



**ROYAL
AERONAUTICAL
SOCIETY**
AUSTRALIAN DIVISION
SYDNEY BRANCH

JUNE 2018

Vol 2018-4 ABN 75 134 058 731

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<https://www.facebook.com/groups/RAeSSydney/>

NEWSLETTER

'AVIATION SAFETY AUSTRALIA 2018 - THE BIG ISSUES'

Date: **Wednesday 27th June, 2018**

Time: **08:30 to 17:00 followed by Dinner 19:00 to 22:00 hours**

Venue: **Four Seasons Hotel, 199 George Street, Sydney**

To view map please click/copy and paste into your web browser the following:
www.fourseasons.com/sydney/destination/directions and [maps/](#)

The RAeS Australian Division is hosting a one-day intense focus on the challenges and solutions, emerging and current, related to these topics, across the commercial aviation sector. Three fast-moving sessions through the day, to be driven by facilitators chosen for their knowledge and ability to stimulate debate and cover all aspects of the topic.

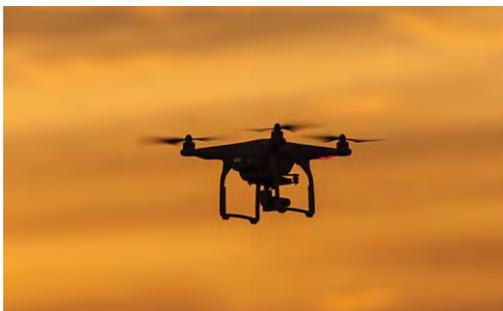
DRONES: ASSIMILATION INTO CURRENT AIRSPACE
FLIGHT DECK: TRAINING STANDARDS & THE MAN-MACHINE INTERFACE
AIRPORT AND CYBER SECURITY: WEAKNESSES & CHALLENGES

SESSION LEADERS

DRONES: BEN MARTIN **FLIGHT DECK:** RICHARD WOODWARD **SECURITY:** GEOFF ASKEW

COST: CONFERENCE SESSIONS: \$350 NETWORKING DINNER: \$150

ATTENDING: CASA Airservices Australia ATSB Department of Infrastructure QANTAS Airways
Virgin Australia Tigerair Regional Express Alliance Airlines AAA RAAA AIPA AFAP
Cobham Nova Systems AISL AAUS ACUO HCAP BHP Billiton Westpac Helicopter Rescue
RFDS AOPA MSS WSA Norton White UNSW Aviation USQ



ORGANISING COMMITTEE: GEOFF SARTORI FRAES (CHAIR), DAVID FORSYTH AO FRAES
ANDREW DRYSDALE FRAES, JOHN VINCENT FRAES
Royal Aeronautical Society Australian Division Inc

Enquires: DOUG NANCARROW 0417 695 002, GENERALMANAGER@RAES.ORG.AU

Special Offer for Sydney Branch Members

Sydney Branch members may attend the Day Conference at a special price of \$250 and also the following dinner at a discounted price of \$100 per person.



Parking: Please note that access around the Hotel and in the Central Business District (CBD) has changed due to road closures associated with the light rail project on George Street. We suggest you allow additional travel time on your day of departure. Road closures are subject to change. (Refer to map and also www.fourseasons.com/sydney/destination/directions_and_maps/)

Public Transport: Train and buses to Wynyard and/or Circular Quay and /or Martin Place and short walk to the Four Seasons Hotel. Please allow time to travel by public transport, including waiting time, and time to walk to the venue from the various transport stops. Please refer for further details: www.sydneybuses.info/routes/timetables-route-maps

Closed Member Only Group on Facebook: Sydney branch is live video streaming our monthly branch lectures. Watch lectures live or at a later time, at the "RAeS - Sydney Branch - Members Only" group within Facebook. Please note that this service is only available to financial members of the

Royal Aeronautical Society.

60th Sir Charles Kingsford Smith Lecture and Annual Branch Dinner: Mark your diaries – The 60th Sir Charles Kingsford Smith Lecture will be held Wednesday 7th November at the Powerhouse Museum, 500 Harris Street, Ultimo. The speaker will be Vince Di Pietro, Chief Executive, Lockheed Martin Australia and New Zealand. This date is close to the in-country arrival of the F-35 (anticipated week of 10 Dec). Further details will be advised shortly.



