



# ROYAL AERONAUTICAL SOCIETY

AUSTRALIAN DIVISION  
SYDNEY BRANCH

## DECEMBER 2020

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## NEWSLETTER

### 2020 Christmas Message from the Chairman, Sydney Branch

To say that 2020 has been a challenging year is an understatement. The rapid impact of the COVID-19 pandemic forced the cancellation of events through the first half of the year. The Sydney committee took the view that a conservative approach was required given the nature of our operations and with the primary focus being to protect our membership base. Nevertheless, we were able to rapidly pivot to online delivery of lecture content and as the table shows we've had a surprisingly busy year.

Credit for this needs to go to our Committee. Sydney is fortunate to have a very active committee, and this shows in the amount of work we get through – such as:

- Our prior experience with Facebook streaming allowed us to work closely with Melbourne Branch and support the rapid transition to zoom webinars for most of our content;
- We were fortunate to be able to hold our Fellows evening just before the shutters came down and this will probably be the first face to face event we hold in 2021;
- Matt Coutts leads our Cool Aeronautics activity working closely with the Division and other branches.

One of the great benefits of 2020 has been the step change in collaboration between the branches. As a result, all the Australian Branches have been able to view each other's regular webinars. We have benefited from this already and in the future, even greater benefits will flow. The quality of the lecturers in 2020 and their accessibility to the broadest numbers of members, makes this year possibly the highest standard we have ever achieved despite the challenge of the pandemic.

However, 2020 has been a particularly challenging year for student organisations. For the first half of the year the majority of activities at universities moved on line. In the second half there has been some return to on campus activities although this is far from complete. The branch has maintained contact with student organisations however this will need particular focus in 2021.

Similarly, the branch has stayed in touch with the broader Sydney aerospace community through zoom, and phone contacts with industry leaders, academics, and government.

Our close coordination with the General Manager, Mr Doug Nancarrow, continues and we have seen a steady stream of membership applications, possibly helped by charging non-members a fee to attend our webinars.

In closing, and also on behalf of the Sydney Branch Committee, I wish you all a Merry 2020 Christmas and a very successful 2021 New Year.

We look forward to you joining us again at our first meeting in 2021, 10<sup>th</sup> February

**David Cox FRAeS, Chairman, Sydney Branch**

### Lecture and Events Program 2020

<u>2020</u>	Speaker/Event	Topic/Purpose	Audience	Venue/Format	EA CPD (hrs)
11 Mar	Fellows/Companions & NM Reception	Networking & acknowledgement	F/CRAeS & new members	Kirribilli Club 1800-2000	-
3 June	David Doral, CTO, Head of Eng'g & Krishna Oruganti Tech & Eng'g Manager Quickstep Holdings	Australian Aerospace Innovation	General	Webinar	1.0

24 June	AGM		Members	Webinar	-
15 July	Mark Pinna Principal Design Engr Hawker Pacific Special Missions	From concept to capability Hawker Pacific's role in Australian aviation industry capability	General	Webinar	1.0
6 Aug	Chief of Air Force AM Mel Hupfeld	The RAAF at 100.... what's next for our Air Force	General	Webinar	1.0
2 Sept	Neptune Aviation	Firebombing	General	Webinar	1.0
14 Oct	Shane Arnott	Loyal Wingman	General	Webinar	1.0
5 Nov	Geoff Culbert	Sydney Airport Centenary	General	Webinar	1.0
24 Nov	Alan Joyce AC FRAeS	62 <sup>nd</sup> Sir Charles Kingsford Smith Memorial Lecture and Qantas Centenary	General	Webinar	1.5
3 Dec	Brendan Nelson	A briefing from the new President of Boeing Australia	General	Webinar	1.0
2021 10 February	Panel on Air Taxis	TBA	General	Webinar	1.0

**The Qantas 100th birthday centenary fly past Harbour Bridge:** Qantas, on the evening of its 100th birthday, flew one of its 787s over Sydney Harbour at low altitude and 'blew out' candles



illuminating the Harbour Bridge. The Boeing 787-9 Dreamliner, VH-ZNJ, emblazed with the special '100 Centenary Livery' departed Sydney Airport at 6:61pm as



flight QF100, with 100 specially invited guests, including the Qantas Airlines Groups CEO, Mr Alan Joyce AC FRAeS, and flew south to Shellharbour where HARS Aviation Museum was holding a black-tie dinner in celebration, before heading north again. The flight was a collaboration between Qantas and Destination NSW and involved lighting up the Harbour Bridge with 1,300 LED tubes, 126 LED fixtures and 38 searchlights. The Qantas 100th birthday

centenary fly past Harbour Bridge. Organisers also projected 60 historic images and two, 65-metre-high birthday candles onto the southern and northern pylons, which were 'extinguished' as the plane flew over at 1,500 feet. The flight times was 100 minutes and flew over Sydney's Rose Bay where its iconic flying boats were used in the 1930s and 40s.

