



**ROYAL
AERONAUTICAL
SOCIETY**
AUSTRALIAN DIVISION
SYDNEY BRANCH

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

NEWSLETTER



Capt Matthew GRAY FRAeS

Qantas Flight Operations

presenting

**'21st Century Airline Flight
Training'**

Date: **Wednesday 29th November, 2017**

Time: **18:00 for 18:30 hours**

Venue: **Ainsworth Building (Map Ref J17), Ground Floor Lecture Theatre G03
University of New South Wales**

Refreshments will be available from 18:00 hours Attendance for the evening will attract 1.5 CPD hours.

PROFILES: Captain Matt Gray graduated from the RAAF No. 112 Pilot's Course in 1981. He flew Caribou aircraft with the 38 Squadron for 3 years. From 1984-1988 he completed instructor training and instructed Advanced Flying training on Macchi aircraft at 2FTS and Strikemaster aircraft with 14 Sqn RNZAF. He completed RAAF service at Central Flying School as a staff instructor and Instrument Rating Examiner. From 1988 to present, Matt works at Qantas.

Matt has flown the B747/B767/B737 aircraft and is a type rated examiner for B767 and B737 and instructed at Qantas for 15 years. In addition to flying duties, he also has undertaken a number of managerial roles as Manager Flying Operations Audit, Fleet Manager B737, Head of Training and Checking and Deputy Chief Pilot Qantas Domestic and is currently the Head of Training and Checking at Qantas Airways.

He is also currently completing a Masters Degree of Aviation majoring in Human Factors at Swinburne University.

SYNOPSIS: Current work in Qantas Flight Training centres on Evidence Based Training (EBT), use of new technology, adult and blended learning and integrated training. Integrated training is a concept where all training should fit together and not be seen as standalone events. The topic of the talk centres on an integrated approach to airline pilot training, less checking and more training to proficiency. This provides a much better learning environment where pilots will learn more in an environment that encourages learning not Box ticking.

Qantas is challenging the traditional use of simulators, using far more Line Orientated Scenarios (LOS) and exploring 3 hour sessions to enhance learning and a more integrated approach where cognitive aspects of flying must overlay technical competencies. It is of little value to get a pilot to demonstrate a technically proficient instrument approach without cognitive aspects such as



Your 2017 Committee: David Cox (Chair), David Adkins (Immediate Past Chair & Web Co-ord), John Vincent (Secretary), Jeff Lock (Treasurer), Ross Barkla, Capt Brian Greeves, Abhijeet Kumar, Zoren Lui (Uni of Syd Student Rep), Ying Luo, Peter Marosszky, Mitch Needham (UNSW Aviation Rep), Bryan Stade, Henry Thai, Daniel Walsh (UNSW Student Rep).

Editor: Jeff Lock (jeff.lock@bigpond.com)