Australia Youth Aerospace Association (AYAA) – Aerospace Futures Annual Conference:

Occurring across state capitals annually, the Aerospace Futures Conference is an important event in the Australian aerospace industry calendar and has been an immense success with a total of 1000 delegates, 80 organisations involved. 2018 will be the very first year that the Aerospace Futures conference will be coming to Canberra in its decade long history. The venue is: ADFA Adams Auditorium, Canberra – map reference: www.google.com/maps/place/Adams+Auditorium/@-35.2980438,149.1487173,14z/data=!4m5!3m4!1s0x0:0xb37f3c514a9d25918m2!3d-35.2938402!4d149.1655397?hl=en-US
The timing and location for Aerospace Futures 2018 is impeccable with the upcoming mobilisation of a National Space Agency. The event will attract a wide variety of prestigious industry speakers to the ACT. Targeting a record 250 youth delegates and 150 invited professionals, the event is focused towards undergraduates, postgraduates and young professionals from across Australia and New Zealand. With strong support from government, industry and academia, you are warmly invited to our celebration of Australia's Aerospace Industry. For further details refer: aerospacefutures.ayaa.com.au/

The Australian Space Agency - Report by Henry Thai: The Australian Space Agency, with a soft launch by Senator Michaelia Cash in Perth on the 14th of May, was a welcome gesture for Australia's space industry. The official figures all hail in rosy prospects, 20,000 jobs, and other improvements across the board, but it is important not to lose sight of what the immediate future holds, and what the past has taught us.

The topic du jour was addressed by Dr Jason Held in the Royal Aeronautical Society, Sydney Branch's May lecture, as well as an interview that Henry Thai conducted on the 15th of May between the RAeS and the Shadow Minister for Innovation, Industry, Science and Research, Senator Kim Carr during which the Senator expressed some reservations about the announcement of the agency and the funding, highlighting the sobriety given the imminent election.

Kim Carr: Their [the Government] approach to the establishment of the agency location, particularly given the experience we've seen with the ship building programme, where, there's a constant attention to marginal seat strategy rather than national imperatives.

Henry Thai: It's almost like *Yes Minister* playing out in real life.

KC: That's what happens here, you know, it's very late, as I say, a late discovery. I'm of the view the election is just around the corner, so everything they're doing is geared towards pre-election arrangement. You know, their infrastructure announcements today, set against the pre-text where you actually have a look at the Budget papers, and they've only got five million dollars for national research infrastructure investment in this year's, eighteen, nineteen, but then they say "oh well we've got, you know, one point two billion dollars over the next twelve years", you know, so it's, within the context where you're taking two point four, two point five billion dollars, out of the research and development budget, so, over the forward estimates, over the next, four years. So, you know, you've got to be very careful about reading the fine print, and all of these arrangements, particularly in the context of an imminent election.

With that said, both the establishment of an agency alone, and the funding going into is not the only, nor prime and overriding concern. Dr Jason Held, in his lecture, made a particular note of the environment within which the industry operates here in Australia, as well as the barriers that we face when exporting technologies. It was not without a sure foundation, that Dr Held suggested operating in a system, not too dissimilar to start ups. This may prove more fruitful given the very unique circumstances Australia is operating in; the tardiness of entry, barriers to entry, finance, among others.

Some members of the industry also expressed a concern about the history of space in Australia, and the bureaucracy involved in Canberra. When put to Senator Carr, he noted that though experience and knowledge is important, there remains a few factors that we may forget, but are vital nevertheless.

HT: Senator, [in the past we had] the Australian Space Office, that was set up in the period after the Madigan Report in nineteen eighty-five, [and] failed. The criticisms around that [pertained to] insufficient funding, and there was very little experience in those heading the office.

KC: Look, I think you ought to look in the context here, Australia is a country that is more dependent on spatial technology than any other in the world. And even within our somewhat backward approach to these issues, it has to be remembered that Australia, I think, has ninety odd programmes in the Commonwealth Government, dependent upon spatial technologies, ninety plus programmes. So this [has] been an acknowledgement, certainly in the scientific community for some time. You don't necessarily have to have a person that's a preeminent expert in a particular field to lead a policy conversation. What you need is someone that has real experience of navigating the great maze of public institutions that exists in this country, to develop the necessary public infrastructure, necessary to secure a space agency.

