



**ROYAL  
AERONAUTICAL  
SOCIETY**  
AUSTRALIAN DIVISION  
SYDNEY BRANCH

**MARCH 2017**

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**NEWSLETTER**

## **“Aeronautics - All in the Pub!”**

The evening will be appealing to Students, Post Graduates, the Old and the Bold Aviators and Engineers, and all those in between.

When: **WEDNESDAY 29<sup>th</sup> March 2017**

**18:00 for 18:30 hours sharp**

Venue: **3 Wise Monkeys, 555 George St, Sydney**  
(Second storey - Three blocks down George St from Town Hall Station towards Broadway on the right hand side)



**EIGHT ACTS/PRESENTATIONS** strictly limited to eight minutes each - each act must include one gag, a graphic, relevance to the audience an emotion - surprise, wonder, disappointment, confusion

Yes – they will be judged on these criteria

**Aeronautics which reaches out and touches other sciences  
Phabulous Aeronautics!!**

*..and not to forget the “rego spotters” – “Steve's Famous Aviation Trivia Quiz”*

*All supplemented with ‘cool beer and pizzas’*

### **Topics will include:**

**David Cox (USYD) - Why Sailing Boats Fly?**  
**Stephen Kuhl (RAeS) - A film review – What I learnt from Sully**

**Brian Greeves – Real Story Behind the Hudson Miracle**

**Boris Jovanovic (Aviator & Engineer) - is a glider pilot who knows how to make a quick turn to miss an eagle in flight. But he wants to fly in space which is tricky, cos there's no air. So, is it possible to turn a spaceship the way the Star Wars pilots do?**

**Brian Stade – How I use my Aeronautical Engineering Degree.**

**Roger Chambers – The Future of Air Traffic Management**

**Maggie Tran – Highlights of Avalon Airshow 2017 (TBC)**

**PLUS**

**“Steve's Famous Aviation Trivia Quiz”**

Attendance will attract 2 CPD hours



**RSVP:** Registration for the evening **is preferred**. Please register by clicking on/copying and pasting into your URL this link: <https://raesmar17.eventbrite.com.au> Your registration will be confirmed by email with an attached ticket. **Please print the ticket and present the ticket at the door. Please note:** Non members should enter the code **NM** if requested to enter a RAeS membership number.

**Parking:** Available in nearby parking stations. Please allow time to drive to the city, park, and walk to the venue.

**Public Transport:** All CDB train services stop at Town Hall Rail Station. For bus travellers please be aware that bus services within the CBD have changed. You may find it more convenient to catch a train from either Central Station or Wynyard Station to Town Hall Station and walk.

**Your 2017 Committee:** David Cox (Chair), David Adkins (Immediate Past Chair & Web Co-ord), John Vincent (Secretary), Jeff Lock (Treasurer), Ross Barkla, Capt Brian Greeves, Abhijeet Kumar, Zoren Lui (Uni of Syd Student Rep), Ying Luo, Peter Marosszeky, Mitch Needham (UNSW Aviation Rep), Bryan Stade, Henry Thai, Daniel Walsh (UNSW Student Rep). **Editor:** Jeff Lock ([jeff.lock@bigpond.com](mailto:jeff.lock@bigpond.com)) **Page 1 of 5**

## Two Australian Joint Strike Fighters -F-35, participate at the Avalon Airshow 2017

On Friday 3<sup>rd</sup> March, 2017, VIPs including Mr Turnbull, Defence Minister Marise Payne, Defence Industry Minister Christopher Pyne and Lockheed Martin CEO Marillyn Hewson welcomed the F-35s to Australia. The two Joint Strike Fighters are currently based at Luke Air Force Base in the United States, but were flown to Australia for the first time by Royal Australian Air Force (RAAF) pilots on Monday. Their debut in Australia comes 15 years after the Federal Government first announced Australia would participate in the "system development and demonstration phase" of the US-led Lockheed Martin Joint Strike Fighter program.