Qantas chief executive Alan Joyce said, "Qantas aircraft have been flying over Sydney Harbour Bridge for decades, so this was a spectacular way to mark our anniversary. It's been a tough year for tourism but as more domestic borders open up, we're ready to put more aircraft back in the air and bring people to see all that New South Wales has to offer."

As previously mentioned, HARS Aviation Museum celebrated Qantas' centenary with a black-tie dinner in Hangar 1 surrounded by historic 'Qantas' aircraft. The museum said proceeds from the 'Celebration Dinner' will go towards helping to deliver a 707-138 donated by John Travolta from Georgia in the US to Sydney next year.

The Sydney Harbour flyover can be watched by clicking: [youtube.com/QantasSydHarb100Flight](https://youtube.com/QantasSydHarb100Flight)



**Celebrating the Qantas Centenary at Qantas Founders Museum (QFM):** On 16<sup>th</sup> November,

2020, Qantas turned 100, an incredible milestone for the airline! It is no surprise it was a busy, fun, and memorable day at QFM. Despite the heat of a hot November day, over 300 people enjoyed the special activities the Museum had planned for the day. While COVID-19 restrictions meant the Museum had to scale back its other Centenary events



planned to be held during 2020, it did not dampen the importance and celebration of the big day.



The day started with a morning tea where a beautifully decorated birthday cake made by the Museum's Chef Tyrone Austin, was cut by QFM Director David Fysh and Deputy Chairman Graeme Wills in front of a crowd of Longreach locals and visitors on the Museum front lawn. Once the cake was cut, visitors got to enjoy their own delicious birthday cup cake. Following the morning tea, visitors enjoyed guided tours of the National Heritage Listed Qantas Hangar and Curator's Talk. These tours and the Curator's talk provided guests the opportunity to learn more about the extraordinary

history of Qantas. As part of the Centenary celebrations, Museum entry was free for all visitors who explored the Museum's many displays and exhibitions throughout the day. The Museum's aircraft tours and experiences also operated as normal. Amongst the visitors on the day were many descendants of the early staff, founders and key people in the Qantas story. This included 40 descendants of Alexander Kennedy who was the first Qantas passenger on a scheduled flight. The Kennedy clan had a family reunion afternoon tea at the Museum followed by a talk by Museum Curator Tom Harwood. In the evening, 100 Museum Members and invited guests enjoyed a special three course dinner in the Main Exhibition Hall. Special guests included the Honourable David Littleproud – the Federal Member for Maranoa, the Honourable Lachlan Millar – the State Member for Gregory, Longreach Mayor Tony Raynor and Qantas Regional Manager for Queensland Elsa D'Alessio. The special guest speaker for the evening was Elizabeth Fysh, author of "When Chairmen were patriots" which was published this year, who spoke about the early days and founders of Qantas. Unfortunately four of the Museum's directors including Chairman John Vincent as well as nearly 20 Museum Members were unable to attend the festivities due to COVID travel restrictions. Therefore, Deputy Chairman Graeme Wills spoke on Chairman John Vincent's behalf. As part of his speech, Graeme Wills read a letter supplied by



John Fysh from his father Hudson Fysh which provided great insight into the establishment of Qantas and its founders. Unable to attend the dinner, Qantas CEO Alan Joyce AC FRAeS recorded a video message which was played for the guests at the dinner. Mr Joyce acknowledged the great work of the Museum to preserve the history of Qantas, the important role the communities of Central Western Queensland played in the establishment of Qantas and the tough year Qantas has endured in 2020. Mr Joyce also announced that Qantas would be gifting, on a long-term loan, an exact replica of the 1970's 747 Upper Deck First Class Lounge to Qantas Founders Museum Exhibition. Mr Joyce said he hoped to travel to Longreach to unveil the exhibition and see the Luminescent Longreach experience in 2021.



After dessert, an auction was held for a limited edition of Qantas Centenary collector coins produced by the Royal Australian Mint. There were some strong bidders amongst the guests with the coins selling for \$1,500. As a not-for-profit organisation all proceeds will go to the Museum and its future projects. The Qantas Centenary Members Dinner finished with the guests moving to the Museum Airpark Roof enclosure to enjoy the Museum's new Luminescent Longreach night experience. A memorable night for all on a significant day in the history of

Qantas.

