



**ROYAL
AERONAUTICAL
SOCIETY**
AUSTRALIAN DIVISION
SYDNEY BRANCH

JULY 2019

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NEWSLETTER



Title: **'Western Sydney International
(Nancy-Bird Walton) Airport'**

Speaker: **Mr Graham Millett
Chief Executive Officer
Western Sydney Airport**



Date: **Thursday 4th July, 2019**

Time: **18:30 hours (sharp)**

Venue: **Mechanical Engineering Theatre
Mechanical Engineering Building
University of Sydney**

Refreshments will be available prior to the commencement of the meeting. Attendance will attract 1.5 CPD hour

Profile: Graham Millett arrives at the challenge of overseeing the delivery of the \$5.3 billion Western Sydney Airport with more than 20 years of senior executive experience across aviation and telecommunications infrastructure.

Having grown up in Western Sydney, Mr Millett's time working in the United States, Europe and Asia means he is well placed to combine local knowledge with international experience to bring the region to the world through Australia's next-generation airport.

As Group General Manager of Qantas' Property and Procurement Divisions, Mr Millett managed terminal redevelopments at Sydney, Melbourne and Canberra airports, as well as the multi-billion dollar procurement of 65 Boeing 787 Dreamliners for the Australian national carrier. Mr Millett also served as Head of Facilities and Fleet for NBN Co, responsible for a \$1.2 billion property portfolio.

His experience in complex airline operations and infrastructure is supported by his personal love of aviation. As a trained pilot, Mr Millett understands aviation from every perspective, helping him lead a team to deliver an airport experience that will be as transformational for airlines and freight operators as it will be for passengers.

Mr Millett holds a Bachelor of Economics and Master of Business Administration. He is also currently a Director on the Board of St George Community Housing and has previously been a member of the Advisory Panel of the Board of Airline Representatives Australia and Chairman of the International Air Transport Association's Australian Airports Consultative Committee.

Synopsis: Western Sydney Airport CEO, Graham Millett, outlines the vision for Sydney's newest airport, Western Sydney International (Nancy-Bird Walton) Airport. Having identified the need to provide additional aviation capacity in the Sydney basin, the Federal Government established Western Sydney Airport to plan, construct and operate the new airport at Badgerys Creek. Australia's first greenfield airport project in decades, Mr Millett will discuss the immense opportunity that comes with developing a smart airport to meet our evolving aviation needs.



Agenda: 18:30 hours sharp: **Presentation by Graham Millett**
19:45 Hours: Q & A
20:00 Hours: **Light supper** (pizzas) will be provided to give the speaker and attendees the opportunity to mingle and to continue discussions.

RSVP: Registration for the evening **is required**. Please register by clicking on/copying and pasting into your URL this link: <http://raesjuly19.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. Any member who does not have access to the internet can send a letter to Mr Jeff Lock, 4 Hillcrest Place, North Manly NSW 2100 with your name (plus names of accompanying persons), membership number or state 'Friend' if you are a Friend of the Branch, and phone number.

Lecture registration includes:

- **Attendance at the Lecture and Q & A session**
- **Networking opportunities at the welcome tea and coffee**
- **Following the presentation, light supper (pizzas) will be provided to give the speaker and attendees the opportunity to mingle and to continue discussions.**

Introduction of a Non Members Fee to attend monthly presentations: As previously advised, the Sydney Branch Committee has introduced a 'Non Members Fee' to attend our monthly presentations. The fee, initially set at a **Special Rate of \$10** per non-member, will increase to \$15 mid-year. The 'Non Members Fee' will not apply for all presentations. However, it will be clearly displayed when registering on the Eventbrite site – and is payable via credit cards. Should a 'Non Member' not register via Eventbrite, credit card payment facilities will be available on the evening, if a fee is payable for that evening/event.

