





Space Fence Delivery Team

The Space Fence Delivery Team is awarded the Society's Team Silver Medal for the successful development of a pioneering space surveillance radar system in the remote Marshall Islands. The radar system simultaneously detects, tracks and catalogues satellites, and debris in all orbital regimes using a state-of-the-art element-level digital beam forming radar with solid state technology and advanced software. Space Fence has enabled a step-change in Space Domain Awareness, providing greatly enhanced data on objects that could threaten both manned and unmanned military and commercial space assets. The introduction into service of Space Fence represents a major engineering feat that will benefit the international space community and global economy.

Lockheed Martin Space Fence Program Manager, Mr Robert Condren, joined the program in the initial concept phase during early program start-up and has been focused on driving contract execution and management process discipline throughout the program. While more than 2,000 Lockheed Martin employees were engaged in the program. several key members were critical to program success and deserve special recognition. The technical efforts benefited from a strong Chief Engineer, Mr Peter Hack, and three dedicated engineering leaders Mr Joseph Haimerl, Ms Maureen Bradley, and Mr Gregory Fonder, who are all Lockheed Martin Fellows, the pinnacle of the engineering and technical staff within the corporation. Overall project success was also due in great part to the dedicated support from a Certified Lockheed Martin Master Black Belt. Mr Thomas Jackson, who drove Program Excellence and Affordability initiatives.

Team Bronze Medal

Awarded for notable contributions to the advancement of aerospace art, science and engineering.

P-8A Delivery Team

The P-8A Delivery Team is awarded the Society's Team Bronze Medal for delivering on time and to the highest standard the necessary technical airworthiness and safety arguments required to support the introduction to service of the new P-8A Poseidon MRA Mk1 maritime patrol aircraft with the Royal Air Force in October 2019. This reinstated the UK's indigenous airborne maritime patrol capability that had been lost when Nimrod went out of service in 2010. While such work cannot be considered new having been carried out on several previous occasions by the UK MoD Defence Equipment & Support (DE&S) branch, what makes this particular achievement stand out is the manner in which it was done making extensive use, for the first time, of 'mutual recognition' arrangements between the Military Aviation Authority and its US counterpart.

Group Captain Simon Joy, the Type Airworthiness Authority and an RAF Engineering Officer within Defence Equipment and Support, UK MoD, led the airworthiness and safety effort. From within the MoD, key leadership and team members included Martin Hearn, Damian Boreham, Wing Commander Richard Osselton, Wing Commander Richard Long, Julian Pennington, Squadron Leader Al Reid, Mark Burleigh, Peter Miller, Joshua Panikkar, George Revill,



Duncan Blackwell, Squadron Leader Chris Long, Squadron Leader Georgie Mann, Flight Lieutenant Joseph Bell, Chief Technician David Hurst and Roger Hartill. Key specialist technical support was provided by James Norris, Nigel Higgins, Dan Blogg, David Fitzjohn and Jim McLeod. The effort would not have been made possible without the dedicated support of many others but particularly Ciara Meadows, Nick Cotroneo and David Nelsen from the United States Navy NAVAIR team.

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Team Phoenix

Team Phoenix is awarded the Society's Team Bronze Medal for the first large-scale achievement of variablebuoyancy propulsion, demonstrated in flight trials of a large (15m-long, 10m-wingspan) autonomous unmanned air vehicle. The vehicle made multiple test flights, transitioning repeatedly between heavier-than-air and lighter-than-air flight to move without conventional propulsion. The mildlybuoyant, helium-filled Phoenix did this by inhaling and compressing air within an internal bladder to make it heavier than air, and exhaling that compressed air to return to lighter than air. The energy required to power the pumps, valves, flight controls, and flight-control system was supplied by a battery recharged by solar cells. Team Phoenix was a wide-ranging partnership across academia and industry, including several SMEs. The team was led by Phil Hollis of the Centre for Process Innovation (CPI). The partners were: Gary Owen and David Banks from Banks Sails; Andrew Johnson and Stuart Edwards from IQE; Laura Foord, David Curd and Robert Dams from Stirling Dynamics; Adam Hampton from TCS Micropumps; Phil Hollis and Alf Smith from CPI; Morgan Williams, Ian Thompson and George Fearnall from the Manufacturing Technology Centre; Leah Rider from the National Composites Centre; James Kratz and Lourens Blok from the University of Bristol; Andrew Rae from the University of the Highlands and Islands; Keith Scott from the University of Newcastle; Robert Howells from the University of Sheffield; Andy Cruden and Robert Wills from the University of Southampton.

Team Specialist Award



UAVaid Team

The UAVaid Team is awarded the Society's Team Specialist Award for demonstrating outstanding sector leadership and technical achievement in the field of Unmanned Aviation in Humanitarian and Development Settings. This was achieved through the technical research, design and development of the multi-role 'Hansard' UAS platform and its subsequent successful flight programme in Malawi in 2019 where it was integrated into three separate public/NGO services in a single day. This achievement is believed to have set a number of 'world firsts' that tackle the technical, logistical and social barriers to accelerating and supporting the scaling up and practical application of 'drones' to assist those most in need.

UAVaid Ltd was founded in 2014 by brothers Daniel Ronen and James Ronen, to develop UAS technology to overcome the logistics challenges faced by remote communities in difficult to reach areas of the developing world. The internal (UK) UAVaid team was supplemented by external consultants who became integral to the project: Miguel Gomez, UAV Systems Development; Daniel Fernandez, Systems Integration Development; Paula Goncalve, UAV Pilot and Flight Engineer; Helder Madail, UAV Pilot and Flight Engineer; David Ferson, Logistics and Deployment Support; Jolyon Walker, Aerial Delivery Specialist; and William Longley, Prototype Designer and Engineer. In Malawi 2019, the operations deployment team successfully pushed the envelope of unmanned aviation by integrating the drone into three separate public services in a single day, performing three different functions, for three different applications; NGO mapping; medical delivery; and antipoaching surveillance.

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Sir Ralph Robins Medal

The Sir Ralph Robins Medal was commissioned in 2019 to celebrate Sir Ralph Robins' distinguished career and to encourage engineering leadership. It is awarded to a mid-career engineer who has demonstrated excellent engineering leadership in an aerospace project.

Dr Helen Webber

Engineering Project Lead - HTX Team at Reaction Engines Ltd

Dr Webber is awarded the second Sir Ralph Robins Medal for Engineering Leadership. She has been a key member of the Reaction Engines team since its very early days. She was responsible for delivering the HTX design, build and test programme; the first Mach 5 equivalent ground-based demonstration of a SABRE engine pre-cooler. Dr Webber lead the design and build of a pre-cooler capable of surviving air temperature gradients of 850K, air inlet temperatures of up to 1,250K and tube wall temperatures of 950K, together with the necessary ancillary equipment needed to demonstrate the cooler's successful operation at scale. She is currently responsible at system level for the engineering leadership and technical solution of the fully integrated SABRE Core Engine Ground Demonstrator (DEMO-A), which will be the first demonstration of the SABRE Core Helium Power Loop with Liquid Hydrogen heat rejection.



Dr Webber graduated with a First-Class MEng in Aeronautical Engineering with Study Abroad from the University of Bristol in 2004. In 2011 she completed a PhD in Aeronautical Engineering 'Compact Heat Exchanger Heat Transfer Coefficient Enhancement' also at the University of Bristol and sponsored by Reaction Engines Ltd. This forms much of the company's understanding of heat transfer across thin wall tubes for differing configurations and flow conditions. Dr Webber has proven to be an outstanding leader, coaching and mentoring her team members to fuse them into a high performing unit that has delivered world firsts and put Reaction Engines at the forefront of high-speed aerospace propulsion. In parallel, she has acted as an outstanding exemplar for young engineers, giving generously of her time to promoting STEM in schools and colleges.

Civil Cadet Pilot Award

The Civil Cadet Pilot Award is a new award introduced in 2020 to recognise a graduating *ab-initio* commercial cadet pilot who, during their training, has demonstrated notable achievement and or potential, and who has inspired their peers. One award will be made each year and the award is open to any *ab-initio* cadet pilot graduating from an Approved Training Organisation (ATO) anywhere in the world in the previous calendar year. Nominations must be made by the ATO from which the cadet graduated.