**QANTAS CENTENARY EVENTS TAKE OFF IN 2021:** Qantas Founders Museum CEO Tony Martin said “Qantas Founders Museum is dedicated to telling the story of Qantas and while 2020 has been a tough year, it is important we celebrate this amazing achievement by Qantas. We have planned for our Qantas Centenary Program to include memorable one-off events to mark an extraordinary moment in Australian history and pay tribute to the many people and events that make the Qantas story.” Program of Events is as follows:

- Red & White Gala – Friday 19 March 2021 – Refer to the **Diary** section for details.
- Roaring 1920s Evening - Friday 13 August 2021.
- Qantas Birthday Celebrations -Tuesday 16 November 2021 - On 16 November 2021, Qantas Airways will turn 101 years old and to celebrate, Qantas Founders Museum will provide free entry to the Museum for all.

Further details about Qantas Founders Museum’s events including the Celebration of the Qantas Centenary Program of Events, can be found at: [www.qfom.com.au/events](http://www.qfom.com.au/events). Bookings are essential for all Qantas Centenary events.

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**STOP PRESS                      STOP PRESS                      STOP PRESS**

The 62<sup>nd</sup> Sir Charles Kingsford Smith Memorial Lecture was delivered by Mr Alan Joyce AC FRAeS, Chief Executive Officer & Managing Director, Qantas Group, Thursday 26<sup>th</sup> November, 2020. A video of the event is available on our website: [raes.org.au](http://raes.org.au) - refer ‘Resources-Videos.

Access is restricted to members....if not a member go to our website  
<https://www.raes.org.au/membership/join-now/> to join as an Affiliate.

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**SHARE YOUR KNOWLEDGE AND WORK:** Engineers Australia and the Royal Aeronautical Society invite you to submit an abstract and showcase your work at the Australian International Aerospace Congress (AIAC19), taking place from 22 to 25 November 2021 in Melbourne. Held in conjunction with the Australian International Airshow, AIAC19 will discuss matters which are important in the military and commercial aerospace environment and will highlight new trends and technologies in aerospace engineering. AIAC19 will feature a SPACE stream and incorporates the 12th Defence Science and Technology International Conference on Health and Usage Monitoring (HUMS). Participants will benefit from three days of aerospace specific professional development, as well as the opportunity to network and forge connections with leading Australian and international aerospace engineers and scientists. Aerospace engineers, scientists and researchers can submit an abstract under one of the themes highlighted below which are in line with the overarching Congress theme “New Technologies in Aerospace Operations and Sustainment”.



Congress themes:

- Aeronautics
- Autonomous Systems/UAS
- Operations, Airworthiness & Sustainment
- Space Technology
- Spacecraft Dynamics & Control
- Mission and Trajectory Design
- Health and Usage Monitoring (HUMS)
- Vibration and Acoustic Analysis
- Sensors and Algorithms

Abstract submission deadline is 28th February 2021

For detailed information refer: [aiac.com.au/program/call-abstracts](http://aiac.com.au/program/call-abstracts)

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**Australia, Singapore enhance joint interoperability 27 October 2020 – Part 1:** The Singaporean CH-47 crews, permanently based at Oakey in Queensland, spent two days flying from Townsville to HMAS Adelaide at sea to undertake Deck Landing Qualifications, this process included communicating with the warship’s flight control room and being guided by Australian sailors on the flight deck.

Defence Minister Linda Reynolds said qualifying Republic of Singapore Air Force personnel, to operate their CH-47 aircraft with the Australian Navy, was a force-multiplier for both nations. "Last

week I conducted my second official visit to Singapore, and met with my counterpart Minister for Defence, Dr Ng Eng Hen. During the visit, we jointly marked 30 years of the Singapore Armed



Forces training in Australia," Minister Reynolds explained. "The 30th Anniversary of Singapore training in Australia is a significant milestone in our bilateral defence relationship, and this activity is a clear demonstration of the closeness of our friendship and our growing interoperability."

This latest capability aggregation builds on the foundations of the Australia-Singapore partnership of a shared strategic perspective and complementary economies, the two nations share interests in the political stability and economic

prosperity of the region, and have worked together as like-minded partners to foster these interests. Singapore is Australia's fifth-largest trading partner and one of its longest standing Defence partners in the south-east Asia region.

Minister Reynolds added, "The ability to operate our largest amphibious vessels with Singapore's CH-47 Chinook helicopters means we can work together to mobilise and move personnel or supplies at sea, and enhance our combined joint capability."