Join the Society immediately and enjoy free lecture attendance: **Students are free in the first year; join immediately as an Affiliate with no entry restrictions; members receive the Aerospace magazine, and can nominate for and vote in Sydney Branch and Australian Division elections. Refer for further details:** <https://www.raes.org.au/membership/join-now/>



Parking: is available in the Shepherd Street multi-story car park, located on the corner of Cleveland St and Shepherd St. The rate is \$2 per hour (up to \$6 maximum), but note that only gold coins are accepted in some machines. Parking is also available in University of Sydney On-Campus Parking for \$2 per hour (up to \$6 maximum). Additionally, free parking is available in surrounding streets. Please observe parking restrictions and allow time to drive to the University of Sydney, park, and walk to the venue. **Venue map copy and paste address into your browser:** <http://sydney.edu.au/maps/campuses/?area=CAMDAR> Scroll down the 'Building Bar' on the left hand side to: Mechanical Engineering Building J07 and click.

Public Transport: The closest train station is Redfern station, which is a 10 minute walk away from the venue. From Railway Square near central station any 42X bus (e.g. 422, 426...) and the M30 will take you to the University of Sydney (on City Road). Please allow time to travel by public transport, including waiting time, and time to walk to the venue. Please refer for further details: <http://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.

AIAA Student Projects - UNSW Rocketry and Design Build Fly Teams:

Over the past year AIAA UNSW has established two amazing aerospace student projects. The AIAA UNSW Rocketry Team designed and built a rocket to compete in the inaugural Australian Universities Rocketry Competition in the 10000ft category from the 17th - 21st of April, 2019, and the AIAA UNSW Design Build Fly Team.



The Rocketry Team achieved a successful first launch of the Ainsworth 203 rocket at the Thunda Down Under rocketry event held in southwest Queensland, which included retrieving the entire rocket intact, post-launch. While missing out on a placing, the result meant one of the team members, Projects Director Justin Tran, was awarded a 'High Power Rocketry Level 3 Certification' which ensured the group can launch bigger rockets in the future. Justin,

who is three years into a double degree in Aerospace Engineering and Business, says the experience was the most challenging, yet rewarding experience the AIAA UNSW Rocketry Team has participated into date. Justin says that seeing so many students and hobbyists come together for their love of rocketry really "lit a fire within the team"...so to speak. To view the launch click:

https://www.youtube.com/watch?v=pQmi5_59EH0&feature=youtu.be

The second team set up in late 2018, is the **AIAA UNSW Design Build Fly Team**, who designed and built a small-scale electric-powered aircraft and was the only Australian team competing in the 2018-19 AIAA/Textron Aviation/Raytheon Missile Systems Design/Build/Fly Competition Flyoff held at TIMPA Field in Tucson, AZ on the weekend of April 11-14, 2019. This was the 23rd year for the competition. Of the 138 proposals submitted and judged, 113 teams were invited to submit a formal report for the next phase of the competition. 104 teams submitted design reports to be judged, and 77 teams attended the flyoff (21 international).

The Fly Competition Flyoff contest theme this year was Aircraft Carrier Operations. Each aircraft was required to have a 4 foot minimum wing span. To simulate the transition from the hanger to the flight deck, the aircraft were required to roll through a 3 foot x 2 foot box necessitating wing folding and locking mechanisms which had to operate remotely and without external assistance. The aircraft were required to complete three flight missions, each taking off from a 4 foot by 10 foot "carrier flight deck". The first mission was a Delivery Flight with no payload for three laps within five minutes. The second mission was a Reconnaissance Flight with the addition of a radome which was required to be fixed during take-off and landing but rotating during cruise. The final mission was an Attack Flight which included the dropping of foam "attack stores". To view the competition click:



<https://www.youtube.com/watch?v=ZBVvAhk9eCg>

First Place went to the University of Ljubljana, Slovenia, (www.uni-lj.si/university/) Second Place went to the Georgia Institute of Technology, and Third Place went to the FH JOANNEUM University of Applied Sciences, Austria. (<https://www.fh-joanneum.at/>) The Best Paper Award, sponsored by the Design Engineering TC for the highest report score, went to the University of Southern California with a score of 93.13. The marks for their Paper were positive however the flying was unsuccessful. Overall they came 72 out of 104 entrants and the experience of a focussed international competition was a 'valuable learning curve'.

\$3.2b cost drives Qantas Innovation: With a \$3.2 billion fuel bill in 2018, Qantas is turning to technology and data to deliver business efficiencies in a bid to drive down its massive cost base. Speaking at the Amazon Innovation Day in Sydney as part of the AWS Summit, the flying kangaroo's CTO, Rob James, admitted that it is "easy to forget some of the grandest and oldest organisations were born of innovation".