Mr Gianluca Vecchio

First Officer, Ryanair

The Civil Cadet Pilot Award is conferred on First Officer Vecchio as he is a role model for those who aspire to a career as an airline pilot but do not have the funds readily available. He has demonstrated that someone who is determined and prepared to work hard can become an airline pilot even if they are not rich. Mr Vecchio started his flight training with Bartolini Air in June 2015 and finished in March 2019. He completed all his skill tests with overall grade of 'outstanding'. Throughout his training he was exceptionally dedicated and focused. At the same time, he helped other students and was respectful towards his instructors and tutors.

Mr Vecchio is from an Irish-Italian family and his logical career path was in the family catering business. However, his dream of becoming a pilot was sparked by the experience of flying to Italy on family holidays to visit relations there. Initially he worked in the family business to build up the funds needed for pilot training. Matters outside his control delayed his entry to pilot training, but hard work and a positive attitude enabled him to graduate successfully. Within four weeks of finishing his flight training he had received the good news that he had passed cadet pilot assessment with Ryanair. He has already completed the Type Rating Course and Line Training.

Specialist Awards

The Society's Specialist Awards are conferred on individuals or teams working in a formally recognised or otherwise well-established professional discipline. The awards recognise advances, innovation, excellence and long or meritorious service that has had a significant impact within the discipline in advancing aerospace art, science and engineering.

Roger Green Medal for Human Factors



Dr Peter Hancock FRAeS

Pegasus Professor, Provost Distinguished Research Professor, University of Central Florida

Dr Hancock is awarded the Roger Green Medal for his significant and continued contribution to Human Factors research and practice in aviation and other domains including defence, healthcare and road transport. His work has covered a wide range of important topics such as automation, mental workload, vigilance, situation awareness, fatigue, error, accident analysis and prevention, and work design. He has authored over 700 peer reviewed scientific articles and has co-authored over 20 books. This body of work has served to advance the discipline of Human Factors by providing new theories, such as situation awareness, and new measures of human performance, such as cognitive workload.

Professor Hancock is currently Provost Distinguished Research Professor in the Department of Psychology and the Institute for Simulation and Training at the University of Central Florida. Prior to his current position he founded and was the Director of the Human Factors Research Laboratory at the University of Minnesota where he held appointments as Professor in the Departments of Computer Science and Electrical Engineering, Mechanical Engineering, Psychology, and Kinesiology as well as at the Cognitive Science Center and the Center on Aging Research. He continues to hold an appointment as a Clinical Adjunct Professor in the Department of Psychology at Minnesota. He is also an affiliated Scientist of the Humans and Automation Laboratory at the Massachusetts Institute of Technology, a Research Associate of the University of Michigan Transport Research Institute and a Senior Research Associate at the Institute for Human and Machine Cognition in Pensacola, Florida.

Flight Operations Medal

Captain John Cox FRAeS

Chief Executive Officer of Safety Operating Systems

The Flight Operations Medal is conferred on Captain Cox for his contribution to aviation safety and, in particular, his major work in rewriting the influential SAFITA (Smoke and Fire in Transport Aircraft) documents.

Captain John Cox is a 50-year aviation veteran with experience as a corporate pilot, airline pilot, instructor, test pilot and safety professional. In 2005, he retired from US Airways after 25 years and 14,000 flying hours to found Safety Operating Systems, which has grown into a dynamic company with clients worldwide including airlines, business flight operations, legal firms, manufacturers and government regulators. He holds an MBA from Daniel Webster College and is a graduate of the University of Southern California's Aviation Safety Program. Since 2006 he has been an instructor in aviation safety at the University of Southern California. He is a Fellow of the Royal Aeronautical Society and a member of the Flight Operations Group, a Liveryman in the Honourable Company of Air Pilots, a Certified Registered Safety Professional and a member of the International Society of Air Safety Investigators. For the past 13 years he has been the aviation analyst for NBC, MSNBC, CNBC and the Weather Channel. He regularly appears in the news media worldwide regarding aviation safety. Captain Cox also writes the weekly column 'Ask the Captain' for *USA Today*'s website.



R P Alston Medal

Awarded for practical achievement associated with the flight testing of aircraft.



Mr Ben Lewis

Deputy Chief Test Pilot for Boeing Defence UK

Mr Lewis is awarded the R P Alston Medal for his leadership of the military and industry flight test teams for RAF Chinooks for the past ten years and, more recently, leadership of flight test for the global Chinook baseline aircraft. His leadership of Chinook test programmes has been crucial to delivering safety and capability enhancements to a globally successful helicopter.

Mr Lewis is a graduate of the Experimental Test Pilots School and has been an Experimental Test Pilot with Boeing Test and Evaluation for the past five years. He joined the company after serving 20 years in the Royal Navy as an Amphibious Battlefield Helicopter Pilot. With a true passion for capability development he has spent the past decade testing Chinook helicopters in the UK and USA, leading and supporting numerous test programs, including: flight control system, high altitude, heavy weight, new rotor blade, defensive aid suite, embarked deck landing, simulator development, cockpit development and envelope expansion. • • • • • •

Geoffrey Pardoe Space Award

Dr Jonathan McDowell

Author - Jonathan's Space Report

The Geoffrey Pardoe Space Award is conferred on Dr McDowell for providing, free and online, the world's most authoritative unclassified source of information on all space launches, together with occasional context-setting overviews, which has become the go-to source of this information. This is used by space professionals and amateurs and is an indispensable tool for journalists and policy makers interested in space. This report has been issued about twice a month for the past 20 years. He also provides analysis of satellite constellations and series, space debris, compendiums of specific types of space vehicles including classified programmes based on unclassified sources and end of year summaries of space activities.

Dr McDowell read mathematics at Churchill College, Cambridge (1981) followed by a PhD in astrophysics at the Institute of Astronomy, Cambridge University. Since then he has worked primarily in the USA at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts, where he is currently Group Leader, Chandra X-ray Center Science Data Systems. He has published many scientific papers on astrophysics as well as many papers on space policy and space history. The main-belt asteroid '4589 McDowell' was named after him in 1993.



Turnbuckle Award



Mr Danny Wright

KC-46/767 Chief Mechanic, Boeing Commercial Airplanes

Mr Wright is awarded the Turnbuckle Award for significantly influencing the design of the KC-46 Tanker for maintainability, through enhancements in accessibility, maintenance simplification and safety. During early aircraft design, key decisions are made which can either improve or degrade the ease of maintenance over the entire life of the fleet. As the Boeing Company's Chief Mechanic for the 767 fleet, Mr Wright expanded his span of control to add the new KC-46 Tanker to his aircraft portfolio. His presence was felt immediately on the program. Throughout the design, development and testing phase of the KC-46, he affected the design of 253 of 731 program trade studies.

As KC-46 Chief Mechanic, Mr Wright is responsible for ensuring airplane maintainability, reliability and operational standards are developed and adopted during design development and throughout the lifecycle of the program. Prior to his employment at Boeing, he worked for Delta Airlines as a licensed Aviation Maintenance Technician for 16 years, working on both heavy maintenance checks and line maintenance. He also served eight years in the United States Air Force as a C-130 Heavy Maintenance Inspector, Aircraft Systems Instructor and Dedicated Crew Chief. Mr Wright holds an FAA Airframe and Powerplant License and a Bachelor of Science degree in Aeronautics from Embry-Riddle University.

Individual Specialist Awards

Flt Lt Ian Brosch

Pilot Instructor, XXIV Squadron RAF

Flight Lieutenant Brosch receives an Individual Specialist Award for his work in developing and delivering advanced capabilities for the A400M platform in support of UK interests and specifically for his outstanding work in developing search and rescue procedures. He is an A400M instructor with Number XXIV Squadron, the Air Mobility Operational Conversion Unit. With an extensive background in Tactical Air Transport, he was given the responsibility for taking nascent aircraft clearances from test and evaluation units and transforming those clearances into meaningful capabilities, delivering highly effective training as a result. His work has enabled crews to operate the aircraft in complex tactical scenarios, to conduct essential military tasks in nonpermissive operational environments and to provide Search and Rescue cover for the Typhoon force in the Falkland Islands.

Flight Lieutenant Brosch joined the Royal Air Force in 1989 and served initially as a fast jet pilot. In 2000 he transferred to multi engine aircraft, serving with 47 Sqn from 2001-2009 flying the C-130K Hercules. During this time, he deployed multiple times to operational theatres including the invasion of Iraq in 2003. He was privileged to conduct an exchange tour with the USAF 15th Special Operations Squadron in Hurlburt Field Florida from 2010-2014, flying the MC-130H. During this tour he flew more than 100 combat air drops and helped to bring the high-speed CDS airdrop system into service. In 2014 he returned to the UK and qualified on the A400M Atlas. Since then he has worked as a tactical development pilot instructor on XXIV Squadron.