The Boeing CH-47 Chinook is a versatile, twin-engine, tandem rotor heavy-lift helicopter. Its top speed of 170 knots (315km/h) is faster than many contemporary utility and attack helicopters. Operated by both Australia and Singapore, the Chinook's primary roles include troop movement, artillery emplacement and battlefield resupply. There is a wide loading ramp at the rear of the fuselage and three external-cargo hooks underneath.

The Canberra Class amphibious assault ship (LHD), also known as a landing helicopter dock, provides the Australian Defence Force with one of the most capable and sophisticated air-land-sea amphibious deployment systems in the world. These 27,000-tonne ships are able to land a force of over 1,000 personnel by helicopter and water craft, along with all their weapons, ammunition, vehicles and stores. The first LHD, HMAS Canberra, was commissioned on 28 November 2014, and the second ship, HMAS Adelaide, was commissioned on 4 December 2015.

## **Part 2 - RAAF KC-30A MRTT conducts air-to-air refuelling with RSAF tanker 25-30 October 2020:**



A Royal Australian Air Force (RAAF) multi-role tanker transport (MRTT) has conducted air-to-air refuelling with a Republic of Singapore Air Force (RSAF) tanker. This marks the first instance of a RAAF KC-30A being refuelled in the air by a foreign air force. It was conducted during training called Boom Camp, which was held at RAAF Base Darwin from 25 to 30 October. The two countries operate variants of Airbus A330 multi-role tanker transport (MRTT) aircraft, which features hose-and-drogue

refuelling pods and an advanced refuelling boom system. RAAF No 33 Squadron pilot flight lieutenant Nicolas Barnes said that the training adhered to different objectives, including receiver flying, away-base operations, heavy boom tanker consolidation, rendezvous procedures, and formation probe-and-drogue fighter refuelling. Barnes said: "The event also provided an important opportunity for the RAAF and RSAF to share knowledge and operational experiences as operators of the same aircraft type."

The tanker crews of Singapore and Australia have previously trained at Exercise Pitch Black and Bersama Five Power Defence Arrangements exercises. This year's Pitch Black exercise was cancelled due to the Covid-19 pandemic.

RSAF No 112 Squadron Deputy Commanding Office lieutenant colonel Cheng Li Seng said: "As a small country with limited airspace available for training, we are especially grateful to the RAAF and to the Australian Government for their consistent and strong support in allowing the RSAF to continue to deploy to Darwin amidst the Covid-19 pandemic."

Last month, one of the surveillance aircraft of the P-8A Poseidon fleet of the RAAF completed the first air-to-air refuelling with a KC-30A.

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**CAREFLIGHT, AMSL TEAM ON ELECTRIC AMBULANCE:** AMSL's Vertiia design may start life as a piloted electric aeromedical platform, with options for a four-passenger commercial version also

being explored. Australian aeromedical and healthcare services provider CareFlight and AMSL Aero have launched a partnership to develop aeromedical applications for advanced electric flying vehicles. AMSL Aero officially unveiled its Vertiiia energy efficient, electric air ambulance at CareFlight's hangar in Sydney on Wednesday, with support from the company's project partners including the University of Sydney and launch event speakers including Deputy Prime Minister Michael McCormack.



Vertiiia is an electric vertical take-off and landing (eVTOL) aircraft, designed to cruise at a speed of 300kph, and travel up to 250km on electric power or 800km if powered by hydrogen. The partnership could see CareFlight deploy electric flying air ambulances within a few years, which will initially be flown by CareFlight pilots. CareFlight is also providing expert advice and input into the aircraft design to ensure it is fit for medical purposes.

“Vertiiia will instantly enable greater access to medical services for vulnerable remote, rural, and regional communities, offering new models of care through rapid and low-cost connectivity,” said AMSL Aero CEO Andrew Moore. “It will also be quieter and safer than helicopters, and will eventually cost as little as a car to maintain and run, transforming aeromedical transport into a far more affordable, accessible, safer, and reliable option.” The partnership between AMSL Aero and CareFlight forms part of a \$3 million Cooperative Research Centres Project grant from the federal government, for a two-year collaborative project with the University of Sydney and autonomy and sensing specialists, Mission Systems. AMSL is building the Vertiiia at Bankstown Airport, with test flights to take place at its facility in Narromine Airport in regional New South Wales.