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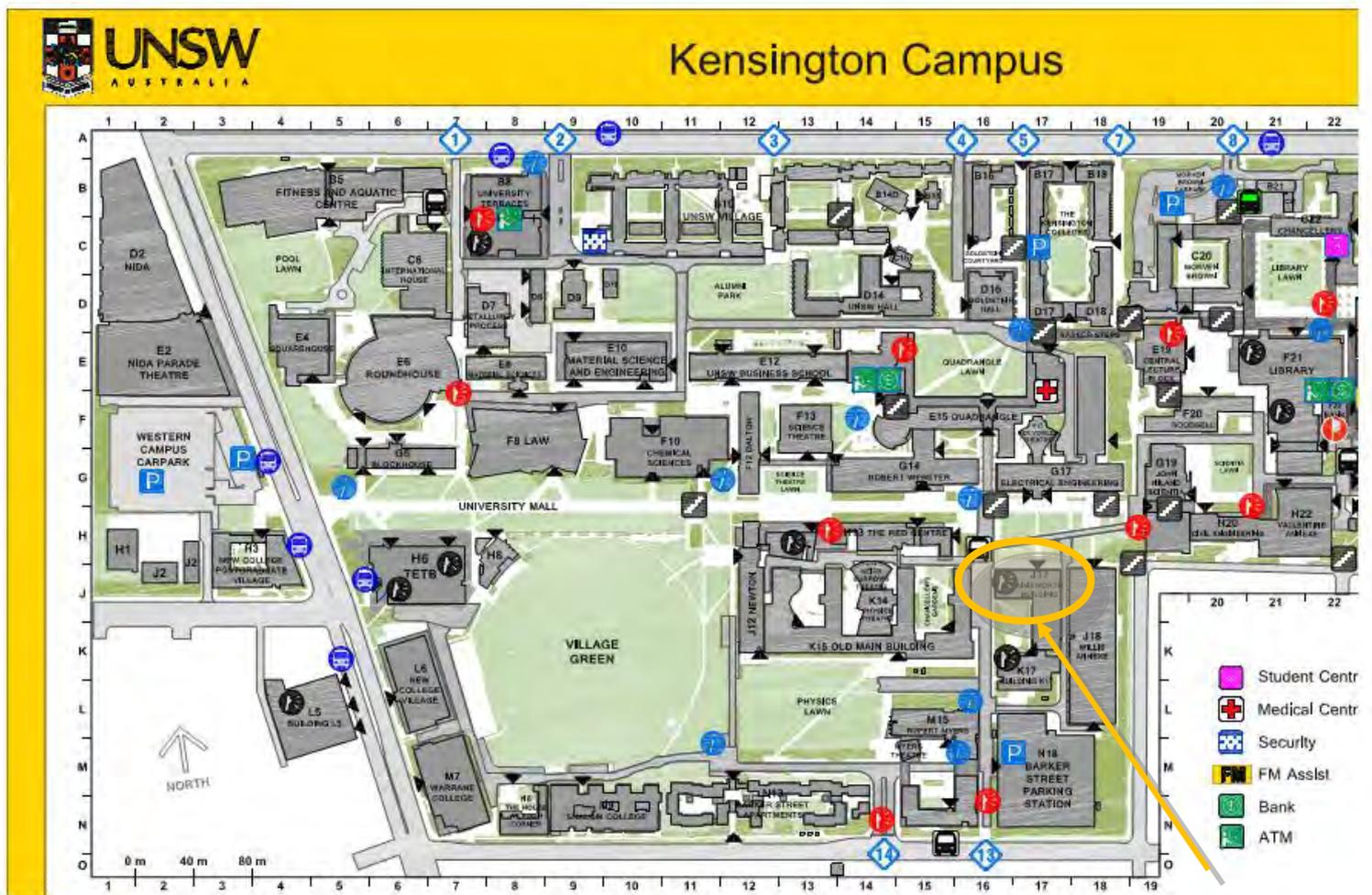
startle effect (*In aviation, **startle effect** can be defined as an uncontrollable, automatic reflex that is elicited by exposure to a sudden, intense event that violates a pilot's expectations*) and advanced decision making.

New technologies are also being explored such as Virtual Reality (VR) that compliment simulators and far greater collaboration with Universities has been a main goal of Qantas to push the traditional boundaries of understanding and learning and drive pilot training in new directions in the 21st Century.

RSVP: Whilst attendance is free - registration for the evening **is required**. Please register by clicking on/copying and pasting into your URL this link: <https://raesnov17.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.

Light supper: Following the presentation light supper (pizzas) will be provided to give the speaker and attendees the opportunity to mingle and to continue discussions.

Parking: Limited parking is available in surrounding streets with paid parking within the Uni of NSW car park tower, entry from Barker Street. Please observe parking restrictions and allow time to drive to the University of NSW, park and walk to the venue. (Refer to map and also <http://fmtreetoolbox.unsw.edu.au/comms/KensingtonCampus.pdf> - ref J17)



Public Transport: Regular buses (391, 392, 393, 394, 396, 397, 399, M10) leave from outside Museum train station in Liverpool Street, and the 395 and M50 in Elizabeth St, opposite Central Station. Please allow time to travel by public transport, including waiting time, and time to walk to the venue from the UNSW bus stops. There are a number of other buses such as the 400 and 370 that travel to and from

suburbs on the outskirts of the CBD and stop at the UNSW. Please refer for further details: www.sydneybuses.info/routes/timetables-route-maps

Membership Information: Annual memberships commence at only \$145 or \$28 for Students (but free for the first year). Being a member helps us sustain a vibrant activities programme and opens the way to access restricted 'member-only' events. For further details refer: <https://www.raes.org.au/index.php/membership/2014-11-02-00-22-30/become-a-member>

The first Qantas Dreamliner: The first Qantas Dreamliner, Great Southern Land, has arrived in Sydney, marking the start of an exciting new era for the airline and how Australians travel. The game-changing aircraft will open up new routes and new levels of comfort for travellers. The latest addition to the fleet features next generation seating in Economy, Premium Economy and Business cabins, offering customers more space. Refer further details: www.qantasnewsroom.com.au/media-releases/first-qantas-dreamliner-arrives-home-and-opens-a-new-era-of-travel/

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.