Dr Jack Marlow

Engineering Manager, Skyrora

Dr Marlow receives an Individual Specialist Award for being responsible for the development of the fully 3D-printed lightweight 3.5kN rocket engine and, in-turn, advancing the technological boundaries of astronautical engineering capabilities. The engine is the first fully 3D-printed bi-liquid rocket engine to be tested in the UK. Furthermore, the engine is compatible with Ecosene, a fuel manufactured in-house by Skyrora using waste plastic. Fully 3D-printing an engine allows for a reduced number of parts, more complex structures and a wider range of raw materials for manufacture. The creation and development of this engine is pivotal in developing advanced technology and manufacturing. The engine represents new feats in light-weight technology with a focus on the environment.

Dr Marlow is a Charted Engineer who completed his BEng in Aerospace and Astronautical Engineering, and his PhD and post-doctorate research at Kingston University, where his research focused on vortex cooling of liquid rocket engines. He started his career lecturing at Kingston University, while continuing research into lowcost propulsion, before joining Skyrora, a private launch vehicle company, as Propulsion Lead in 2018. He currently serves as the Head of the Engineering Department, where he oversees all ground and space segment technical activities.





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Dr Alan Nelson

Business and Technology Consultant in South Africa

Dr Nelson receives an Individual Specialist Award for his untiring efforts towards youth development in aviation studies and aviation awareness for previously disadvantaged learners by the establishment of a High School for Aerospace Science in the Western Cape of South Africa. His research done in the Cape Metropolis Precinct over the period 2014-2017, revealed two major findings: first, that there are critical shortages of skilled aviation practitioners in the Western Cape and, arguably, the whole of South Africa; second, that there is no basic education syllabus or, where there is a syllabus, no provision for aviation studies. Over the past two years, and at personal cost, Dr Nelson convinced local government to re-image technology into the High School curriculum, by the introduction of aviation studies and a STEM syllabus. The school will open in the Stellenbosch Airfield vicinity in January 2021. Dr Nelson will drive the project for the foreseeable future.

Dr Nelson is a business and technology consultant in the South African electronics industry. Earlier in his career he was an Avionics Engineer in the South African Air Force, later working in the electronics private sector. He has devoted the past 25 years to youth development in the Western Cape, mainly focussing on previously disadvantaged learners. For this, he was awarded the 2019 Paul Harris Fellowship by Rotary International. He is a founding member of the Young Falcon's Air Academy, a joint initiative between the South African Air Force and a group of aviation enthusiasts, to create aviation awareness among High School pupils. The success of that programme, and his passion for aviation and youth, inspired him to do an opportunity study, to determine the need to re-image aviation technology into the South African High School academic curriculum.

Mr Peter White

Director and Bodmin Airfield Events Organiser, Cornwall Flying Club

Mr White receives an Individual Specialist Award for using his expertise in aviation and his outgoing personality to educate and enthuse thousands of people of all ages over many years. He spends many hours of his own time and money visiting clubs and groups around the UK to undertake these tasks. As Bodmin Airfield Events Organiser he works tirelessly to make flying available to everyone. Mr White founded a charity, Feet Off the Ground, which gives disabled and disadvantaged young people the opportunity to enjoy the thrill of flying. The Scout Aerocamp was a concept that he pioneered and this has enabled hundreds of young people over the years to fly and to gain their aviation badges. Schools, colleges and many organisations catering for the disabled are especially grateful to him for his efforts to get them all airborne. As a Director of Cornwall Flying Club, he organises half a dozen major fly-ins each year, supporting groups like Help4Heroes with his Military Wings & Wheels Day.

Mr White's childhood passion and love of aviation led him to attaining his PPL and it was evident that he wanted to share this passion. His aviation career was in avionics, developing 'blind landing systems'. He then split from aviation until he moved to the South West where, in 1990, he gained his Private Pilot's Licence at Bodmin airfield. In 1992 he bought an Aeronca aircraft which he still operates as a syndicate with six other members. He formed 'The Aeronca Club', which became a Light Aircraft Association Type Club and that is still going strong under his leadership. Mr White is a committee member of the organisation Youth Education Support.



Young Persons' Awards

The Society confers additional awards recognising achievements by young people, both individuals and teams.

Young Persons' Achievement Award

Awarded to a young person or team for exceptional achievement or promise in aerospace.



Mr Nick Goss

Project Engineer GKN

Mr Goss is awarded the Young Persons' Achievement Award in recognition of the way in which he has driven positive change in the UK aerospace industry while still early in his career, through playing an integral role supporting major sector initiatives as part of Aerospace Growth Partnership and Women in Aerospace and Aviation Charter.

Mr Goss joined GKN Aerospace in 2013 as an Engineering Apprentice, spending four years completing a variety of placements through the Bristol business. Having completed his apprenticeship, he graduated as a Technology Project Engineer, responsible for the development of manufacturing and inspection methods to improve the competitiveness of the business. He subsequently spent two years on secondment to the Aerospace Growth Partnership, working with senior stakeholders across the UK Aerospace industry and Government on skills policy, before moving to lead the team of industry secondees. Mr Goss has now moved to the GKN Aerospace Portsmouth facility as a lead project engineer.

Young Persons' Achievement Commendation

Awarded to a young person or team for notable achievement or promise in aerospace.

Mr Alexander Bowen-Rotsaert

Systems Engineer Boeing Defence Australia.

Mr Bowen-Rotsaert is awarded a Young Person's Achievement Commendation in recognition of his efforts with the 2019 Australian Industry and Defence Network Young Achiever Award and 2019 International Astronautical Federation Emerging Space Leader Award.

Brisbane born and raised, he received his Mechanical and Aerospace Engineering honours degree from the University of Queensland. Since joining Boeing in 2014, Mr Bowen-Rotsaert has developed communications systems and has led system testing campaigns both in Australia and abroad. He is the Treasurer of the RAeS Queensland Branch and Vice-President of Space Design Competitions Australia.





Mr Hayden Jakes

Nottingham University

Mr Jakes is awarded a Young Persons' Achievement Commendation in recognition of his winning the Gold Medal in the Aircraft Maintenance Skill at the World Skills International at Kazan 2019.

Mr Jakes completed an Advanced Apprenticeship with Marshall Aerospace and Defence Group in Aeronautical Engineering in 2017 which lead to the early stages of the World Skills Competition. He is now studying for BEng (Hons) in Aerospace Engineering at the University of Nottingham. He is a member of the East Midlands Universities Air Squadron and after graduating he hopes to join the RAF and train to become a Test Pilot. • • • • • •

Corporal Ben Massey ARAeS

Co-founder Stratobooster

Corporal Massey is awarded a Young Persons' Achievement Commendation in recognition of his work in co-founding Stratobooster, together with his involvement with the RAF STEM hub and RAFX Innovation hub.

Having gained a BEng in Aerospace Engineering Corporal Massey then completed an MSc in Project Management from Teesside University. During his second year of undergraduate studies, he co-founded a novel space launch company called StratoBooster, with the aim of using rockets and balloons to launch payloads into low-earth orbit, with many successful tests to date. As an RAF reservist, his work has also given him the opportunity to be involved in RAF Leeming's 'RAFX Innovation Hub', helping to push Project ASTRA, conducting tests, and giving presentations to senior Air Staff.



Herbert Le Sueur Award

Awarded to a young person whose studies will be enhanced by attending a UK or European conference with at least some content related to rotary-wing or fixed-wing aircraft safety.



Dr Mushfiqul Alam MRAeS

Senior Research Associate at University of Liverpool

The Herbert Le Sueur Award for 2020 is given to Dr Mushfiqul Alam in recognition of his research into novel systems to increase safety during helicopter autorotation.

Dr Alam has a BEng degree from the University of Liverpool, an MSc from Lulea University of Technology, Sweden and a PhD from the Czech Technical University in Prague. He is conducting research on flight dynamics and guidance with the aim of developing a series of visual, auditory and haptic sensory cues to allow helicopter pilots to perform the emergency helicopter autorotation manoeuvre safely and reliably throughout the flight envelope. Piloted flight simulation tests of the cueing techniques at Liverpool's HELIFLIGHT-R full-motion simulator demonstrated the potential to offer a significant enhancement in safety throughout the rotorcraft industry. The research work is conducted in close collaboration with School of Engineering, Georgia Institute of Technology, USA primarily funded by The US Army Aviation and Missile Research Development and Engineering Center.

