ROYAL AERONAUTICAL SOCIETY
AUSTRALIAN DIVISION
SYDNEY BRANCH INC

NEWSLETTER

APRIL 2013

Vol 2013-3 PO Box 573, Mascot, NSW 2020 ABN 75 134 058 731 Email:**sydneybranch@raes.org.au** https://www.facebook.com/groups/RAeSSydney/ www.raes.org.au

Date: **Wednesday, 1st May 2013**
Time: **18:00 for 18:30 hours**
Speaker: **Darren Cook, Manager air safe QANTAS Engineering, QANTAS Airways Ltd**
Topic**: 'The effects culture has on aircraft operation and safety'**
Venue: **Rupert Myers Theatre**
The University of New South Wales, Kensington
Refreshments will be available prior **to the commencement of the meeting**

Speaker Profile

Darren is the Manager of Qantas Engineering air safe program. In this program Darren is responsible for the Aircraft Maintenance Safety and Error Management Systems and Initiatives. The program includes:

- event occurrence management and investigations;
- task, error and safety analysis for continuous improvement; human factors analysis; and
- developing training strategies for safe aircraft maintenance.

Darren began his aviation career in 1982 as an apprentice aircraft maintenance engineer at Qantas. He gained his Aircraft Maintenance Licence and Federal Aviation Authority (USA) Maintenance Licence in 1990. He has worked within Qantas Line Maintenance on and certifying for a wide variety of aircraft types operated by Qantas and Qantas customer airlines in locations within Australia and overseas.

Darren commenced his University studies in 1995, studying business and management at the University of Technology Sydney before completing further tertiary study in aviation business, aviation psychology and human factors at the University of Western Sydney. He has undertaken numerous industry and tertiary courses focusing on aircraft maintenance, education and training.

Throughout his career, Darren has been involved in numerous projects (with Qantas) including significant involvement in safety, human factors and error management strategies, implementation and training. In recent years Darren has participated in and provided presentations to national and international aviation and industry forums and symposiums on aircraft maintenance, safety management systems, maintenance error management, human factors and performance, and training.

Synopsis

Manned, powered flight has been possible for well over 100 years, and mass transport has been possible for even longer. In this time we have seen tremendous change in the travel speed, efficiency and safety. Aircraft designed during the 100 years has seen the rate of fatal accidents declining. The building of safer and more reliable engines and airframes along with design change that deals with failures by human interaction have seen the skies become a far safer place to be. However, accidents still occur as do errors and violations by those operating or working on aircraft. Whilst we have seen over 100 years of design change of aviation equipment the same cannot be said for the systems we create for people operating this equipment or working on this equipment.

In the world of Flight Operations, human factors and crew behaviour were only seriously examined by industry and academia following the KLM/PanAm accident in Tenerife in 1979. But what has been the consideration in aircraft engineering and maintenance? Events such as the Aloha 737 explosive decompression, British Airways BAC 111 loosing a cockpit window, Japan Airlines 747 rear pressure bulkhead explosion, American Airline DC10 loosing an engine on take off, and more, have put engineering and maintenance failures directly in the limelight. Regulators, airlines and maintenance organisations have also moved to change the way they deal with maintenance error. Most maintenance errors do not end up in aircraft accidents but they are costly events and can be the pre cursor to an even worse incident or accident.

This lecture will discuss the culture of aircraft maintenance, particularly in Australia, and the effects this culture has had on aircraft operations and safety. It will examine how the changes in the understanding of human factors and human performance have changed the focus of maintenance and the prevention of maintenance error. Additionally it will look at how industry deals with those involved in maintenance error events and what affects this has had on event reoccurrence. Finally, it will discuss what the future might hold in terms of our ability to predict and mitigate future events.

PARKING: Limited parking is available in surrounding streets with paid parking within the University 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 map). **DINNER:** After the presentation Darren will join us for dinner as the guest of the committee. Members and visitors are invited to attend the dinner to be held at Giovanna Italian Restaurant, 285 Anzac Parade, Kingsford. (approx $35 pp including soft drink & wine.) **RSVP:** Attendance registration for the Presentation & Dinner afterwards is preferred. Please register by clicking on this link: or email by lunchtime Wednesday 1st May to: sydneybranch@raes.org.au

N E Rowe Medal Awards

The Award was established in 1956 by the Council of the Royal Aeronautical Society in honour of the valuable work done by N E Rowe when he was Chairman of the Branches Committee. The aim is to encourage oral presentations of aeronautical subjects as well as written papers by younger people connected with the profession of Aeronautics. There are two annual awards available, consisting of a Medal and a monetary grant of £500 - one to each of the age groups below 25, and below 30. Closing date for this year is 15th July, 2013. Refer: http://raes.org.au/awards-and-scholarships/?stage=Live