*Vertiiia is a product designed and built in Australia by AMSL Aero Pty Ltd, a company founded and led by duo Andrew Moore and Siobhan Lyndon (AMSL). Andrew is a qualified Aeronautical Engineer and pilot, and has worked in aerospace leadership roles for over 20 years. Siobhan holds degrees in law and business and has over 20 years' experience in the technology, telecommunications, and professional services sectors, with a decade at Google where she held senior leadership roles across the globe. Andrew and Siobhan are joined by a strong and diverse team of aerospace engineers and experts at AMSL Aero. The making of Vertiiia fulfils Andrew's and Siobhan's vision to build a safe aircraft that will ease the burden of traffic congestion on people's lives, will provide greater choice over where people can work and live, and most importantly help with the de-carbonisation of transport.*

**NSW POLICE AVIATION SETTLES IN TO NEW HOME:** The NSW Police Aviation Command is settling in to a new purpose-built facility at Bankstown Airport, opened early November, 2020. The new facility integrates hangar, maintenance, operations, training and administration functions in a single stand-alone building. It includes a heavy maintenance area and spray booth, helicopter winch simulator, Forward Looking Infra-Red (FLIR) equipment simulation room and dog-friendly facilities for joint operations with the police dog unit.



Established in 1979 with a single Bell 206B Jet Ranger III, the Aviation Command was initially based at Sydney's Kingsford-Smith Airport before relocating to Bankstown Airport in 1991, where it was housed in three World War II hangars. In 2018 the fleet grew to five helicopters and three fixed wing aircraft, with the addition of a Bell 412 EPI

and two Cessna Grand Caravan aircraft, eventually exceeding the capability of the previous base. Next year the NSW Police Force will take possession of three Bell 429 helicopters. Additionally, the force maintains responsibility for 130 drones, all of which provide aerial policing services across an area of 300,000 square miles.

**AIRSERVICES, QUT AIM FOR AUTOMATIC FLIGHT APPROVALS:** Airservices and the Queensland University of Technology are working together to research systems and technology that could give drone operators automatic and near real-time flight approvals. An automated and streamlined approvals system will allow services to be quickly scaled up in times of demand, such as emergencies and pandemics when communities need to be reached quickly. This



QUT researcher Dr Aaron McFadyen was awarded an Advance Queensland Industry Research fellowship to help fund the flight approvals project for drone operators.

new drone management technology will eventually replace the current manual process, with the technology to be initially introduced at Australia's major airports where the skies are busiest.

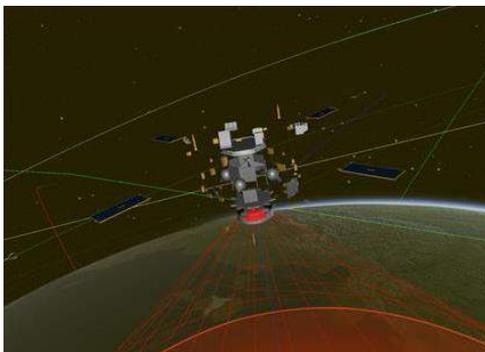
Airservices Executive General Manager of Customer Service Enhancement Michelle Bennetts said Airservices is working hard to provide innovative and robust technological solutions which meet industry and community needs. "We have already seen astonishing growth and innovation in drones across so many industry sectors such as mining, emergency services and farming, and no doubt there will be many more applications to come. To facilitate Remotely Piloted Aircraft Systems (RPAS) use and innovation for the benefit of Australia, we must ensure they are safely, securely and efficiently integrated into our national airspace system."

**Boeing and Saber leverage artificial intelligence to troubleshoot satellites:** Boeing Defense, Space & Security is collaborating with Sydney-based Saber Astronautics to deliver a proof of



BOEING DEFENCE AUSTRALIA

concept for a sophisticated diagnostic technology to support its satellite programs. Using advanced artificial intelligence (AI) and machine learning, Saber has developed technology to predict the impact of unexpected events and erratic space weather on spacecraft, enabling operators to quickly address issues when they are encountered. This capability has been proven on smaller, less complex spacecraft and Boeing's investment will enable Saber to investigate the technology's application to Boeing 702 Geostationary (GEO) satellites.



"Satellites are incredibly complex platforms operating in a remote environment, which can make it difficult to diagnose and address anomalies on-orbit," said Boeing Defence Australia director of emerging markets, Matt Buckle. "The proof of concept will explore the potential for Saber's technology to monitor changes in the state of the satellite, hypothesise the most probable cause of the problem and predict how the satellite will respond in specific situations. We look forward to establishing an ongoing relationship with Saber to further develop a diagnostic capability for GEO satellites which has the

potential to significantly prolong the life of spacecraft through the early detection, analysis and quick implementation of countermeasures. This collaboration is also a demonstrable achievement under Boeing's statement of intent with the Australian Space Agency to invest in space research and development and innovation," said Buckle.