Alan Marsh Award

Awarded to a young person showing technical promise, where five hours of rotary or fixed-wing flying tuition will enhance their career.

Ms Zoe Garstang ARAeS

Airworthiness Engineer BAE Systems

The Alan Marsh Award for 2020 is given to Ms Zoe Garstang.

Ms Garstang joined BAE Systems in 2016 as an Advanced Engineering Technical Apprentice after completing her GCSEs. Since undertaking rotational placements across areas of the business including Materials Engineering and F-35 Production, she now works as a Flight Safety Analyst within the Continued Airworthiness department to assure the product integrity of the Typhoon aircraft. Her responsibilities include the management of occurrence data and the review of in-service tasks. Ms Garstang is a passionate STEM Ambassador and the Young Persons Representative for the RAeS Preston Branch. She has also been recently elected to the RAeS Young Persons Committee.



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2019 Written Paper Prizes

The Royal Aeronautical Society Written Paper Prizes are awarded annually for the best papers published in *The Aeronautical Journal* by the Society during the previous calendar year. The Society recognises the achievements, innovation and excellence of both individual and multiple authors.

Gold Award

Awarded to J M Luckring for his paper titled 'The discovery and prediction of vortex flow aerodynamics'. The Aeronautical Journal, June 2019, Vol 123, No 1264, pp 729-804.

Dr James Luckring FRAeS

Dr Luckring is a senior research engineer at the NASA Langley Research Center. During his 46-year career he has conducted aerodynamic research studies of the behaviour of a wide range of fixed-wing concepts. He has authored and co-authored over 100 scientific publications for NASA, AIAA, SAE AGARD/STO and ICAS and has taught graduate level classes in aerodynamics. He is an Associate Fellow of the AIAA.



Silver Award

Awarded to J A Stockford, C Lawson and Z Liu for their paper titled 'The benefit and performance impact analysis of using hydrogen fuel-cell powered e-taxi system on A320 class airliner'. *The Aeronautical Journal*, March 2019, Vol 123, No 1261, pp 378-397.



Mr Jack Stockford MRAeS

Mr Stockford is a Lecturer in Aircraft Design at Cranfield University covering conceptual design, aircraft loading, airworthiness and landing gear design at postgraduate level. His research activities include both fixed and rotary wing configurations. He is the Honorary Secretary of Cranfield College of Aeronautics Alumni Association.

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Dr Craig Lawson FRAeS

Dr Lawson is a Senior Lecturer in Airframe Systems Design at Cranfield University where he lectures at postgraduate level. He was previously the Chief Systems Engineer and Flight Trials Commander of the DEMON UAV, a programme undertaken in collaboration with BAE Systems to demonstrate the first controlled flight in the absence of moving control surfaces. Dr Lawson has published more than 60 research papers during his career.

Mr Zihang Liu

Mr Liu graduated from Cranfield University in 2017 having completed the Aerospace Vehicle Design course. He is currently engaged in the maintainability design and analysis of the COMAC ARJ21, C919 and CR929 projects.



Silver Award

Awarded to P Janhunen, P Tolvanen and K Ruosteenoja for their paper titled 'Steam balloon concept for lifting rockets to launch altitude'. *The Aeronautical Journal*, May 2019, Vol 123, No 1263, pp 600-616.



Dr Pekka Janhunen

Dr Janhunen received his PhD in 1994. His main area of expertise has been numerical simulation techniques of space plasma physics including MHD and particle simulations but has also authored articles in other areas such as astrobiology and the origin of life. He invented Coulomb drag propulsion, which is applicable as the solar wind electric sail for interplanetary propulsion, and the ionospheric plasma brake for deorbiting satellites in low Earth orbit. Dr Janhunen's team at the Finnish Meteorological Institute is part of the Finnish Centre of Excellence in Research of Sustainable Space.

Dr P Tolvanen

Dr Toivanen earned his PhD at the University of Helsinki, Finland, in 1998 on magnetospheric plasma physics. He worked as a postdoc in 1999-2001 at the Laboratory for Atmospheric and Space Physics in Boulder, Colorado. After returning to Finland he has been working at the Finnish Meteorological Institute in various projects, especially on space propulsion. This work has mainly included Coulomb drag propulsion with application in both ionospheric plasma brakes designed for mitigating the space debris and solar wind-driven propulsion for electric solar wind sails. For these topics he has been engaged with the development of test Coulomb drag payloads onboard CubeSats of EstCube-1, Aalto-1, FORESAIL-1 and EstCube-2.



Dr K Ruosteenoja

Dr Ruosteenoja graduated in 1984 and finished his doctoral dissertation in 1989, both in Meteorology at the University of Helsinki. He worked as a research associate, research scientist and senior assistant at the University of Helsinki from 1982 to 2002, and as a research scientist at the Finnish Meteorological Institute since 2002. His main duty is elaboration of climate change scenarios for the future by utilising climate model data; for example, the impact of anthropogenic emissions on future temperatures, precipitation, humidity, solar radiation, wind climate and thermal growing seasons. In addition, he has popularised atmospheric science and climatology in Finland.

Bronze Award

Awarded to S Zelinski and R Windhorst for their paper titled 'Modelling and simulating airport surface operations with gate conflicts'. *The Aeronautical Journal*, January 2019, Vol 123, No 1259, pp 1-19.

Ms Shannon Zelinski

Ms Zelinski joined the NASA Ames Research Center's Aviation System Division in 2003 and has worked on a variety of research programmes in the field of Air Traffic Management. She has led programmes relating to dynamic airspace configuration and terminal area arrival/departure management. Ms Zelinski has published over 40 papers in the field of Air Traffic Management and is currently the Chief of the Aerospace High Density Operations Branch which supports research and demonstrations of advanced traffic management for commercial, UAV and Urban Mobility aviation.





Dr Robert Windhorst

Dr Windhorst works for the NASA Ames Research Center as an Aerospace Engineer where he investigates the impacts of future air traffic management concepts and technologies, specialising in guidance, optimal control, simulation, automation, scheduling, conflict detection/resolution and system dynamic behaviour. He has authored more than 40 journal and conference papers and is the Associate Editor of the *Journal of Guidance, Control and Dynamics*.

Bronze Award

Awarded to B Khandelwal, J Cronly, I S Ahmed, C J Wijesinghe and C Lewis for their paper titled 'The effect of alternative fuels on gaseous and particulate matter emission performance in an auxiliary power unit'. *The Aeronautical Journal*, May 2019, Vol 123, No 1263, pp 617-634.



Dr Bhupendra Khandelwal

Dr Khandelwal is currently an Associate Professor at the University of Alabama working in the field of fuels and combustion. Prior to this appointment Dr Khandelwal was an Assistant Professor at the University of Sheffield working in the Low Carbon Centre. He also holds a position of Visiting Assistant Professor at the Indian Institute of Technology Bombay in Mumbai.

Mr James Cronly

Mr Cronly is a Doctoral Researcher at the University of Sheffield from which he graduated in 2016. His undergraduate thesis dealt with matters relating to the pulse detonation engine configuration. His doctoral work is examining the role of the aromatic component of jet engine fuels and its contribution to particulate emissions.





Mr Ihab Ahmed

Mr Ahmed is a Research Associate working in the field of future gas turbine combustion at the University of Sheffield. He has worked on a wide range of topics relating to the effect of alternative fuels on combustion, emissions, seals, vibration and acoustics.

Mr Charith Wijesinghe

Mr Wijesinghe is a Doctorial Researcher at the University of Sheffield having previously completed BEng and MSc studies in Aerospace and Mechanical Engineering respectively, the latter resulting in a patent application relating to gas turbine emission measurement. His doctoral work investigates how fuels with a low aromatic component can influence combustor stability.





Mr Chris Lewis

Mr Lewis is a recognised world class expert in the field of aviation fuels and additives with a particular focus on gas turbine performance, reliability, airworthiness, and emissions. He is the Visiting Professor in Aviation Fuels at the University of Sheffield.

Bronze Award

Awarded to H Gesell, F Wolters and M Plohr for their paper titled 'System analysis of turbo-electric and hybrid-electric propulsion systems on a regional aircraft'. *The Aeronautical Journal*, October 2019, Vol 123, No 1268, pp 1602-1617.

Dr Hendrik Gesell

Dr Hendrik Gesell is a scientist in the Mechanical Engineering Department at the University of Wuppertal, Germany. He had previously developed and evaluated concepts for turbo-electric and hybrid-electric propulsion systems sized for regional aircraft while working at the German Aerospace Centre (DLR). At the University of Wuppertal his work is directed towards the efficiency of large-scale industrial processes for which he is making use of computerised fluid dynamics methods and creating numerical models.