He noted that Qantas — now entering its 100th year, making it the oldest continuously operating airline in the world — now has a 30,000-strong workforce and flies close to 60 million people each



year. But the airline was originally established as Queensland and Northern Territory Aerial Services, which initially built its own aircraft.

According to Mr James, innovation has been part of Qantas ever since. For example, it's a little-known fact, but Qantas actually brought Australians 'Business Class' travel," he said. Mr James also cited the establishment of low-cost offshoot Jetstar in 2004 as another example, which he said had been unsuccessfully attempted by other full-service airlines around the world. Yet 15 years on, the subsidiary "contributes almost \$1 billion to the underlying profit of the Qantas Group". Another example, he said, was last year's rolling out of a 17-hour non-stop service between Perth and London — the first time that the Australian continent has been connected to Europe in such a way. However, he confessed that "as a 99-year-old old company, sometimes I think some of our systems are that old as well", meaning that Qantas is increasingly focused on "pushing the limits" to modernise and drive positive change.

Using data to slash costs: Mr James said that a prime target for innovation comes down to reducing Qantas's massive spend on fuel, which hit \$3.2 billion last year - anywhere between 20 and 40 per cent of an operating cost for an airline." He added: "So you want to fly... as efficiently as possible." As such, Mr James explained that Qantas, in partnership with Sydney University and the Australian Centre for Field Robotics, developed the QuadraX flight planning algorithm. The system uses massive amounts of data across different flight paths, in different weather conditions and altitudes, and using different aircraft and engine configurations, in order to simulate optimal efficiency. These simulations help the airline tailor its routes and the aircraft chosen to service those routes to achieve maximum return on investment. Using the new 787 Dreamliner aircraft as an example, Mr James said that "every time they land, we download half a terabyte of sensor data that we can analyse". "Every time we run one of these simulations, we're doing a 10-year study in about nine hours... in the cloud," he said. "And that is dwarfed, in comparison, to what we expect in the future."

Fifty Years After Apollo 11: For members who wish to follow the 50 day lead up to the 50th Anniversary of "Walking on the Moon" 20th July, 1969 – please refer to: [Does-your-brain-works-in-space-but-when-president-kennedy-said-wed-go-to-the-moon-we-didnt-know-that](#) and follow the registration details.

The 50 articles have been written by Charles Fishman, who is the author of One Giant Leap: The Impossible Mission That Flew Us To The Moon. His 50-part series, 50 days to the Moon, is appearing between June 1 and July 20.

Reports on Wings over Illawarra May 4-5: The Annual Airshow and Exhibition has become a well organised enjoyable event. The weather on the Saturday was perfect for the people and the day long Flying displays. As usual there was a large range of static displays including important historical Military and Airline aircraft. How incredible to see the Replica Southern Cross mated to its new wing and nearer to again flying. A minor engine problem has kept the Connie grounded for a while, but will soon be back in the air thanks to the incredibly large number of skilled volunteers who keep HARS at the front line of flying museums. Progress on building the wing for the total NEW build Lockheed Lightning P 38 is progressing and showing first class workmanship.



The Flying program was varied and continuous over nearly 7 hours. The RAAF was well represented with a group of 4 Roulettes demonstrating the PC 21 which is the new trainer for Air Force pilots, the truly great C 47 or DC3, the DHC 4 Caribou, C 27 Spartan, and the serious end of heavy lift the C-17. The RAN MH 60R Helicopter gave an impressive handling display of a large machine, and a great display by the beautiful Boeing Stearman PT 17 basic trainer, followed by exciting Aerobatics by the Wolf Pitts pecial, and the early English Jet Provost trainer. The Highlight of the show for me were to hear the Hawker Hurricane; Spitfire and two CAC 18s (locally built P51 D Mustangs). Nothing beats the wonderful symphony of a V 12 Merlin engine.

Reporter: Mr Stephen Kuhl

Cool Aeronautics: In a first for the Sydney branch, the Sydney Branch exhibit at the Airshow included a display from the STEM outreach program, Cool Aeronautics. The display included videos and model aircraft from different aspects of aviation, which were used to promote and educate the next generation on all things Aeronautics. A crowd favourite was the VR fighter jet experience! The Sydney branch will endeavour to build upon this display in the future, as the Cool Aeronautics program continues to build momentum this year.