Report on the 59th Sir Charles Kingsford Smith Lecture and Annual Branch Dinner:

The 59th Sir Charles Kingsford Smith Lecture was delivered by Jayne Hrdlicka FRAeS on the evening of the 18th October at the Powerhouse Museum, Sydney. Jayne discussed 'The Rise of Jetstar' with Qantas disrupting its own business to establish a low cost carrier. Today Jetstar is not one, but five airlines that employ over 9000 people operating domestic and international operations from Australia, a domestic operation in New Zealand, and joint venture airlines with local partners in Singapore, Japan, and Vietnam. It has a fleet of 135 aircraft,

revenue of \$5 billion, and a proud safety record, built on Qantas's reputation as one of the safest airlines in the world.

Jetstar's business strategy and operation focuses on people and in particular understanding customers better than anyone else which allows people to live their lives adventurously and connected to family, friends, and the region. Jayne spoke about the beautiful story of the 100 millionth customer and the impact that event had on the future lives of that family.

As you know Qantas has received its first Dreamliner and the beauty is that Jetstar has been able to share our experience operating 11 787-8 Dreamliners for the past four years. Jetstar pilots have been training Qantas pilots - both in the SIM and on the line. Our engineers have been sharing the learnings with Qantas engineers on the maintenance requirements of the aircraft. I have no doubt that Qantas customers will love flying them in the future. And this comes back to my point about knowing your customers – you can't cater to them if you don't know them. I like to think that Jetstar is a breeding ground of a wanderlust looking for that next adventure which keeps us in business. We are travel enablers. But it's not just consumers who benefit from low-cost carriers – it's also the tourism operators. For every \$1 spent on aviation, \$10 is spent in local communities – that \$5B mentioned before stimulates \$50B in spending across the destination Jetstar travels too. Abhijeet Kumar, a Sydney Branch Committee member, gave the speech in reply and asked the 107 people in attendance to join with him in thanking Jayne for her presentation.

The Sydney Branch Chairman then presented Jayne with the 59th Sir Charles Kingsford Smith Medal and the



Australian Division Chairman, Mr John Vincent, presented Jayne with her framed Fellowship Certificate. Mr John Vincent also presenting framed Fellow Certificates to the following newly elected Fellows:



Mr Chris Snook FRAeS



Capt Richard Tobiano FRAeS



Capt Allen Dickinson FRAeS



Capt Deborah Lawrie FRAeS



Capt Greg Matthews FRAeS



Capt Mike Sterling FRAeS

Before concluding the formal presentations for the evening David Cox acknowledged the presence of Mr Tom Sonters who discovered the 'Southern Cloud' on 26th October 1958 – 27 years after its disappearance during a flight from Sydney to Melbourne, on a stormy day 21st March 1931.



Jayne's presentation has been added to Facebook and is available to watch at the "RAeS - Sydney Branch - Members Only" group within Facebook. Please note that this service is only available to financial members.

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Report on the 2017 International Astronautical Congress held in Adelaide 25th-29th September: The IAC is the world's largest annual gathering of space professionals and its parent organisation is the International Astronautical Federation (IAF) that is based in Paris (see: <http://www.iafastro.org>). IAC's have been held every year since 1950. In 1998 the Congress was held in Melbourne and the 2017 held

in Adelaide, was only the second time it has been held in Australia. The Host organisation, Space Industry Association of Australia (SIAA), is a small not-for-profit entity that exists to promote space activities in Australia notably in the civil, commercial and open research domains.

There were many highlights during the week long Congress which attracted some 4500 delegates – the opening ceremony featuring the Lighting of Fire by Australia’s traditional people, the discussion about who will be ‘The First Woman on the Moon’ and from which country shall she come, Bill Nye, the Science Guy who enlightened the audience with a presentation on the phenomenal story of LightSail® a solar sailing spacecraft, the announcement of the re-establishment of the new Australian Space Agency, and to conclude, Elon Musk on his updated plans to make Humans a Multi-Planetary Species, which ‘stole the Congress’. Further details on two of the highlights follow.