The technology is a key capability for JP9102, the Australian Defence SATCOM System, which requires the use of machine learning to increase the speed, quality and agility of the conduct of SATCOM Operations as compared to legacy systems.

"Boeing is interested in leveraging our spacecraft expertise along with our unique algorithms to predict anomalies and diagnose spacecraft issues more quickly on-orbit. Applying machine learning to diagnostics will reduce operator workload, and can improve spacecraft longevity and performance. Being a part of Boeing's supply chain is a great opportunity for us to apply our work to support larger and more complex missions and we are excited to be a part of this family," said Saber Astronautics CEO, Dr Jason Held.

This project is part of broader efforts within Boeing focused on applying cutting-edge technologies to the development and operation of space systems, including efforts on advanced autonomy, predictive analytics, on-board processing and AI-enabled networking. These advances will allow Boeing's commercial and defence customers to fully realise the value of Boeing satellites.



*\*Dr Jason Held addressed the Sydney Branch Wednesday 30<sup>th</sup> May 2018 in a presentation entitled 'The Australian Space Agency – What should it do'. A report of this evening is in the June 2018 Newsletter – both the May and June newsletters are available from our website – refer 'Past Newsletters and Webinars' for details. Jason's webinar can be view at: <https://www.facebook.com/groups/246860612446661>*

**A journey from Boeing propulsion engineer to NASA astronaut:** "Being at Boeing allows me to participate in cutting-edge propulsion research, where I get to lead and work in teams to solve challenging problems." At an early age, Julie Mason knew she wanted to be an astronaut. As a

space propulsion engineer in Huntsville, AL, she supports Boeing Defense and Space programs, including NASA's Space Launch System and XSP.

She took one small step in her path to aerospace as a 12-year-old. "My parents took me to a launch at Cape Canaveral and a tour of the NASA facility," she recalled. "It was an awe-inspiring moment. And it was at this time I told my parents I wanted to be one of those astronauts."



Julie Mason and Saturn V at the U.S. Space and Rocket Center in Huntsville, Alabama.

Fast-forward two decades. In summer 2019, she found herself in a capsule in Houston, by choice, for 45 days. She was one of four participants in NASA's prestigious research program Human Exploration Research Analog (HERA), in which confinement and isolation are intentional. The program allows scientists to safely determine on Earth how to deal with the effects on the human body and mind of living in space. Mason's mission made a "trip" to Phobos, the larger of the two moons of Mars. Though they never left

NASA's Johnson Space Center, participants acted as if they did, performing a virtual spacewalk. They also worked with a simulated robotic arm and communicated with students "back on Earth." Mason grew lettuce in the team's hydroponic garden. **Hear more about [Julie's journey](#) to Boeing.**

### **VOLUNTEER ENGINEERING MENTORS WANTED:**

In conjunction with The University of Sydney, not-for-profit Vampire Projects Incorporated (VPI) provides work experience and thesis supervision to engineering students through airworthy restoration of a 1953 de Havilland Vampire. Restoration is carried out at the Darlington campus of the university. Candidate volunteers should have a LAME/AME or professional engineering background in a relevant discipline. VPI also seeks other volunteers for organisational and technical roles.

Contact: Nicholas Cale (VPI Chair) (M) 0425 245 544 E: [nicholas@vhjet.com](mailto:nicholas@vhjet.com)

George Lawrence (VPI Chief Engineer) (M) 0410 213 495 E: [gelair@yahoo.com.au](mailto:gelair@yahoo.com.au)



### **Australian Space Research centre to be renamed after first Aussie astronaut:**

The University of Adelaide has formally renamed the Space Research Centre in honour of the nation's first astronaut, Dr Andy Thomas, to become the Andy Thomas Centre for Space Resources. The renaming was announced Wednesday, 25 November at the 10th Australian Space Forum, held virtually. The Andy Thomas Centre for Space Resources connects the University of Adelaide's specialist capabilities in artificial intelligence, autonomous systems, mining engineering, and advanced materials and manufacturing to global efforts in off-world exploration and habitation. Dr Andy Thomas, the first Australian to fly in space as a professional NASA astronaut,



and University of Adelaide alumnus, is the centre's patron. "I am honoured to be associated with this globally unique education and research facility which seeks to address the challenges faced by long-term planetary exploration, while ensuring the near-term application of solutions here on Earth. Journeys into deep space will only be viable if we find ways to identify, assess and model resources on planets and near-Earth objects and extract these resources and process them in a responsible, efficient and sustainable way. Astronauts of the future will need to generate and store energy and fuels, grow food, maintain equipment and ensure safe and reliable operations on other worlds. For life to prosper on new worlds, space resources will need to be made into new essential products. Sustainable use of resources in space is critical to the future of space travel," said Dr Andy Thomas. Associate professor John Culton, director of the Andy Thomas Centre for Space Resources, explained, "Successful long-term space exploration requires a fundamental rethinking of the technologies, processes and infrastructure required to ensure continued and sustainable access to