Mr Turnbull paid tribute to Australian Defence technology used to build the Joint Strike Fighters. To date Australian Companies have received over \$800M worth of F-35 contracts to date and Defence estimates that Australian industry participation in production of the some 3100 F-

35s on order today, will reach over \$2B by 2023 with further opportunities beyond that date. Australian companies participating in the F-35 project are A.W.Bell (Victoria), Marand (Victoria), Quickstep (NSW), Levett Engineering (SA), Lovitt Technologies (Victoria), and Heat Treatment Australia (Qld, NSW, Victoria).

The Prime Minister continued "It is an example of how our Defence industry plan is not simply securing our Air Force and our Army and our Navy with the capabilities they need to keep us safe in the 21st century, but it is driving the advanced manufacturing, the jobs, the advanced technology that Australians need to make sure our children and grandchildren have the opportunities in the years ahead."

Defence Minister Marise Payne said the F-35s (referred to as Gen 5 capability) were "game-changing" for the RAAF. "They will provide the air force with the ability to execute air combat missions which were previously beyond our scope. In fact, not too long ago, previously beyond our imagination," she said.

"The F-35 has stealth built into it, right from the start. Its fuel tanks, its weapons and sensors are on the inside of the aircraft. They can share information with other aircraft, including the Army, the Navy and those of our allies and coalition partners."

Accounting firm PricewaterhouseCoopers has examined the economic impact of the jet's production and maintenance program and predicts the number of jobs generated in Australia will double to 5,000 by 2023.

The Government is preparing to spend \$17 billion on 72 F-35 aircraft, with the first expected to be delivered to Australia in 2018 and enter service in 2020.

During the Airshow the head of the US-led JSF program, Lieutenant General Chris Bogdan, said Australia could eventually expect to pay under \$106 million for each F-35 as the cost of the aircraft continues to fall. As a comparison the cost of a current F16 fighter (Gen 4 capability) is approximately \$80M. To view the F-35s landing at the Avalon Airshow click on the following:

<https://www.youtube.com/watch?v=ZyekDWKk3Bs>

## Australian aircraft designer wins 2017 Lawrence Hargrave Award

John Corby is the 2017 winner of the prestigious biennial Lawrence Hargrave Award of the Royal Aeronautical Society Australian Division for an Australian who has made a significant contribution to Australian aviation. The award winner was announced at the opening ceremony of the Australian International Airshow on February 27. The award was presented by the RAeS Australian Division President John Vincent FRAeS at the 17th Australian International Aerospace Congress Dinner on the evening of February 27 in Melbourne. The citation on the certificate reads as follows:-

*In recognition of his outstanding accomplishment on his own in the full design and build of the starlet light aircraft that gained Australian full Certificate of Type Approval No. 74-1 in 1972, thus identifying the Starlet as an aeroplane under ANO 101.28.*

(Picture left to right: Prof Chris Atkin CEng FRAeS – Society President, John Corby, and John Vincent FRAeS, Australian Division President)



The Lawrence Hargrave Award honours one of the true pioneers of flight. Hargrave's experiments with box kites at Stanwell Park near Sydney in the 1890s proved to be one of the most significant early developments in aviation.

John Corby was a structures engineer in developing repair schemes and modifications on Qantas aircraft and engines. In 1958 Corby commenced a project to design and build a light aircraft that would be named the 'Starlet'. The magnitude of the task facing a lone individual was enormous. John Corby undertook this formidable task on his own with little outside assistance. The Starlet was completed in May 1966 and the first flight was made in August. John lodged his application for a Certificate of Airworthiness in November, 1971, his submission accompanied by 250 pages of calculations, systems designs, weight and balance and flight test reports so comprehensive that DCA granted the Starlet the full Certificate of Type Approval No.74-1 on 30<sup>th</sup> June, 1971, placing the Starlet in the same category as commercial aircraft.