Elon Musk: unveiled his plan to have a Mars City of a million people as well as a base on the moon. To drive these plans he proposes to use a rocket bigger than an A380 plane to send 100 people at a time to Mars. Ultimately he hopes to create a sustainable population of about a million. Musk backed up his plans with his achievements to date – The Tesla Car, Lithium Battery Storage farms, and the cargo supply to the International Space Station using his Falcon 9 rockets.



His company SpaceX has begun serious work on the BFR (Big F*****g Rocket) as he plans an Interplanetary Transport System which will drive down the cost by reusing parts and improving technology. Always fresh with ideas and ‘solutions’ he says he has an idea on how to pay for it all - and it can be as cheap as a plane ticket for a seat in economy. The massive boost in payload launch capability of the BFR will greatly expand commercial space activity, launch fees from these will help cover the cost of his Mars project. But Mr Musk took his aircraft analogy further. Using the same BFR transport vehicle to transport paying passengers from one side of the Earth to the other within 30 minutes (Sydney to New York for a New York breakfast, business meetings until 17:00 hours, and return to Sydney by 19:00 hours for dinner with the family) would further boost the revenue stream to pay the way to Mars, he said. Why develop a Concorde replacement when we can skip straight to a space solution. To view Elon Musk’s presentation to the Congress click here:

<http://www.spacex.com/mars>

Australia's 21st century space agency: With the announcement of an Australian space agency, the space start-ups of Australia must feel like the Hollywood hopefuls who became an overnight success after ten years of hard work. These companies have a toehold in a high-tech, high-growth industry, and part of the task for ex-CSIRO head Dr Megan Clark as she designs the agency to help them succeed. These companies – unlike their orbiting creations – will not do well in a vacuum. Success for Australian industry will come through full engagement with the projects, supply chains and experience of the much larger global industry. Clearing the path to Australian participation is an ideal role for a 21st century space agency.

The space business is changing. New companies have flourished using cheap off-the-shelf electronics to build ‘good enough’ small satellites for a thousandth of the cost of 20 years ago. The companies pushing this approach resemble Silicon Valley in their audacious plans, their fail-tolerant mentality and their emphasis on private funding over government contracts.

Simultaneously, dot-com billionaires including Elon Musk, Jeff Bezos and Paul Allen have poured fortunes into their own spaceflight programs. They are pushing plans for space exploration that run ahead of national governments. These forces have powered a boom in space start-ups. Venture capital funding in the industry has spiked to US\$1.5B across 2015-16. The optimism in the US space sector has flowed to Australia, where the space industry counts 40 start-ups and growing. Given this commercial dynamism, its right to ask ‘what role Australia’s space agency should play?’ Striking international agreements to open funding, projects, and experience for Australian industry would be a good start. Developing existing relationships with the United States and Europe will help deliver a winning edge as Australian companies compete commercially with other ‘emerging’ space nations.

The global space industry is worth US\$330B, mostly driven by the United States and Europe. Yet much of this market is closed to the Australian space sector. In Europe, preference is given to members of the 22-nation European Space Agency. And in the United States, restrictive laws meant to protect national security mean that commercial cooperation – even with allies – often falls in the too hard basket. Opening these markets would improve the survival odds for emerging Australian space companies. It would dramatically increase the dollars on offer and provide longer-term income stability. Global participation would also bring the chance to learn from experienced companies and extend national capabilities. Individuals need global experience to develop, as the resumes of top Australian space innovators bear out. For instance, Chris Boshuizen, co-founder of satellite start-up Planet which is currently close to a US\$1B valuation, left Australia to work for NASA. Adelaide-based Fleet's CEO Flavia Tata-Nardini began at the European Space Agency and Jason Held of Saber Astronautics was an officer in US Space Command.

Enabling early career steps like these is not a 'brain drain;' rather, it is an unavoidable step in building Australian capability when we are behind. International opportunities offer access to the most exciting projects that inspire future generations of Australian talent. We can't pursue the most motivating areas such as human spaceflight or robotic exploration on our own. The only way to join in without a disproportionate cost to the taxpayer is to reach out to our international partners. And the invitations to all these opportunities exist. The United States builds more than 60 per cent of the world's satellites, and its government spends more on space (US\$44.5b) than all others combined. Australia already cooperates deeply with the United States in national security space activities, and has famously hosted ground facilities since the Apollo missions. Australia has a position of unique trust with the world's largest space economy that should be leveraged as we seek competitive advantage for our emerging space sector.