the energy, fuels and resources necessary for off-world operations. The Andy Thomas Centre for Space Resources combines additional specialist capabilities from across the university to address the end-to-end value chain for sustainable off-world resource utilisation including energy and fuel, health and medicine, and food production. Addressing the challenges for sustainable planetary resource exploration also provides opportunities for developing new technologies that can underpin long term, sustainable, resource exploration and processing in remote locations here on Earth.”

The In-Situ Resource Utilisation (ISRU) concept, pioneered by NASA, addresses the reliance on Earth-based materials for long-term space exploration by proposing an off-world, self-contained resource chain covering the exploration, extraction and utilisation of the resources required for sustained space operations.

The Australian Space Forum is delivered by the South Australian Space Industry Centre (SASIC). The biannual meeting has fast become one of the foremost events on the national space industry calendar with a program designed to showcase the best of the Australian space sector and encourage collaboration and investment. It is supported by the Australian Space Agency and SmartSat CRC.

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**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.



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

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**Closed Member Only Group on Facebook:** Sydney branch is live video streaming our monthly branch lectures. Watch lectures live or later, 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.

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**Past Newsletters and Webinars are now stored on our websites:** 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](http://www.raes.org.au) ) into your browser, click ‘Branches’, then ‘Sydney Branch’, and scroll this page to the heading ‘Sydney Branch Newsletters’. Newsletters are arranged by month within each year heading. **Past webinars are viewable on the RAeS AD website - [www.raes.org.au](http://www.raes.org.au) complete ‘member login’, click on ‘Resources’ tab, and then ‘Videos’ - some 21+ webinars are available for viewing by Members. Lecture videos, particularly older videos, may be found on Facebook, within the ‘RAeS-Sydney Branch-Members Only’ group. A list of all the videos will appear and you need to select the one you want to view. Additionally, there are further videos under the tabs ‘Young RAeS’ and ‘Cool Aeronautics’ – for these two tabs, ‘Member Login’ is not required.**

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**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; <https://www.abc.net.au/radio/programs/conversations/beverley-bass/11060672> : Podcast - This is your captain speaking. On the morning of the attack on New York's Twin Towers, Captain Beverley Bass was flying from Paris to Fort Worth, Texas.

[www.adastron.com/707/updates/updates.htm](http://www.adastron.com/707/updates/updates.htm) :Diary of Boeing 707-138B XBA formally Qantas EBA. <https://www.aerosociety.com/events/catch-up-on-events/video-audio-archive/> : Many podcasts and

videos of previous presentations including Vulcan to the Skies (podcast and video), and The U-2 Reconnaissance Aircraft Incident of 1 May 1960 (podcast only).

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

[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.ela.space](http://www.ela.space) - Equatorial Launch Australia - Australia's Spaceport at 12 Degrees – The Arnhem Space Centre site is in Australia's Northern Territory, outside of the East Arnhem township of Nhulunbuy, approximately 12 degrees south of the Equator on the land of the Yolngu people.

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

[hars.org.au](http://hars.org.au) Historical Aircraft Restoration Society

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

<https://news.northropgrumman.com/news/features/apollo-13-failure-was-not-an-option> - Fifty years ago April 17, 1970, the Apollo 13 Command Module and crew safely returned home.

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

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

[https://www.youtube.com/watch?v=wZ4WmKy8zkY&feature=youtu.be&dm\\_i=40GU,VYG8,2ZCD RJ,3XM4J,1](https://www.youtube.com/watch?v=wZ4WmKy8zkY&feature=youtu.be&dm_i=40GU,VYG8,2ZCD RJ,3XM4J,1) Video - Talking with Paul Stein, Chief

Technology Officer at Rolls-Royce

<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](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://www.spitfireassociation.com> THE SPITFIRE ASSOCIATION "Keeping the memory alive" Patron; Air Vice-Marshal Mark Skidmore AM (Ret'd), and President RAeS Australian Division.