Dipl-Ing Florian Wolters

Dipl-Ing Wolters received his degree in Aerospace Engineering from Stuttgart University in 2009 and has since been working at the German Aerospace Centre (DLR) in the field of gas turbine performance, simulation, emission evaluation and alternative fuels. His work is directed towards future propulsion concepts with a particular reference to fuel consumption and emissions.

Dr Martin Plohr

Dr Plohr studied Aerospace Technology at Aachen University and has since been working for the German Aerospace Centre (DLR) as a research engineer in the Engine Section of the Institute of Propulsion Technology. In this role he is primarily involved with modelling gas turbine engine cycle and emissions, but with a specific aim to better establish the relationship between engine design and fuel consumption/emissions. Dr Plohr supports Germany's contribution to the ICAO/CAEP activities as a member of the CAEP Working Group 3 which serves to assure that the ICAO emissions standards remain relevant.



Young Persons' Written Paper Prize

Awarded to H Gesell as the lead author of the paper titled 'System analysis of turbo-electric and hybrid-electric propulsion systems on a regional aircraft'. *The Aeronautical Journal*, October 2019, Vol 123, No 1268, pp 1602-1617.



Dr Hendrik Gesell

Dr Hendrik Gesell is a scientist in the Mechanical Engineering Department at the University of Wuppertal, Germany. He had previously developed and evaluated concepts for turbo-electric and hybrid-electric propulsion systems sized for regional aircraft while working at the German Aerospace Centre (DLR). At the University of Wuppertal his work is directed towards the efficiency of large-scale industrial processes for which he is making use of computerised fluid dynamics methods and creating numerical models.

Young Persons' Written Paper Prize

Awarded to G Dussart as the lead author of the paper titled 'Impact of spanwise non-uniform discrete gusts on civil aircraft loads'. The Aeronautical Journal, January 2019, Vol 123, No 1259, pp 93-120.

Dr Gaétan Dussart

Dr Dussart began his career as a doctoral student in the Dynamic Simulation and Control Group at Cranfield University. Partnered with Airbus his research focused on evaluating the use of in-flight folding wingtips on large civil aircraft to alleviate gust induced loads. As a direct result of this activity he was able to question the validity of applying uniform discrete gust models to large span aircraft having flexible wing structures which then led onto the paper in question. Following the completion of his doctorate studies he joined Airbus as a flight test handling qualities analysis specialist in 2019.



Journal of Aeronautical History Written Paper Prize

The Journal of Aeronautical History Written Paper Prize is awarded annually to the paper published in the Journal of Aeronautical History during the preceding calendar year that is most likely to engage and excite the widest possible community of professional and other interest and thus to exemplify the best in terms of communicating aerospace history in order to inspire future developments.

Awarded to J A D Ackroyd for his paper titled 'Cayley's 1804 Glider'. *Journal of Aeronautical History*, June 2019, pp 98-107.

Dr John Ackroyd FRAeS

Dr Ackroyd studied Aeronautical Engineering at Queen Mary College where he undertook shock tube research. Upon completion of this work he moved to the University of Manchester where he retired in 2000 as Senior Lecturer. He has presented the Lanchester, Cayley and Cody lectures, being awarded the Hodgson Prize for his Lanchester Paper. He was previously awarded the *Journal of Aeronautical History* Written Paper Prize for his paper 'Aerodynamics as the basis for aviation: how well did it do?' published in 2018.



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HF - Honorary Fellow F - Fellow AF - Associate Fellow C - Companion M - Member AM - Associate Member

Honorary Fellows

- 2006 General Charles E Yeager 2006 Air Vice-Marshal Professor R A Mason 2007 A Garcia 2008 Professor B Skews 2009 WK Maciver CBE 2009 G Page CBE 2012 Ing S Pancotti 2012 Professor M Gaster 2013 Professor K Ridgway CBE 2013 Professor R J Stalker 2014 C P Smith CBE
- 2014 Professor B Cheng

Honorary Companions

1920 Charles Alma-Baker CBE 1945 A N D Smith (ex Hon Accountant) 1950 Lord Douglas of Kirtleside 1950 Sir Alec Coryton 1957 Miss B Voyce 1958 WENixon 1959 Gustavus Green 1959 E C Bowyer CBE 1959 Sir William Hildred OBE 1961 Sir John N Toothill CBE 1962 MJB Stoker 1962 Miss F E Barwood MBE 1963 CH Gibbs-Smith 1963 C L Pashley MBE 1963 The Hon Mr Justice Wilberforce CMG OBE 1988 Sir Colin Marshall 1965 LA Wingfield 1965 TJames 1965 Mrs J Bradbrooke MBE 1966 J Davison OBE 1970 Mrs H G Alston 1970 Sir Anthony H Milward CBE 1971 WW Straight CBE 1973 CRADollfus

RAeS Gold Medallists

1909 The Wright Brothers 1910 Professor O Chanute 1915 ETBusk 1915 Professor G H Bryan 1926 Dr F W Lanchester 1927 Professor L Prandtl (HF) 1933 Sir Richard Glazebrook 1937 Juan de la Cierva (posthumously) 1945 Air Cdre F Whittle (F) 1946 Professor L Bairstow (HF) 1947 Sir B Melville Jones (F) 1950 Sir Geoffrey de Havilland (F) 1951 WGA Perring (F) (posthumously) 1952 Dr T von Kármán (HF) 1953 E F Relf (F) 1954 Sir Geoffrey Taylor (HF) 1955 Lord Hives (HF) 1956 Sir William S Farren (F) 1957 Professor J C Hunsaker (HF) 1958 Sir Sydney Camm (F) 1959 M Dassault 1960 Sir Frederick Handley Page (HF) 1962 Sir Arnold Hall (F) 1963 H Constant (F) 1964 R E Bishop (F)

- 2014 J-P Herteman 2015 Professor Sir Martin Sweeting OBE 2015 J-J Dordain 2015 Professor R K Agarwal 2016 P Fabre 2016 Sir Michael Marshall CBE 2016 Major T N Peake CMG 2016 Dr D W Richardson 2016 MJRvan CBE 2017 Professor R Bor 2018 Major General D E Barker 2018 M Bryson CBE
- 1973 Lord Elworthy 1975 H Kremer 1975 Sir Reginald W Verdon-Smith 1976 Lord Beswick 1978 J R Stainton CBE 1979 Lord Keith of Castleacre 1980 Sir Arthur Marshall OBE 1981 Sir Neil Cameron CBE 1982 Sir Douglas Lowe 1983 LCHunting 1985 Lord King of Wartnaby 1985 FAAWootton 1986 G Pattie 1987 Sir Norman Payne CBE 1989 Air Chief Marshal Sir Peter Harding 1989 M D Bishop 1990 T Maver OBE 1991 R F Baxter 1991 Sir Adrian Swire 1992 Dr T A Ryan 1994 RCN Branson
- 1994 Professor C J Pennycuick
- 1965 Professor M J Lighthill (F) 1966 Professor A R Collar (F) 1967 Dr S G Hooker (F) 1968 A A Rubbra (F) 1969 Dr D Küchemann (F) 1970 W Tye (F) 1971 Sir Morien Morgan (F) 1972 Professor A D Young (F) 1973 H Davies (F) 1974 F W Page (F) 1975 Professor D Keith-Lucas (F) 1976 Dr W J Strang (F) 1977 Sir Clifford Cornford (F) 1978 Dr Ludwig Bölkow 1979 Professor P R Owen (F) 1980 WJCharnley (F) 1981 A G Newton (F) 1982 R Hills (F) 1983 Professor G M Lilley (F) 1984 PHJ Young (F) 1985 | R Yates (F) 1986 R S Hooper (F) 1987 A B Haines (F) 1988 Professor G A Jameson 1989 Sir Donald Spiers (F)