CASA talks about approaches to remotely piloted aircraft

CASA chief John McCormick spoke recently about CASA's perspective on the deployment of unmanned aerial vehicles, although he preferred to refer to them as Remotely Piloted Aircraft (RPAs). John revealed that, as at the end of February, there were 30 certificated operators in Australia operating small remotely piloted aircraft for commercial purposes. "…the growing number of enquiries we receive on a daily basis suggests that this number will be more than double again within

the next 12 months," he said. "This rate of growth reinforces to me that safety must remain as our number one priority…" "As I outlined during my recent interview on the *7.30 Report*, approximately 90 per cent of the RPAs operating in Australia today are less than seven kilograms and are relatively inexpensive and easily accessible to individuals through the open market. "As you would appreciate, due to increasing number and their varied capabilities, it is impossible for CASA to effectively regulate all of them… "CASA is now looking at introducing a weight limit to make it less onerous, but still safe, for commercial operators to use small remotely piloted aircraft…"Identifying the commonalities and differences between manned and unmanned aircraft is the first step toward developing a regulatory framework that will provide, at a minimum, an equivalent level of safety for the integration of RPA into non-segregated airspace and at aerodromes…"As the regulator, we need to develop procedures and processes consistently taking into account the work of ICAO and the leading manufacturers of RPAS from the US, Europe and Asia (and) we need to continually identify training and experience requirements for our inspectors and related staff."

UAV Challenge 2013: $50,000 up for grabs

With the technology to safely fly robotic aircraft in Australian skies expected to be developed by the end of 2014, competition in the next Unmanned Aerial Vehicle Challenge will be hotter than ever. CSIRO and QUT are leading research into the development of robotic aircraft systems and Professor Duncan Campbell, Director of the Australian Research Centre for Aerospace Automation (ARCAA) at QUT said the UAV Challenge was instrumental in driving forward research and the general public's understanding of unmanned flight. Teams from around the World will come together in September 2014 in Kingaroy, Queensland, to search for lost bushwalker, Outback Joe. Their mission is to fly their robotic aircraft over a large search area, find Outback Joe and drop him a package containing 500ml of lifesaving water. Fitted with onboard cameras, the unmanned aircraft relay vision back to their teams enabling their controllers to guide them into completing the rescue task before returning to Kingaroy airport. The team that gets the water bottle the closest will win $50,000. CSIRO ICT Centre Research Program Leader, Dr Jonathan Roberts, said that despite the UAV Challenge running since 2007, no team had yet managed to win the Search and Rescue Challenge and claim the grand prize. "A few teams have come very close to completing the UAV Challenge, and we know of dozens of teams getting ready for 2014, but it is still a real challenge and who knows if 2014 will be the year that it is finally completed," he said. The UAV Challenge also consists of a high-school competition called the Airborne Delivery Challenge, which is an annual event with a prize pool of $10,000. The next Airborne Delivery Challenge event will be held at Calvert, West of Ipswich, Queensland, on 24-25 September 2013. The UAV Challenge - Outback Rescue is a joint initiative between CSIRO, QUT, AUVS-Australia and Aviation Development Australia Limited

THE FAULKNER LECTURE: Safety, Systems, and Economics

To err is human. These wise words by Cicero spoken centuries ago could not be any truer today than in the business of aviation safety. Adjunct Professor John Faulkner recently delivered a lecture to the Sydney Branch which expounds the need to understand this basic Ciceroan premise in understanding both existing trends to ensure perpetuity of aviation safety. John commenced his very interesting topic by first providing published data about causes of accidents in the aviation sector wherein the roles of human players are key and central in the statistics presented. According to John, different aspects in the operation, design, and manufacture of aircrafts are all, to an extent, affected by human factors. He further provided a strong argument that even the system upon which all of these take place are still human-designed, thus, subjected to errors which are simply inherent to our nature. One of the examples that John provided, which also served as a pivot for a colourful discussion amongst attendees, is the design of a rear-facing aircraft seat configuration. In the second half of the last century, this design had been proven to be the safest for aircrafts since the latter would usually crash nose down. The design was eventually adopted in military aircrafts but its application in civil aviation had not been as positive. John argues that economic constraints prevented this from happening. There are numerous expenditures that come with design modifications, such as structural reinforcements, which left manufacturers rather slow in adopting the concept. A discussion soon followed and questions were fired by the audience from all corners of the lecture theatre. John took every bullet with confidence and his sure answers are evidence of his thorough knowledge, valuable insight, and expertise in aviation safety. A broad topic was discussed during the evening that perhaps the only question left, which is yet to be answered by those involved in the industry, is "What then?". Dan C. Hela, Affiliate (RAeS), StudIEAust