The capability and potential of the Starlet were clearly demonstrated at the 1973 Australian Aerobatic Championships. At the time the Starlet was cleared for all aerobatics except spins and negative g, but it still gained first place in the B grade division competing against Chipmunks and Cessna Aerobats.

In 1978 after leaving Qantas John was working as an engineering consultant when he was appointed General Manager and Chief Designer of Transavia, a Sydney company producing the ingenious, specialised PL-12 Airtruk agricultural aircraft. The Airtruk was conceived at a time when a great amount of crop dusting was being carried out. Its most distinctive feature were widely separated, cantilever twin boom T tails which allowed loaders direct, unrestricted access to the fuselage when loading the hopper. The short fuselage featured a tricycle landing gear and a high pilot position for best view and safety. John was employed to engineer an alternative power plant, and supervise development of an improved model, the T300 Skyfarmer powered by a 300 hp 6 cylinder Textron Lycoming IO-540 engine and, in 1988, an extended version with improved aerodynamics and powered by an eight cylinder version of the engine. Certification under U.S. FAA FAR23 rules was a major and lengthy undertaking to allow export sales, leading to a number sold and operated in China and other countries. The aircraft was employed extensively in Australia and manufacture continued until 1990, by which time approximately 120 had been produced. John Corby remained at Transavia for ten years.

The Starlet arrived on the international stage in 1981 when participating in the "Oshkosh Express" in which three Qantas 747 "Combis" were chartered, each to carry about 200 aviation enthusiasts plus aircraft to Oshkosh where John was "thrilled to have flown one and a half hours at this wonderful gathering of aviation enthusiasts". A U.S. agency asked for plans, a local Starlet newsletter was established with the first of many Starlets completed in 1986, and construction continues there today.

Plans for the Starlet have now sold in 31 countries. John is not sure of the number built but believes it is over 150, and it is known that Starlets are flying in at least ten countries. The UK Light Aircraft Association reported in 2016 that five Starlets are flying in the UK, with fourteen more under construction. Although current Starlets are aerodynamically the same as the first, various upgrades have been incorporated, including a bubble canopy and wheel spats, and John has redesigned the aircraft in an all metal configuration named "Kestrel", seen in the accompanying photos.

The universal appeal of the Starlet can be gauged by the example of the following extract from a letter to John, on the 50<sup>th</sup> anniversary of the first flight, in which the Aeronautical Association and Ultralight Committee of Finland wrote "we extend our congratulations to you for design of an outstanding airplane - the Corby Starlet". There is no doubt that continuing success of Starlet with its Australian engine and propellers will add many more years to the 50 now counted from the birth of the aircraft.



**Membership Information:** To join the RAeS or to UPGRADE your current membership standing or to see membership GRADE INFORMATION go to [www.raes.org.au](http://www.raes.org.au) or email [austdivision@raes.org.au](mailto:austdivision@raes.org.au). Annual memberships commence at only \$142 or \$28 for Students. Being a member helps us sustain a vibrant activities programme and opens the way to access restricted 'member-only' events.

**The RAeS is now inviting nominations for 2017 Honours, Medals and Awards**  
**Closing Date: 31 March 2017**

The Royal Aeronautical Society's Honours, Medals and Awards are the most prestigious and long-standing awards in global aerospace, honouring achievement, innovation and excellence. The Society is now accepting

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nominations for the 2017 awards. Anyone can offer a nomination for any individuals and/or teams working in any area of aerospace, anywhere in the world. The only requirement is that the individual or team nominated is felt to have made a clear contribution to the field of aerospace art, science and/or engineering which merits recognition by the Society. An award can add invaluable recognition and kudos for an individual or team helping to foster inspiration and talent among employees and employers alike.

The [nomination form can be downloaded](#) at the bottom of the page and returned to [Scott.Phillips@aerosociety.com](mailto:Scott.Phillips@aerosociety.com) by the deadline of 31 March 2017.