The home for Australia's space agency is an ongoing debate, and indeed a topic that has many divided. Simply passing it off as "divided" would be an understatement. When the topic was brought up during Dr Held's presentation, it received a vigorous few minutes attention from several audience members. Hubs, nodes, or a national centre in Canberra were all ideas floated. Senator Carr also weighed in during the interview with his view on a headquarter in Canberra.

KC: I think we need to have a national space agency based in Canberra. This is a national pursuit, it should be an agency dedicated to the development of national capacities, not the marginal interests of the government as, and I'm very concerned that the government's approach about trying to get the states to compete for the establishment of the agency really does reflect the approach that they're taking to ship building; which is, rather than national capacity, they are looking towards their own narrow political interests in these matters. What I say though, is that we should have a national agency based in Canberra, with nodes in each of the states, so we maintain the efforts of each of the state governments, to secure the future of their contribution.

Whilst in Australia we are placing our worries in matters on earth, matters in space are also pressing upon us. Though the industry at large, has already been disrupted by the private sector, and grown with immense speed, space is not immune from the scourge of that dreaded cliché, disruption. Of the shifts in space that will lead more cost effective technologies, or faster spacecraft, Dr Held raised 3-D printing in space as a possible disruptor, as well as the continually developing realm of propulsion.

Though progress is being made, it's most crucial foundations must be set. Today we may be concerned about brain drain, but there is indeed more to that.

HT: ...not just with research, but going back to STEM, whether in primary school, high school, or university, what sort of changes need to be made, such that people can get into this industry in the first place?

KC: This is the point, we are looking about a fundamental transformation of our industries. I read this as quite an important question for our vocational education system, as well as what's happening in terms of the future development of our research programme and research training programme. So, it's not just confined to the universities, it goes right through our capacity to train for our citizens, for the jobs of the future. Now that does mean, we have to start to think about what we do at the primary school level. It will have an impact right across the board.

In taking a step back to look more broadly at the industry Dr Held also raised the important notion of international competitiveness. When looking at a community of start-ups, versus a number of mid-sized companies, the latter is indeed more favourable, the risks, perhaps lower, especially as an overseas customer or investor looking at the Australian market. The mid-sized company, as Dr Held noted, would be generating around \$20 million per year.

No doubt then, the all too familiar notion of a "uniquely Australian challenge" finds itself deeply embedded in the space industry in Australia. A country heavily dependent on technologies, but with little hardware. A country with great brains and potential, but also sinkhole that needs to be addressed with more speed. A country that may not do well in adopting approaches analogous to those elsewhere, perhaps even find it fruitless, but indeed a country that has a potential solution that will progress it into a vibrant, and prosperous industry.

* The Minister, Senator Michaelia Cash, has been reached for comment, however is yet to reply.

INVITATION: Senior Student Aerospace Design Presentations. *Members* are invited to attend the AERO4460 Aerospace Design 3 Final Presentations session on Thursday 7th June, 2018 commencing at 3pm. The venue will be the Mechanical Engineering Lecture Theatre on the University of Sydney campus. Students will have a poster and model display of their aircraft from 2pm onwards to give you an initial opportunity to engage and learn about their design.

The presentation will be followed by nibbles and drinks to give you a chance to meet the students. This year student teams have been working on the design of a high altitude long-endurance reconnaissance aircraft with a target 30 days of endurance at 70,000ft. The students are now completing their final year of the Aeronautical Engineering program and as usual are keen to display the skills and knowledge they have acquired over the previous 3 years. Attendance at this event and any feedback that you are able to provide on their ideas and efforts would be much appreciated. If you able to attend please email **Dries Verstraete** at: Dries.Verstraete@sydney.edu.au

Tour of Sydney Airport Air Traffic Management Facilities: A tour of the Sydney Airport Air Traffic Management Facilities has been arranged for **Members Only**, Saturday 23rd of June 11:00 to 14:00 hours. Numbers are limited to 12. Would members who are interested in participating in this tour please email Henry Thai (henry.thai@live.com) with your full name and membership number. Please note that a **minimum age of 16 applies** and **all attendees must be mobile** as there are stairs to negotiate.

In need a ballot will be held if more than 12 nominations are received and the successful members will be advised via email of the details for this event. Please note that arrangements are in place for further tours of these facilities which will be scheduled monthly for the next few months.

Sydney Fellows Evening held 16th May, 2018 at the Kirribilli Club: The Sydney Branch Chairman,



Mr David Cox FRAeS opened the evening by explaining why the Sydney branch organised this event.