Reporter: Matthew Coutts

Past Newsletters are now stored on our website: Members are advised that all Sydney Branch Newsletters since February 2012 are now stored on our website. To access this information enter our web address (www.raes.org.au) into your browser, click 'About' then 'Sydney Branch' and scroll this page to the heading 'Sydney Branch Newsletters'. Newsletters are arranged by month within each year heading.

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



Our Sales Director, David Adkins, accepts 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; 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=JGjmRRTThdk> 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.

<https://airandspace.si.edu/collection-objects/assembly-bio-harness-armstrong-apollo-11>

Diary: June 26: 2019 Australian Division Safety Forum – Following a very successful inaugural Safety Forum in 2018 the RAeS Australian Division will shine the spotlight on three more aviation safety issues – to be held at the Four Seasons Hotel, 199 George Street Sydney (08:30 -22:00 hours). To register please click on: raes.org.au/aviation-safety-forum-2019

Saturday July 20: The fiftieth anniversary of the first men walking on the moon. Sydney Branch is arranging a 'Special Event' on the night. Further details to be advised.

July 23-26: 2019 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. For further details refer: <http://www.ageingaircraft.com.au>

July 31: Visit to the Bennett Lab at USYD with displays of the rocket hardware and associated equipment that competed in 18-21 June 3rd Annual Spaceport America Cup which is designed around the Intercollegiate Rocket Engineering Competition - for student rocketry teams. Further details to be advised.

Sept 22-27: 24th International Society of Air-breathing Engines (ISABE) Conference will be held in Canberra. For further details refer: <https://2019.isabe.org/>



Tuesday Oct 8: 61st Sir Charles Kingsford Smith Lecture and Annual Dinner – Lecture to be delivered by Mr Matt Hall who is one of the most tenacious and focused pilots in the Red Bull Air Race and has stood on the second step of the World Championship podium three times in the past four seasons. After coming within three-tenths of a second of clinching the crown in 2018, Matt is pushing harder than ever to remain among the top contenders and close the gap to breakthrough for a maiden title. Matt is a third-generation pilot and his country's foremost aviator. He flew solo in a glider at age 15, got his pilot's license at 18, and has flown more than 6000

hours in various aircraft. A decorated former Wing Commander in the Royal Australian Air Force, he was named Fighter Pilot of the Year in 1997 and became a Fighter Combat (Top Gun) Instructor. Further details to be advised. Please **'Save the Date'** in your diary.

Dec 4-6: Call for Abstracts - **11th Asia Pacific International Symposium on Aerospace Technology (APISAT)**, to be held at Surfers Paradise Marriott Resort, Gold Coast. The symposium provides the

opportunity for industry engineers and researchers of universities and academic institutes from Asia-Pacific nations, to discuss the current and future advanced topics in aeronautical and space engineering. Professionals, young professionals, students, institutes, universities and organisations are invited to submit abstracts and share their experience under the technical streams listed below:

Aerodynamics and Design; Structures and Materials; Dynamics/Control/Avionics; and Combustion and Propulsion. Refer conference website: www.apisat2019.com

15-23 August 2020: 43rd Scientific Assembly of the Committee on Space Research (COSPAR) and Associated Events - COSPAR 2020 will be held in Sydney. Host Organization: Australian Academy of Science; Scientific Program Chair: Prof. Iver Cairns, University of Sydney, School of Physics. Abstract Deadline: **mid-February 2020**, The theme of the COSPAR 2020 Assembly is *Connecting Space Research for Global Impact*. More information can be found at www.cospar2020.org



23-28 February 2021: The Australian International Airshow will comprise industry-only trade exposition days from Tuesday 23 February to Friday 26 February, with public airshow and entertainment days from Friday 26 February to Sunday 28 February. AIRSHOW 2021 CEO Ian Honnery said the RAAF milestone, together with the 2020 Centenary of the formation of Qantas, means organisers are planning for an event that will eclipse Airshow records. For further details refer: www.airshow.com.au



March 31, 2021: Marks the Royal Australian Air Force 100 years as an independent service. For further details refer: airforce.gov.au/our-mission/air-force-2021

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