Winners from the 2016 Awards included Sir Michael Marshall HonFRAeS, Chairman of Marshall of Cambridge Ltd, Michael Ryan HonFRAeS, Vice President of Bombardier, Pierre Fabre HonFRAeS Executive Vice President, Research, Technology and Innovation at Safran Group, ESA astronaut Tim Peake HonFRAeS. [View the 2016 RAeS Awards Winners details.](#) For more information please visit the [Honours, Medals and Awards webpage](#) or contact Scott Phillips at [Scott.Phillips@aerosociety.com](mailto:Scott.Phillips@aerosociety.com) or call +44 (0)20 7670 4303.

**2017 Diary: May 5-7:** Aviatex 2017 is the first of what is to become an annual aviation trade show aimed primarily at the light sport, recreational and general aviation markets. Aviatex 2017 will be held in conjunction with **Wings over Illawarra 2017**, which is fast becoming a premier event on the Aviation enthusiast's calendar. Aviatex will provide the trade component to Wings over Illawarra and will offer a fantastic opportunity for businesses to showcase their products and services to a wide audience. Refer details: <http://www.aviatex.com.au/>



**May 8-11:** The Association for Unmanned Vehicle Systems International will hold XPONENTIAL 2017 in Dallas, Texas, USA. Attendance will equip you with insights, solutions and opportunities for the industry's newest developments and challenges. Attend more than 200 timely and relevant courses—organized into three tracks (policy, technology and

business solutions), keynotes from industry pioneers and a robust show floor showcasing the latest innovations. Refer details: <http://www.xponential.org/xponential2017/public/Enter.aspx>

**July 19-21: 2017 Aircraft Airworthiness and Sustainment (Australia) Conference**, a non-profit event for the benefit of all those involved in sustaining our fleets, both **Civil and Military**, safely and economically through their lifecycle. The Conference will be held at the Brisbane Convention and Exhibition Centre. Call for papers announced with abstracts containing no more than 300 words to be received for review by 14 April 2017. Refer details at: <http://www.ageingaircraft.com.au/aasc>

**Aug 14-29, 2017:** 'Total Solar Eclipse Tour' Including visits to famous USA Astronomical and Aerospace Facilities. For further details please contact The Sutherland Astronomical Society Inc. Email: [info@sasi.net.au](mailto:info@sasi.net.au)



**Sept 25-29, 2017:** The 68<sup>th</sup> International Astronautical Congress – **Unlocking imagination, fostering innovation and strengthening security**-- is being held in Adelaide. Thousands of scientists, including some 200 astronauts, will participate in the international space congress. The global economy and security of many nations depends on assured and secure access to satellites that provide communications, timing and navigation services and remote sensing data. Refer details at: [iac2017.org/](http://iac2017.org/)

## Aerospace Websites

[www.57rescuecanada.com](http://www.57rescuecanada.com) : Follow Capt. Karl Kjarsgaard's adventures to recover Halifax bomber LW170 which is resting beneath 5000ft of water off the Irish coast;

[www.adastron.com/707/updates/updates.htm](http://www.adastron.com/707/updates/updates.htm) : Diary of Boeing 707-138B XBA formally Qantas EBA.

[www.airshow.com.au](http://www.airshow.com.au)

[www.atsb.gov.au](http://www.atsb.gov.au);

[www.aviationmuseum.com.au](http://www.aviationmuseum.com.au) - Temora Aviation Museum;

<http://boxkite2014.org/book/book.htm> : The Boxkite project.

[www.powerhousemuseum.com/whatson](http://www.powerhousemuseum.com/whatson) ;

[www.singapore.com.sg](http://www.singapore.com.sg)

[https://en.wikipedia.org/wiki/Rolls-Royce\\_Trent](https://en.wikipedia.org/wiki/Rolls-Royce_Trent)

<https://herox.com/SpacePoop> The Space Poop Challenge

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