The reason starts with the purpose of the Society. Later this evening we will be handing out certificates for our new Fellows and on those certificates is recorded the purpose of the Society:

".....The general advancement of aeronautical art, science and engineering and more particularly for promoting that species of knowledge which distinguishes the profession of Aeronautics"

But how do we do that? The simplest answer is people - Networks of people. Students of economic history will know that

the diffusion of technology and the development of new ideas is built on networks of people. Those of you familiar with the history of the Industrial Revolution will know of the impact of the Lunar Society. This brought together people like Watt and Wedgwood. They gathered to share knowledge and resources and develop new ideas. The Royal Society upon which our society is modelled fulfilled a similar function. So the first purpose for tonight is to create an opportunity for us to build a network, to share ideas and knowledge. Given the size of the Australian industry and the maturity of some of the technologies on which the people in this room have worked you may ask is this worth the effort? Anyone who attended Susan Ying's lecture last month would know the answer to that.

We stand on the edge of what will undoubtedly be recorded as one of the major revolutions in aerospace. This is the revolution of electric power, autonomous vehicles, air taxis, space, and hyper-efficiency. Be sure that Sydney has a role to play in this. There is a huge amount of autonomous vehicle research going on in this city. We have just launched an Australian space agency and the New South Wales government is looking at a policy to stimulate Aerospace in the state. There has never been a better time to get involved.

The second question you might ask is why you? The answer is again simple. You are Fellows of the Society. This marks you as special. Being a Fellow is an honour that says to everyone around you that this is someone who has particular knowledge and experience of value to the profession. So of course one of the most valuable networks we could build is around our Fellows. Another attribute I know you possess is passion. You can only get to where you are through a long hard slog that requires passion and love for what you do to succeed. This makes you doubly valuable.

On one level, knowledge and passion provides the framework for a network to pursue the development of aviation and aerospace in this city. At another level that passion and experience is critical to inspire the next generation. So another reason for building a network of Fellows is to provide a resource which we can call upon for student networking events and other activities that will bring the next generation of pilots, engineers and technicians into our industry. Throughout the year we hold regular events with students. I'm hoping in the future that we can reach out to each of you to participate. The students' needs are very simple. They just want to hear from someone in the industry, share your experience and be inspired. Every one of you has done things that these young people only dream about.

One final duty for us all is to continue to build our network of fellows by identifying individuals with the right experience and skills. As we do that we need to pay particular attention to building the diversity and equity of our group. I would really encourage you to think about people in our industry who should be in this room - people from all backgrounds and all sectors of the industry. Your committee would be only too happy to receive those recommendations and act upon them. So thank you for coming. I look forward to building a network of Fellows in this city to achieve the purpose of the Society and to inspire a next generation.

Below are the presentations of the Fellowship Certificates made to **Ian Cheng FRAeS, Capt Douglas Hayward FRAeS, Warwick Holmes FRAeS, and Professor Gabriel Lodewijks FRAeS**, by David Cox FRAeS and John Vincent FRAeS (representing the President of the Society, Mr Andrew Neely) as well as a group photo of all who attended the evening.





Wings Awards Nominations are Open: The Wings Awards take a panoramic view of the general aviation (GA) industry by recognising the achievements of aviators, aero clubs, instructors and training organisations that form the backbone of the GA industry. Excellence will be recognised across four categories: “Col Pay Lifetime of Service to General Aviation”, “Aero Club of the Year”, “Flying Training Organisation of the Year” and “Flying Instructor of the Year”. Nominations close on the 2nd July. For more information, or to nominate an outstanding contributor to general aviation, see the website for details at <http://www.australianflying.com.au/wings-awards> **Winners announced in Australian Flying Nov/Dec 2018. Week of 29 October: Awards to be presented in RAeS branches.**



Satellite-Based Augmentation System (SBAS) trail: Australia’s Satellite-Based Augmentation System trial is enabling the safe travel of ocean liners and regional aircraft and is already showing results in the aviation and maritime sectors, with real-world use cases demonstrating the potential benefits for the nation. The improved positioning accuracy and integrity of the satellite technology will potentially benefit a wide range of industries, including agriculture, mining, transport, construction and utilities. The aim is for civilian operators to be able to pinpoint location to an accuracy of 10 centimetres or better, as opposed to 10 metres at present.