Wings over Illawarra AirShow – 5th May, 2013

Sydney Branch is arranging a RAeS stand at the 'Wings over Illawarra' Airshow on 5th May, 2013 being held at Illawarra Regional Airport, Albion Park Rail, NSW. All arrangements for the stand have been carried out by the Student Members of the Sydney Branch Committee following the establishment of a "hands on" exposure for University Students with The Historical Aircraft Restoration Society Inc. "HARS Organisation" in Wollongong. Please come and say 'Hello' to us at the stand. Refer: hars.org.au and woi.org.au for further details.

Film Review: FLIGHT (2013)

Whilst there is no doubt that the acting prowess of Denzel Washington is laudable, it is doubtful that this film is worth the penny. If anything, it was a letdown. Perhaps, the only exciting part to watch was when the pilot flies a commercial aircraft upside down trying to revert a rather *sticky* situation. The rest is all about dealing with alcohol addiction. Personally, it felt like a very long government advertising campaign. The film would have been aptly entitled *Alcoholism* or simply *Ethanol*. The main theme has very little to do with aeronautics. The subject of alcoholism is too universal that the story would have been just as applicable to a forklift driver. *Flight* really is about the human struggles faced when battling addiction until one reaches a point of self-admission to seek help and support.

The cast are without a doubt A-grade, but the film itself was not. If you are into aviation law, however, the film might just teach you a few tricks on how to dismiss a high-ethanol blood result as evidence, during a court case. Apart from that, you are better off going to an AA meeting to appreciate real stories of personal struggles faced by those battling alcohol addiction. I give it 2.5 out of 5. The film is 'loosely' based on the fatal accident that occurred on January 31, 2000 – Refer: http://en.wikipedia.org/wiki/Alaska_Airlines_Flight_261

Dan Constantine Hela, Affiliate (RAeS), StudIEAust

RAeS Sydney Branch Ron Yates AM Award

The University of Sydney has approved a prize to be named in the honour of Ron Yates AM, an alumni of Sydney University, in recognition of Ron's lifetime of achievement in aviation. The prize will be awarded annually to the highest marked team in final year Aerospace Design and is comprised of a medal for the team leader and one year's membership to the Society for all team members.

RAeS Ties, Coffee Mugs, and Lapel Pins

Variety of RAeS Ties $20 each, Sydney Branch coffee mugs (with new logo) & lapel pins available at Branch meetings for $10 each.

Diary 2012-2013

5 May: 'Wings over the Illawarra' being held at Illawarra Regional Airport, Albion Park. The theme for this year's event is 'Celebrating Naval Aviation'. View promotion video http://vimeo.com/61140652 and refer to http://woi.org.au/ which is being updated regularly, for further information.

5-7 May: Aviation Law Association of Australia and New Zealand Ltd Conference to be held at the Sheraton on the Park, Sydney. Refer: www.alaanz.org for further details

14 May: Presentation by Emeritus Professor John Richards, entitled 'Australian Earth Observation from Space: Digital Earth, Citizen Science and Social Media', at Engineers Australia, Level 3, 8 Thomas Street, Chatswood commencing 18:00 hrs. Refer for further details: www.engineersaustralia.org.au/eminent-speakerseries/emeritus-professor-john-richards

22 May: RAeS Presentation: Dr Susan Pond AM FTSE, Adjunct Professor of the Dow Sustainability Program, United States Studies Centre.
24-28 June: 10th Annual Meeting Asia Oceania Geosciences Society, Brisbane. For further details refer: www.asiaoceania.org/aogs2013/public.asp?page=sessionProposal.htm
Sept/Oct: Ian. Q. Thomas, President, Boeing Australia & South Pacific to present the 55th Sir Charles Kingsford Smith Lecture followed by the Annual Branch Dinner.

Aerospace Websites

www.aerosocietychannel.com/aerospace-insight/2011/07/space-shuttle-the-end-of-the-begining/
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;
www.boxkite2014.org: The Boxkite project.
www.innovationnewsdaily.com/920-flying-robots-play-007-theme.html www.powerhousemuseum.com/whatson;
www.singapore.com.sg
en.wikipedia.org/wiki/Rolls-Royce_Trent