- 2018 F R Donaldson 2018 Colonel J W Kittinger Jr 2019 Dr A M Madni 2019 Dr R K Nangia 2019 Dr G S Reddy 2020 Dr M J Benzakein 2020 Professor T Birch 2020 Dr A Gupta 2020 Ing F Nannoni 2020 Dr D Newman 2020 Dr A J Smits 2020 T Williams CBE
- 1995 Air Marshal M Nur Khan 1996 Sir Neil Cossons OBE 1997 AJGoldman 1997 R D Lapthorne 1998 P Martin 1999 HE Sheikh Hamdan bin Mubarak Al Nahyan 2000 HE Sheikh Ahmed Bin Saeed Al Maktoum 2002 JJTravolta 2002 R G Turnill 2003 Dr C C Kong 2007 D Piggott 2010 G Bisignani 2014 Air Marshal A Daudpota 2014 PM Jarrett 2015 Air Commodore C Clarke 2015 Sir Roger Bone 2015 D Bent 2016 Professor E Hughes 2018 Miss S Waiz 2020 The Honourable Jeffrey Shane 2020 | Ben-Tahir
- 1990 Professor J E Ffowcs Williams (F) 1991 Professor E G Broadbent (F) 1992 JHB Smith (F) 1993 Professor J B Scott-Wilson (F) 1994 M R Williams (F) 1995 Professor D Gardner (F) 1996 Philip C Ruffles (F) 1997 Robert A Davis (F) 1998 Richard Case (F) 1999 Chris Geoghegan (F) 2000 Dr Bill Bardo 2001 Dr Meyer J Benzakein (F) 2002 Jeffrey A Jupp (F) 2003 Dr Michael Howse 2004 Professor Günter Kappler 2007 Jain G Gray (F) 2008 Malcolm Crozier 2009 Timothy Clark 2009 Dr Henry McDonald 2012 Elon Musk 2014 Dr G McConnell (F) 2015 Professor R J Parker (F) 2016 FWKirkland (F) 2017 G Wyler 2018 P Beck

RAeS Silver Medallists

1909 SFCody 1921 H R Ricardo (F) 1922 Wing Commander E W Stedman (F) 1923 Wing Commander R M Hill (F) 1924 Major W S Tucker 1926 Professor B Melville Jones (F) 1927 Captain G S Wilkinson (F) 1927 PJRalli 1927 RJMitchell 1928 BN Wallis 1929 FHRoyce 1931 HCHTownend 1932 J de la Cierva 1933 A H R Fedden (F) 1933 D L Hollis Williams (F) 1935 C C Walker (F) 1935 Major F B Halford (F) 1936 BN Wallis 1937 P A Cooke (F) 1937 FW Meredith (F) 1939 Major R H Mayo (F) 1947 WG Carter (F) 1948 II Sikorsky 1950 J Smith (F) 1950 W E W Petter (F) 1951 SBGates (F) 1952 Dr H Sutton (F) 1953 H Grinsted (F) 1954 Professor W J Duncan (F) 1955 Dr A A Griffith 1955 Dr R A Frazer (F) 1956 Dr E S Moult (F) 1957 M B Morgan (F) 1958 Dr P B Walker (F)

RAeS Bronze Medallists

1908 W R Turnbull (F) 1909 Dr F W Lanchester 1910 BGCooper 1932 TWK Clarke 1948 F B Bradfield (F) 1949 Captain R N Liptrot 1949 EN Twining 1950 A C Lovesey (F) 1951 HJPollard (F) 1952 H Povey (F) 1953 L Boddington 1954 H B Howerd (F) 1955 Professor M J Lighthill (F) 1956 JW Barnes 1957 FB Greatrex (AF) 1958 Dr D Williams (F) 1959 D G King-Hele 1960 H G R Robinson 1961 L Haworth (F) 1962 Dr A J Barrett (AF) 1963 H H Pearcey (AF) 1964 HPY Hitch (AF) 1965 HLCox(F) 1966 E C Maskell (F) 1967 Dr E H Mansfield (F) 1968 K R Brown 1969 WJG Pinsker 1970 N F Harpur (F) 1971 P Bradshaw 1972 Professor C G van Neikerk (F) 1973 R W Howard (AF)

.

1959 Dr E A Watson 1960 R H Chaplin (F) 1961 R Hafner (F) 1962 Dr D Küchemann (F) 1962 Professor E J Richards (F) 1963 L H Bedford (F) 1964 A R Howell (F) 1965 Dr R R Jamison (F) 1965 R Stanton Jones (F) 1966 J P Smith (F) 1967 C F Joy (F) 1968 R C Morgan (F) 1969 L N Phillips 1969 W Watt 1970 E E Marshall (F) 1971 Professor J H Argyris (F) 1972 Dr J Seddon (F) 1973 W J Charnley (F) 1974 H Zeffert (F) 1975 Professor W A Mair (F) 1976 L F Nicholson (F) 1977 B O Heath (M) 1978 J C Wimpenny (F) 1979 V A B Rogers (F) 1968 R C Morgan (F) 1979 VABRogers (F) 1980 R H Whitby (F) 1981 Dr W Stewart (M) 1982 K S Lawson (F) 1982 N 3 Lawson (F) 1983 Dr E W E Rogers (F) 1984 G H Lee (F) 1985 Dr R C Lock (F) 1986 P G Wilby (M) 1987 M C Neale (F) 1988 JWH Thomas (M) 1989 R P G Collinson

> 1974 A B Haines (F) 1975 R L Bickerdike 1976 I C Taig (M) 1977 Dr A H Mebka 1978 Lt Cdr D R Taylor (M) . 1979 J McNamara 1980 SMEllis 1981 T Sharples 1982 P Brotherhood 1983 RDJMaxwell (M) 1984 D E McLaurin 1985 M R Pike (F) 1986 D C R Link (F) 1987 E L Goldsmith 1988 S A Holloway 1989 R O R Chisholm 1990 Dr N I Carter 1990 WDBryce 1991 C R Taylor 1991 JCGibson 1992 D G Mabey (F) 1992 Dr D E Jensen 1993 Professor R S Kalawsky 1994 G C Thomas (M) 1994 H M Newns 1995 F J Perry , 1995 IP MacDiarmid 1996 CJRichards 1997 JSLewis 1998 N Barrington 1999 Professor G D Padfield (F)

1990 Professor J F Bush (F) 1991 RLDommet 1992 Dr P C M Perrier 1993 Dr C J Peel 1994 Dr M G Hall 1995 BJMain 1996 Dr P R Ashill 1997 S M Lyons (F) 1998 C Yeo (F) 1999 M Mansell (F) 1999 M Mansell (F) 2000 PW Liddell (M) 2001 Dr S S Banda 2003 A Vincent (F) 2004 G Byham (F) 2005 Professor D Southwood 2006 Professor J M Rolfe 2006 Professor J M F 2006 C T J Scrivener 2007 S Purdy 2008 Dr D Dorman 2009 Professor S Raghunathan OBE 2010 Brig Gen the Viscount De Winne 2011 Professor T Jones 2012 RAC Smith 2013 Professor J D Denton 2014 FB Ogilvie (F) 2014 R Saia 2015 Dr G Satheesh Reddy (F) 2016 B Phillipson (F) 2016 J K Edgley (M) 2017 Dr M Unwin 2018 Y Jayaratne (F) 2019 Dr S Hodge (F) 2020 Dr A Bunn (F) 2020 Dr A Trebi-Ollennu

2000 SEAllwright 2001 D Lister 2002 R Pinker (M) 2003 Dr M Fisher 2004 J Roe 2005 Dr S Janvrin (M) 2005 Dr J Pike 2006 N Scott (F) 2007 Flt Sgt A Reeves 2008 R Cansdale 2009 Dr A M Segal 2011 Dr E Cook 2012 S Carignan 2012 M R Maltby 2013 G W Redgrave (F) 2013 R G W Cherry (F) 2014 R Peckham 2015 EWH Fitzpatrick (M) 2015 Major M Dennis 2015 Dr K A Gharib (M) 2016 A Bradford 2016 Dr S Reed 2017 M J Gamlin (F) 2018 Wing Commander M Place 2018 Maior R Short 2019 Dr R Coker 2019 E Joffre 2019 Dr J V Taylor 2020 E Anderson (M) 2020 G McDougall 2020 | Walters

.