**DUE TO THE COVID-19 PANDEMIC ALL OF THESE DATES MAY CHANGE TO KEEP INFORMED OF DATE CHANGES REFER TO THE APPROPRIATE WEBSITE**

**Diary:** 28 Jan-4 Feb, 2021: 43rd Scientific Assembly of the Committee on Space Research (COSPAR) and Associated Events - COSPAR 2021 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 – closed. Abstract acceptances and program notification letters were sent out 31<sup>st</sup> March, 2020. The theme of the COSPAR 2021 Assembly is *Connecting Space Research for Global Impact*. More information can be found at [www.cospar2020.org](http://www.cospar2020.org)



**March 19, 2021:** Red & White Gala Dinner – Friday 19 March 2021 - The event is the official opening of Qantas Founders Museum's new Airpark Roof, spectacular Luminescent Longreach show, and Super Constellation Interior exhibit, and will include a dinner experience under the Museum's Airpark Roof. Further details about Qantas Founders Museum's events including the Celebration of the Qantas Centenary Program of Events can be found at: [www.qfom.com.au/events](http://www.qfom.com.au/events). Bookings are essential for all Qantas Centenary events.



**Mar-April, 2021:** Due to the COVID19 requirements the 62<sup>nd</sup> Sir Charles Kingsford Smith Annual Dinner was postponed until first quarter 2021. During this dinner the Sir Charles Kingsford Smith Memorial Medal will be formally presented to Mr Alan Joyce AC FRAeS for delivering the 62<sup>nd</sup> Sir Charles Kingsford Smith Memorial Lecture on 26<sup>th</sup> November 2020. Details for this prestigious event will be provided early 2021.

**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](http://airforce.gov.au/our-mission/air-force-2021)

**May 26, 2021:** Sydney Branch 2020 Annual General Meeting – further details will be advised. Please note your diaries.

**15-17 June, 2021: ROTORTECH 2020 has been deferred to this date.** It will be held at the same venue - Royal International Convention Centre, Brisbane. Registration process is being updated and is currently not available. Refer further details:



<https://www.rotortech.com.au/visit/registration.asp>

**June 24, 2021:** Aviation Safety Australia 2020 has been deferred 1 year to 24<sup>th</sup> June 2021 – due to COVID-19 pandemic. A new program will be issued at the start of the new year and Invitations will be reissued in early 2021. Registrations remain open at 2020 prices, which will not be adjusted until January 2021. For further details and to register at 2020 prices refer: <https://www.raes.org.au/eventdetails/5392/aviation-safety-forum-2021>

**Postponed – New dates to be confirm in 2021: Dr Behrooz Barzegar**, recently retired from Airbus. He will discuss his Integration and Architectural roles in Airbus entitled ‘**Aerodynamic Design of Commercial Aircraft - Airbus A380 and the future**’ including the Beluga XL.

**13-14 November, 2021: Wings over Illawarra** – The Sydney Airshow - Immerse yourself in history as you wander through rare displays of vintage and classic aircraft including the fully-restored Super Constellation and record breaking Qantas 747 along with some beautifully restored WW2 fighters. In 2020 your entry ticket will once again include access to the Historical Aircraft Restoration Society aircraft that are open for inspection. To thank the supporters of the Wings Over Illawarra event this year, Wol are offering tickets for the 2020 event at half price - but be quick, they're only available for a limited time. For further information please refer:

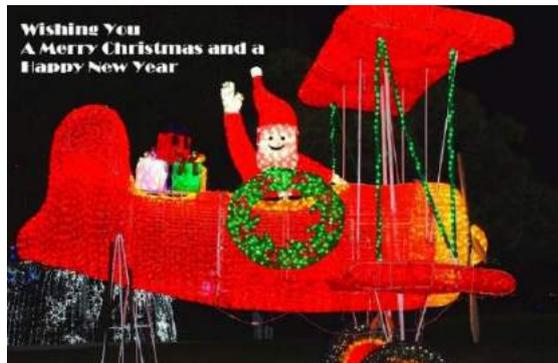


<https://www.wingsoverillawarra.com.au/>

**November 23-28, 2021: The Australian International Airshow and Aerospace & Defence Exposition (AVALON 2021)** - As the centrepiece of the Royal Australian Air Force’s Centenary celebrations, AVALON 2021 is Australia’s own signature international aviation, aerospace and defence

event and will have great national and international significance. Organised by AMDA Foundation Limited, it is a premium international platform for engagement between industry, defence, government and academia. Deferring AVALON 2021 to November will ensure the event serves its purpose as a powerful promotional and industry engagement forum on the way to business recovery and as a spectacular celebration of 100 years of the Royal Australian Air Force.

**The Committee wishes you all the best for the Festive Season and the New Year**



**Thanks Boeing for your help – at our recent ‘Workshop Strategy Day’ the yearly risk assessment for the ‘Next Run’ identified that Rudolph was getting older and slower and the concept of breeding ‘faster’ reindeer was identified.**

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