Europe also has a wealth of space expertise, and cooperative arrangements for ground stations and launch vehicles that go back to early launches from Woomera. Europe's engagement extends beyond its geography, and it has a well-tested mechanism for bringing participants as far-flung as Canada into its activities. The top European space official was blunt when visiting in September: he was merely waiting for Australia to signal interest in order to start a process for us to become a cooperating member.

There will be other opportunities, too, with growing space activity in Asia where China and India are major space powers. Australia needs to be deft to strike the right balance in its network of relationships given the inherently sensitive character of space activity. In the wake of the announcement of the space agency, many have asked 'what will it actually do?' Perhaps in this era of commercial space the answer is not so far from government in more down-to-Earth sectors: clear roadblocks and open markets for Australian companies; strike deals with international partners and develop relationships that unfold in Australia's long-term interest. It will be a promising start. *(With acknowledgement - the United States Studies Centre – Anthony Wicht - Alliance 21 fellow)*

The Qantas Safety Conference 10th October, 2017

"I never got to meet my brother in law; he was 18; he committed suicide".

A particularly solemn opening start to the QANTAS Safety Conference 2017, and indeed it seems the purview of safety is much farther reaching than meets the eye.

Commencing on the salient note of mental illness, both the introduction by CEO, Alan Joyce, and Beyond Blue Chairperson, Julia Gillard, made the message clear, mental health is as important a facet of safety as physical health. Joyce made this comparison: if you had a cold, your friends and family would comfort you, speak to you, even offer their own remedies. But depression and anxiety almost never conjure up the same response. Gillard, too, offered an example: breast cancer patients, on diagnosis, are soon met with love and affection, extensive support groups and the conversation around "the lump" is fairly open and frank. But with depression, less so. Suicide attempts are rarely met with the same warmth, which is what is needed; indeed, one person Gillard new admitted himself to hospital for fear of suicide - he was never met with visitors, did not receive get well cards, or a bedside bouquet of flowers. Gillard made it clear that it was okay to ask direct and open questions about mental illness, to get the conversation going. Eight people suicide per day, on average, and the gentleman from the

audience who spoke about his brother-in-law made it clear that conversation could have saved his brother-in-law's life.

The notion that safety is confined to "lifting with your knees" continued to dissipate throughout the morning. Todd Sampson, QANTAS Board Member, enthralled the audience with a piece on "brain power". Top down initiative for personal creativity is perhaps oxymoronic; to be able to walk alongside Sampson in exceeding expectations and see his personal journey was so much more poignant. Stark, as it were, doctors pronounced he was "ordinary", yet his actions were extraordinary. Sampson raised memory, emotional regulation and perspective as something that could be trained and better used, and one did not have to be an 'autistic savant' to display near farcical feats.

Two tangible facets of safety, ergonomics and cyber security, were intertwined with leadership and Safety II. What is particularly profound, and perhaps unsurprising, is that communication is a cornerstone of safety, more so, perspective has an influence over "successful communication".

Reducing musculoskeletal disorders and suring up cyber security would be to no avail where communications are paternalistic or directive. The shift, then, should be from preventing accidents, to increasing the number of non-accidents or non-events; defined within a certain threshold than black and white. Where undue strain is caused, open communication to convey this is may be fruitful, whereby new technologies solely purposed for one aircraft could indeed be modified to suit many aircraft and serve multiple purposes.

It is perhaps surprising then, that underneath "Spirit of Australia", QANTAS does not have inscribed "tempora mutantur, nos et mutamur in illis" - *the times change, and we change with them*.

(The Sydney Branch of the Society has been invited by Qantas to attend their yearly Qantas Group Safety Conference for the past few years. This year the Sydney Branch was represented by Sydney Branch Committee Members - Messrs Henry Thai, Abhijeet Kumar, and Jeffrey Lock - *The Conference Report was written by Mr 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/>

Diary: Nov 14-16: 5th International Conference on Aerospace Science & Engineering (ICASE). Refer details: www.ist.edu.pk/icase

Sept 9-14, 2018: 31st Congress of the International Council of the Aeronautical Sciences, Belo Horizonte, Brazil. Refer details: <http://icas.org/media/ICAS2018CallforPapers.pdf>

Oct 1-5, 2018: 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>

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.



**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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