RAeS Team Gold Medallists

2004	SpaceShipOne Team	2009	Vectored-Thrust Aircraft
2005	A380 Wing Design Team		Advanced Control (VAAC) Team
2007	BERP IV Rotor Blade Development Team	2009	ATV Jules Verne Operations Team
2008	Trent 900 Engineering Team	2014	Project Zero Team, AgustaWestland

RAeS Team Silver Medallists

- 2005 The Huygens Project Team 2006 Inmarsat-4 Satellite Team
- 2008 Cranfield Aerospace X-48B UAV Team
- 2010 Mantis UAV Project Team
- 2011 HYLAS Team
- 2012 CAMPS Development Project Team

RAeS Team Bronze Medallists

2015 The Beagle 2 Mars Mission Engineering

- 2005 JSF Manufacturing Development Team 2008 BAE Systems Autonomous Systems & Future Capability UAV Team 2009 Fleet FS (Air) MASU Repair Helicopter Team 2010 Space Innovation and Growth Team 2010 AW159 Wildcat/Lynx Mk9A Design Team 2018 Chinook Flight of the Joint Helicopter 2012 CADS Project Team Operational Evaluation Unit 2013 NEPTUNE Development Team 2018 Electric Drive Tail Rotor Team
- Sir Ralph Robins Medal

2019 | Ariza

2020 Dr H Webber

Specialist Awards

2018 A Thompson

2020 Dr J Marlow

Integration Team

2020 Space Fence Delivery Team

2020 HTX Team

2015 Rosetta Mission Team, ESA

2018 Rocket Lab Rutherford Engine Team

2019 F-35/Queen Elizabeth-Class Carrier

2020 Aircraft Fuel Tank Component Design Team

2019 Chang'e-4 Lunar Landing Mission Team

2017 Solar Impulse 2 Team

- 2019 AW159 Digital Automatic Flight Control System Team

2020 Dr A Nelson

2020 P White

2018 Flight Lieutenant S Hewer

2020 Flt Lt I Brosch

Team Specialist Awards

2020 UAVaid Team

Flight Operations Medallists

1996 Squadron Leader W J M James 1997 J Lavaroni 1998 A Smith 1999 Captain D H Akhurst 2000 Captain C Elton 2002 P Boor

2008 Captain R Macdonald 2009 Captain J Danning MBE 2010 Captain R Kohn 2011 P G Richards 2012 PD Moxham 2013 Captain D A J Martin

Flight Simulation Medallists

1991 W-D Hass 1992 BPHampson 1993 E M Boothe 1994 Captain W A Wooden 1995 SJAnderson 1997 R Frasca 1998 Captain P Carver

1999 N Seavers 2000 B Cavadias 2002 D Irving 2003 R Curnutt 2005 Captain I C Watkins 2007 Dr D White 2008 O Wynn

- 2014 NJButcher 2017 Flight Sergeant J Sinnott 2018 Captain G Cruse 2020 Captain J Cox
- 2009 Squadron Leader M E J Hickmott 2010 M Blackwood 2011 Dr E Cook 2012 PJBTharp 2013 Captain D Harms 2017 Professor D J Allerton 2018 Captain A Gadgil

2014	ADED VM/D Miner Major Toot Current

2018 RAF Youth and STEM Team

2018 Redstreak SAR System Team

2013 ASTRAEA Team

2014 Team Taranis

Team

- 2014 A350 XWB Wing Major Test Support Team 2018 Airbus Perlan 2 Project Team 2015 e-Go Aeroplanes Development Team 2017 Osprey 30 AESA Radar on AW101
 - 2019 Novasar Industry Team
- 2017 Chinook Rotary Wing Flight Physics Team 2020 P-8A Delivery Team
 - 2020 Team Phoenix

Alan Marsh Medallists

1956 Sqn Ldr W R Gellatly
1958 Lt Cdr G G R Miller
1960 Flt Sgt B Breach
1961 J Brannon
1962 C T D Hosegood
1963 Wg Cdr K H Wallis
1964 K M Reed
1965 Lt Cdr J G P Morton
1966 Major R O I Woodbridge
1967 W H Sear
1968 Sqn Ldr M A McNeile
1969 J L Barnes
1970 Major H B Warburton
1971 Cdr L G Locke
1972 Captain D H Eastwood

Geoffrey Pardoe Space Award

1994 J Byrne
1995 Dr R A Rowntree
1996 M J Painter OBE
1997 Professor M Cruise
1998 Dr M Fouquet
1999 C McInnes
2000 Dr D Fearn
2001 P Down
2002 I V Munro
2003 J Morgan
2004 Professor J L Culhane

Turnbuckle Award

1994 J E Humphreys
1995 A N Nash
1996 P J Adams (F)
1997 Ping Kit Chan
1998 R C 'Bob' Williams
1999 B Newton

R P Alston Medallists

1949 BAGMcGown 1950 FG Hemsley 1951 RJFalk 1952 PAHufton 1953 Captain A M A Majendie 1954 MLBergen 1955 GAVTyson 1956 DPDavies 1957 BLynch 1958 Mrs Anne Burns 1959 AW Bedford 1960 Wing Commander R P Beamont 1961 R P Dickinson 1962 P Howlett 1963 C F Bethwaite 1964 E B Trubshaw 1965 H G Hazelden 1966 HCHMerewether 1967 Squadron Leader C C Rustin 1968 TPFrost 1969 DJWhitehead

.

- 1973 L R Moxam
 1974 Captain A C Gordon
 1976 Flt Lt J R A Whitney
 1977 Sqn Ldr G R Spate
 1978 K F Robertson
 1979 Flt Lt A Pengelly
 1981 Lt Cdr K N Atkin
 1982 Lt Cdr N Arnall Culliford
 1983 Captain R A Lister
 1984 Captain D A Creamer
 1985 Captain M Betts
 1987 J T Egginton
 1988 Lt Cdr R I Horton
 1989 S M StC Collins
 1990 P J G Harper
- 1992 Flt Lt P A Bell
 1992 Flt Lt R C J Lewis
 1993 A Warner
 1994 WO1 P C James
 1995 C W Hague
 1997 A S Walls
 1999 D Reid
 2001 J E M Mustard
 2005 A Strachan
 2009 N Talbot
 2011 Sqn Ldr D Marsden
 2012 S Carignan
 2013 Captain M R Prior
 2014 Lt Cdr M A Sewed
 2016 Lt Cdr R E J Dowdell

2013 J Thatcher (M)

2015 Rosetta Flight Control & Flight Dynamics

2018 Rocket Lab Electron Launcher Team

2014 R Peckham

Team

2017 P Flanagan

2019 Dr D H Parker (F)

2020 Dr J McDowell

2016 Major T N Peake CMG

- 2005 A J Thirkettle
 2006 GIOVE-A Team, Surrey Satellite Technology Ltd (SSTL)
 2007 UK TopSat Team, QinetiQ, Surrey Satellite Technology Ltd, Rutherford Appleton Laboratory, Infoterra
 2008 Skynet 5 Space Team, EADS-Astrium
 2009 J Ellwood
 2010 W Whitehorn
 2011 A Bond
 2012 P Wood
- 2000 Sqn Ldr M Hepworth
 2001 Wg Cdr L Reid
 2002 Sqn Ldr C Chippington
 2003 J Craike
 2009 R W Alcorn
 2010 A Barnes
- 2011 J M Rainbow OBE (F)
 2012 M Skinner
 2014 M J Adams
 2015 Major M Dennis
 2017 Lt Cdr D Collins
 2020 D Wright

1970 F O'Hara 1971 WPIFillingham 1972 ALBlackman 1973 D Lean 1974 JF Farley 1975 DMSSimpson 1976 TMS Ferguson 1977 KMPerrin 1978 PPBaker 1979 Captain J Blair 1980 P Millett 1981 FCBaggs 1982 M S Goodfellow 1983 JD Eagles 1984 APSJones 1985 MHFuller 1986 RJPoole 1987 CJYeo 1988 KPOrme 1989 P Fawcett 1990 HEFrick

1991	M L Pester
1992	Squadron Leader D R Major
1993	C F Roberts
1994	R N Lee MBE
1995	JTS Lewis
1996	V C Lockwood
1997	N Grove
1998	G Sedov
1999	W Brooks
2000	R Cole
2001	G T Shanks
2002	Commander K Engelsman
2003	G Skillen
2008	J Rosay
2009	l Young
2013	P Wilson
2015	E Fitzpatrick
2017	D Lee
2020	B Lewis

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Roger Green Medallists

1998 Professor H C Muir OBE1999 E Wiener2000 Professor J Reason2001 Captain D Maurino

2002 Professor R Amalberti2003 Professor R L Helmreich2004 Dr J K Lauber2005 Professor R Flin

2008 Captain P Carver 2009 D King 2019 J Page 2020 Dr P Hancock

Sir Robert Hardingham Presidential Sword Award

 1981-1982
 Mr H W Smith (F)

 1982-1983
 No award

 1983-1984
 No award

 1984-1985
 Mr J R Finnimore (F)

 1985-1986
 No award

 1986-1987
 Mr J R Finnimore (F)

 1986-1987
 Mr J H Kingston (F)

 1987-1988
 No award

 1988-1989
 Mr V W Clarkson (F)