In the Air: Continuous vertical guidance is one of the most important tools available to a pilot during the final stages of flight. It ensures the crew can maintain a safe height above terrain and obstacles when approaching a runway. In adverse weather, such as low cloud, they can also descend to a lower altitude before needing to make visual contact with the airport. This continuous vertical guidance decreases the chances of a pilot undertaking a go-around or having to divert, saving both fuel and time.



In Australia, vertical guidance has historically been provided by technology like the ILS and in more recent times, accurate Baro-VNAV, RNP AR and GBAS. However, these recent technologies are usually only found in large aircraft, mostly Boeing and Airbus. A Satellite Based Augmentation System (SBAS) allows regional carriers who fly turboprop and smaller aircraft to reap the same benefits as larger aircraft without the need to install ILS infrastructure. [Airservices Australia is leading a project](#) to guide aircraft to an accuracy of a few metres, with the aim of improving safety and efficiency in our skies. Airservices’ CEO Jason Harfield said the technology will greatly benefit regional carriers such as REX, QantasLink

and the Royal Flying Doctor Service. “This trial will test three new technologies: first-generation SBAS, second-generation SBAS and what’s known as Precise Point Positioning,” Harfield said. “SBAS-assisted approaches are eight times safer than those which use ground-based navigation aids. “This extraordinary new technology, which provides improved navigation and timing over GPS, will also decrease the likelihood of ‘go arounds’ and cancellations or diversions due to variable weather,” he added.

Which parties are involved in the project, and what are they doing?: Geoscience Australia is leading the project with Lockheed Martin. The Australian Cooperative Research Centre for Spatial Information will coordinate the demonstrator projects that test the SBAS infrastructure. Land Information New Zealand is coordinating New Zealand participation. Lockheed Martin will provide systems integration expertise in addition to the Uralla radio frequency uplink. GMV-Spain will provide its 'magicGNSS' processors. And Inmarsat will provide the navigation payload hosted on the 4F1 geostationary satellite.

First in the world: Geoscience Australia is currently assessing SBAS technology across Australia using information gathered from trials in multiple sectors including agriculture, mining and aviation. The over 25 SBAS projects will consider the benefits of the highly accurate positioning available using SBAS technology. Geoscience Australia's SBAS Project Manager, Dr John Dawson, said while many countries already use first-generation SBAS technology, which improves positioning accuracy to within half a metre, in 2017, [Australia became the first country to test second-generation SBAS](#) with integrated Precise Point Positioning corrections. "Standalone GPS positioning is giving you 5- to 10-metre level positioning. This is the first time we have been able to broadcast corrections at the 10-centimetre level to the entire country, in fact to the entire region, so it's quite new. "We're touching all the major transport sectors. We have intelligent and automated vehicle trials going on land, we have some rail projects and, of course, the aviation sector is very interested in SBAS technology," he added. "We also have projects improving the navigation of pedestrians, particularly those pedestrians with visual impairments." The SBAS trial is being funded with \$12 million from the Australian Government and a further \$2 million from the New Zealand Government. It is managed by Geoscience Australia in partnership with GMV, Inmarsat and Lockheed Martin.



Wings Over Illawarra 5th-6th May 2018: Wings Over Illawarra was undoubtedly an exciting weekend for the aspiring, the enthusiasts, and the stalwarts. This year, there were a few new additions to keep the little ones occupied, but perish the thought, that they wouldn't already be preoccupied with the full schedule of flying displays, and impressive curation of static displays. There were unique opportunities to get up close to the great warbirds, and other aircraft, venture inside the bowels of a Catalina, even sit in the gunner's seat. The lines at each display were long, but the excitement, unabated, as the young, or young at heart, waited for the opportunity to sit

in the pilot's seat of a fighter jet, or tour the Connie. A handful even daringly embarked on a walk across the wings of the 747 that sat proudly beside the HARS Hangar.

The Royal Aeronautical Society's presence in the main hangar, amongst a melange of Australia's most iconic aircraft was quite nostalgic. It was pleasing to have umpteen different people approach us, whether to ask us who we are, what we do, or even just to strike up a chat, and reminisce about old times. We hoped that with our presence there, along with Women in Aviation a few stalls down, we would inspire the next generation with the drive to join a small, but growing industry in Australia. The VR headsets, and models didn't go amiss, putting kids, and even parents, in the pilot's seat, landing aircraft, and even spacecraft.