 1989-1990
 Dr P H Calder OBE (F)

 1990-1991
 Professor G J Hancock (F)

 1991-1992
 No award

 1992-1993
 Mr R J Forrester (F)

 1993-1994
 No award

 1994-1995
 Air Vice Marshal W J Belton (F)

 1995-1996
 Miss B M Rimmer (M)

 1996-1997
 Mr D G Yeomans (F)

 1997-1998
 Major C F Wilson

 1998-1999
 No award

 1999-2000
 Mr F N R Ballam

 2000-2001
 Mr G Roe (F)

 2001-2002
 No award

 2002-2003
 Professor J L Stollery CBE (HF)

 2003-2004
 Mr P R Boyle (F)

 2004-2005
 Mr A Heath OBE (F)

 2005-2006
 Sir Donald Spiers (HF)

 2006-2007
 Mr R D Barkla (F)

 2007-2008
 Air Chief Marshal Sir Michael Graydon GCB CBE (F)

2008-2009 Air Commodore E W Tyack CBE (F)
2009-2010 Dr G T Coleman (F)
2010-2011 Captain D C Rowland (F)
2011-2012 Group Captain P A Barrett OBE (F)
2012-2013 No award
2013-2014 Mrs C Walker (C)
2014-2015 Mr D Wilson (F)
2015-2016 Mr L R Balthazor (F)
2016-2017 Group Captain G A Woolley OBE (F)
2017-2018 Air Vice Marshal D C Couzens (F)
2018-2019 Professor P W Bearman (F)
2019-2020 Professor R A East (F)

Young Persons' Achievement Award

2007	P Williams
2008	M Bell
2009	H Nobbs
2010	S Bidwell
2011	Dr G Ivetic

2011 Dr G Ivetic 2016 A C Godfrey Young Persons' Achievement Commendations

2012 Clane

2013 C Hutchin

2014 A Martin

2015 J Naro

2009	K Thomason	2014	T Fermin
2009	G Cardozo	2014	A Baghchehsara
2011	M Hartley	2015	R Haines
2013	C Argote	2015	J Easum
2013	Brunel University, Aerospace and Aviation	2016	P Pollock
	Engineering Team	2019	Dr N M Caplin

Alan Marsh Award

1997 N Hackett 1998 M Orchard 1999 J Howitt 2000 A Alford 2001 M Tucker 2002 Dr C Harrison 2003 E Lewis 2004 S Edwards

Herbert Le Sueur Award

1999 B Fraser2000 R Buchanan2001 J Griffin2002 J L Hill2003 V Paddock2004 K Robinson

2005 M Couchman 2005 A Ramage 2006 R Buchanan 2007 D Belt 2008 C Jackson 2009 C Shields 2010 L Gray 2011 P Langworthy

2005 S Moffat 2006 A P Smeeton 2007 S Bidwell 2008 K Sollars 2009 T Wolstencroft 2011 P Sozer 2020 A Bowen-Rotsaert 2020 H Jakes

2017 R Patriarca

2019 SLHarker 2020 NGoss

2018 P Haig

2020 Corporal B Massey

2012 S Gates 2013 A Massaro 2015 M Kear 2017 J Allen 2019 D N Young 2020 Z Garstang

2014 S Hart 2015 M Dunkerley 2016 S Clark 2018 P Haig 2019 L T N Hoang 2020 Dr M Alam

N E Rowe Medallists

(under 22 age group)				
2017 Jamie Bignell, Yeovil Branch	2018	Myles Johnson, Bedford Branch	2019	Bastien Longeon, Paris Branch
(22-30 age group)				
2017 Alex Godfrey, Bedford Branch	2018	Laurent Declerck, Bristol Branch	2019	Adam Hill, Bristol Branch
(under 25 age group)				
2004 Iansteel Achunche, Southampton Branch2005 Mark Wills, Bristol Branch2006 Daniel Marshall, Farnborough Branch2008 Hannah Nobbs, Yeovil Branch	2010 2011 2012 2012	Mark Holton, Yeovil Branch Ulrich Walach, Solent Branch Jamie Ottaway, Boscombe Down Branch Hannah Latham, Derby Branch	2013 2014 2015 2016	James Ibbitson, Yeovil Branch Guillermo Durango Pascual, Cranfield Branch Charles Muir, Yeovil Branch Timothy Clark, Boscombe Down Branch
(25-30 age group)				
 2004 Matt Fox, Stevenage Branch 2005 Robert Rolfe, Farnborough Branch 2006 Marc Merlin Konrad, Bristol Branch 2008 Phillip Williams, Bristol Branch 	2008 2009 2011 2012	Alexander Moerchel, Derby Branch Dr Ian Edmonds, Derby Branch Alicia Carpenter, Stevenage Branch Benjamin Hewlett, Stevenage Branch	2013 2014 2015 2016	Filomeno Martina, Cranfield Branch Sarah Hunt, Derby Branch Simon Chiverton, Stevenage Branch Paul Mullen, Yeovil Branch
(under 23 age group)				
1992 Mark Parbhoo, Manchester Branch 1993 John Liptrott, Heathrow Branch 1994 Robert Allen, Stevenage Branch	2000 2001 2002	Robin Dickenson, Bristol Branch Paul Clark, Manchester Branch Jennifer Goodman, Bristol Branch	2003	Tareq Nazlawy, Stevenage Branch
(23-27 age group)				
 1991 Y W Chan, Manchester Branch 1992 Mark Kendrew, Stevenage Branch 1993 William Crowther, Bristol Branch 1995 Benoît Massal, Toulouse Branch 	1996 1997 1999 2000	Jean-Christian Bordier, Toulouse Branch Michael Jump, Preston Branch Richard Fisher, Stevenage Branch Darren Ansell, Preston Branch	2001 2003	David Starling, Bristol Branch Stuart Woolvin, Farnborough Branch
N E Rowe Certificates of	Mer	it •		
(under 22 age group)				
201 / Bettina Islam, Manchester Branch2017 Joshua Thomson-Smith, Derby Branch2018 Chloe Molloson, Derby Branch	2018 2019 2019	William Eustace, Cambridge Branch Amina Dalton, Derby Branch Hari Prasad, Cambridge Branch	2019 2019	Michael Iennant, Cambridge Branch Hudson Yuen, Montreal Branch
(22-30 age group)				
 2017 Chris Clay, Derby Branch 2017 Lucie Cordier, Stevenage Branch 2017 Colin Field, Bristol Branch 2017 Calum McFarlane, Yeovil Branch 2018 Kieran Byrne, Manchester Branch 	2018 2018 2019 2019 2019	Lewis Norris, Derby Branch Isabel Vallina-Garcia, Cambridge Branch Thomas Hartas, Preston Branch Owen Horton, Bedford Branch Jennifer Insley, Bedford Branch	2019 2019 2019	Joseph Ribbons, Yeovil Branch Joshua Thomson-Smith, Derby Branch Behrad Vatankhahghadim, Montreal Branch
(under 25 age group)				
 2004 Helen Webber, Bristol Branch 2004 Kwame Bekoe, Farnborough Branch 2005 Andrew Morley, Solent Branch 2008 Rajesh Odedra, Birmingham, Wolverhampton & Cosford Branch 	2010 2011 2012 2015 2015	Tomos Edwards, Boscombe Down Branch Jorgina Busquets, Astrium Blake Charles, Yeovil Branch Alex Cook, Boscombe Down Branch Raúl González Muñoz, Cranfield Branch	2015 2015 2016	Jaidev Sanketi, UAE Dubai Branch Richard Stephens, Cambridge Branch Vijay Trivedy, Derby Branch
(25-30 age group)				
2004 Steven Dean, Farnborough Branch2010 Sathyakumar Sharma, Manchester Branch2010 Adam Newman, Derby Branch	2012 2013 2015	Christopher Moore, Yeovil Branch Jonathan Nash, South African Division Manisha Kushwaha, Cranfield Branch	2016 2016 2016	Charles Laing, Stevenage Branch Hania Mohiuddin, Manchester Branch David J Rajendran, Cranfield Branch
(under 23 age group)				
2001 Steven W Phillips, Bristol Branch	2002	David Rose, Bristol Branch		
(23-27 age group)				
1998 Conal Walker, Stevenage Branch 1998 Richard Wood, Preston Branch	1999 2001	John Mackie, Manchester Branch Dr Simon Forsyth, Stevenage Branch	2002 2003	Carl Warren, Stevenage Branch Mohammed Afsar, Bristol Branch



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