It was also a joy to have old members, members from other branches across Australia, even across the world, drop by for a quick chat, reminisce, and discuss what's happening with aerospace at home. It didn't stop at a handful of raconteurs though, with some engaging in vigorous and lively debates on how to push the industry forward in Australia, be it economically, or technologically.

Two days of sights, sound, and sun, the air show had a good run with the weather, and indeed a healthy influx of people to experience what was an incredible air show, an



air show that didn't forget to finish on the note that it had so many times before, with the wall of fire.
Report by Henry Thai.

Society Merchandise for Sale: Sydney branch has a selection of Society Merchandise for sale at its regular monthly meetings. Items include Society Ties, Pins, Lapel Badges, Silver Kestrel Brooches, and Mugs.



Our Sales Director, David Adkins accept cash, cheques and credit cards through PayPal.

Aerospace Websites: 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 : Diary of Boeing 707-138B XBA formally Qantas EBA.
www.airshow.com.au www.atsb.gov.au www.aviationmuseum.com.au - Temora Aviation Museum;
<http://boxkite2014.org/book/book.htm> - The Boxkite project.

https://en.wikipedia.org/wiki/Rolls-Royce_Trent

<http://hars.org.au/> Historical Aircraft Restoration Society

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

www.powerhousemuseum.com/whatson

<https://qfom.com.au/> Qantas Founders Museum, Longreach, Qld <http://www.singaporeairshow.com/>

<https://www.youtube.com/watch?v=JGjmRRTTThdk> How TIME created their new cover image with 958 drones

http://www.rbogash.com/B-52/B-52_Disassembly.html How to move a B-52 without flying it – The Final Disassembly and Transport Update for the move scheduled 3/6/2018 - with the wings split and the fuselage in final stages of prep before hitting the freeway.

Diary: June 7: The AERO4460 Aerospace Design 3 Final Presentations commencing at 14:00 hours in the Mechanical Engineering Lecture Theatre, University of Sydney campus. See article on page 4.

June 27: Australian Division Safety Event – Remotely Piloted Aircraft Systems (RPAS), Skill Shortages, Security - Four Seasons Hotel Sydney, 199 George Street.

July 3-6: Abstracts containing no more than 300 words are now invited for the 2018 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. Closing date for abstracts is 13 April. For further details refer: <http://www.ageingaircraft.com.au>

July 16-19: Australian Youth Aerospace Association (AYAA) – Aerospace Futures Annual Conference – will be held for the first time in Canberra. For further details refer: aerospacefutures.ayaa.com.au/

Sept 9-14: 31st Congress of the International Council of the Aeronautical Sciences, Belo Horizonte, Brazil. Refer details: <http://icas.org/media/ICAS2018CallforPapers.pdf>

Oct 1-5: 69th Annual International Astronautical Congress will take place in Bremen, Germany. Call for Abstracts is now open and closes 28 February 2018. For further details refer: <https://iafastro.directory/iac/browse/IAC-18/catalog-technical-programme>

Oct 16-18: Call for Papers (close 1 July, 2018) for the 10th Asia-Pacific International Symposium on Aerospace Technology (APISAT 2018) to be held in Chengdu, China. APISAT is an initiative by the national aerospace societies of Japan (JSASS), Korea (KSASS), China (CSAA) and Australia (RAeS Australian Division). Founded in 2009, the conference has grown steadily over the past decade and is an important regional conference in the aerospace calendar. Refer details: www.apisat2018.com

Nov 7: Mark your diaries – The 60th Sir Charles Kingsford Smith Lecture will be held Wednesday 7th November at the Powerhouse Museum, 500 Harris Street, Ultimo. The speaker will be Vince Di Pietro, Chief Executive, Lockheed Martin Australia and New Zealand. This date is close to the in-country arrival of the F-35 (anticipated week of 10 Dec).

Nov 15-17: Aviatex - Australia's largest and most comprehensive general aviation trade show and aviation careers expo, Bankstown Airport. Refer details: www.aviatex.com.au

Dec 7: The Sydney Branch Christmas and final meeting for the year will be addressed by Mr Greg Hood, Chief Commissioner, Australian Transport Safety Bureau. Further details to be advised.

Feb 9, 2019: The fiftieth anniversary of the first Boeing 747 flight.

July 20, 2019: The fiftieth anniversary of the first men walking on the moon.

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