



# NEWSLETTER

**AUGUST 2012**

Date: **Wednesday, 29<sup>th</sup> August 2012**

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

Speaker: **Dr KC Wong**

**Senior Lecturer School of Aerospace  
Mechanical and Mechatronic Engineering  
University of Sydney**

Topic: **'Enabling Global Engineering Skills with  
Unmanned Aircraft Systems'**

Venue: **Farrell Lecture Theatre  
Peter Nichol Russell Building (PNR)  
University of Sydney**

Refreshments will be available prior to the commencement of the meeting



**PROFILE** Dr KC Wong is the programme co-ordinator for aeronautical engineering, and the Director of Undergraduate Studies within the School of Aerospace, Mechanical and Mechatronic Engineering. From the late 1980s, he had been leading a small team undertaking research on UAS, and has international R&D collaboration with researches in France, Germany, Korea, Mexico and the USA. UAS airframes designed and developed in his group have been utilised in several industry collaborative research projects. He is active in the development of the aeronautical engineering curriculum, where he has initiated and successfully introduced unique experimental learning opportunities. He teaches classes and supervises research in aircraft configuration design and development, and aerospace engineering technologies. Since 2009, he had been the President of the Association for Unmanned Vehicle Systems Australia.

**PARKING:** Best parking is in the Shepherd St Car park corner of Cleveland St and Shepherd St. Please observe parking restrictions and allow time to drive to the University of Sydney, park and walk to the venue. (Refer map). **POST PRESENTATION:** The Sydney Branch Committee will be providing 'Pizzas and Drinks' following the presentation to encourage attendees to mingle and interact with the speaker.



**RSVP:** Attendance registration for the presentation & 'Pizzas and Drinks' afterwards is essential. Please register by clicking on the link: <http://www.raes.org.au/events/> or email by lunchtime Wednesday 1<sup>st</sup> Aug to: [sydneybranch@raes.org.au](mailto:sydneybranch@raes.org.au)

**CHAIRMAN'S MID YEAR UPDATE** If you are like me you will probably be wondering how the middle of the

year came around so quickly? Already we have had half our lectures for the year and I hope you have had a chance to come to some of them. Looking ahead we have the Kingsford Smith lecture coming up on the 20<sup>th</sup> of September. We are honored this year to have Charles Champion, Chief Engineer at Airbus. I hope you can get along to this as we rarely get someone like Charles speaking in Sydney. I have also been working to improve our industry links. One initiative is participating in the activities of the Sydney Aerospace and Defense Interest Group. This group has been formed to improve the linkages between the various large and small aerospace enterprises in the Sydney Basin – to share information and build critical mass. More info can be found at: <http://www.sadiq.org.au/>. We have also done a review of our prizes. One result of the review has been to highlight the lack of a Society prize at Sydney University – which means we miss the opportunity to bring the Society to front of mind at a major source of potential members. The Committee has decided to introduce a small cash prize for the fourth year design competition matching a similar prize offered at UNSW. This also presents us with the opportunity to honor someone who has made a major contribution to the Society or the profession in our region. I would love to hear your ideas on who might be appropriate to honor? Your committee has put a lot of thought into our lecture program in response to your feedback to the survey late last year. Some initiatives we are implementing are:

- Trying to better balance the content by mixing current technical information with issues of broader appeal and historical lectures,
- Having at least one meeting further west eg Bankstown,
- Trialing having food available after the lecture so everyone has a chance to talk to the speaker - not just those attending the dinner after the lecture.

The Committee really wants to continue to improve our lectures and your feedback is always welcome. If you have ideas, I can be contacted on [david.cox@sydney.edu.au](mailto:david.cox@sydney.edu.au).

**'State of the Industry'** – précis of presentation given by Andrew Drysdale, President RAeS Australian Division Wednesday 27<sup>th</sup> June, 2012 who graciously filled in at very late notice due to the illness of the advertised speaker. The numbers come mostly from the recent IATA AGM in Beijing but also from AAPA, Boeing, Airbus and many other sources – the opinions are my own. In 2011, some 2.8 billion people travelled on 35,000 routes connecting 3,800 commercial airports on 30million flights, 82,000 departures

every day. That's 7.6 million passengers a day every day of the year. The population of Australia boarding an aeroplane every three days. Together they flew 5.1 trillion kilometers—34,000 times the distance to the sun. Aviation supports 57 million jobs and \$2.2 trillion in economic activity. Some 48 million tonnes of cargo with a value of \$5.3 trillion was shipped by air. That's over a third of world trade. These figures will grow by an additional 877 million people and 6 million tons of cargo by 2015. That's just 2.5 years from now. And according to IATA almost half of those passengers will be here in the Asia/Pacific region. Already 34% of the world's passenger traffic is here in our region. Europe and North America now only account for 27% each and it is expected both will continue to lose market share and fall to just 22% by 2015. In that same period Asia Pacific will rise to 37%. If we go out to 2030 the world's traffic will rise to a forecast 5.9 Billion passengers and 150 million tonnes of freight. This, and the halo of activity around it, will support 82 million jobs and \$6.9 Trillion in global GDP. (Incidentally Aviation and its partner, tourism contributes 6.1% of Australia's GDP.) It is an industry growing at twice the rate of GDP expansion (5.8%) and as IATA's Tony Tyler puts it, "changing our planet into a global community". (And it's safe! One accident for every 2.7 million flights. At that rate as IATA says, a person could fly safely every day for about 7,000 years.) 1,715 airlines operating around 19,400 aircraft from 3,750 airports worldwide. It is an industry that according to Boeing in the next 20 years will spend \$4.5 trillion to purchase more than 34,000 new aircraft. Of these 70% will be single isle aircraft representing 48% of the value of the purchases. And 40% of all long-range aircraft will be delivered to Asia. If Aviation was a Country it would rank 21<sup>st</sup> in the world in terms of GDP, generating \$425 billion in GDP per year, considerably larger than some members of the G20. Those are pretty dramatic numbers but there's another side of the coin – let me give you some other IATA numbers. Since 2001 the airlines have generated almost 5 Trillion in revenues but the net result was a 30 Billion dollar loss!. It's a bad business for the shareholders. The forecast for 2012 is a profit of just 3 Billion – a net margin of only 0.3%. Indeed, over the last 40 years the average net margin has been a pathetic 0.1%. Even taking the best year of the past decade (2010) we made \$18 billion in profit – that's the entire global aviation industry - equal to a still paltry 3.2% return. That does not come even close to covering the 7 – 8 % cost of capital to finance the industry. And yet this industry has over \$500 billion dollars of investors money tied up – not even earning the return you would get by placing it in a bank. Even at the very top of the industry cycle in 2007 over \$9 billion of investor value was destroyed. As I've said a moment ago – there's around 1,700 airlines operating now. But we've seen more than 1,300 new airlines start-up over the past 40 years, an average of over 30 per year – and yet 32 airlines collapsed last year. And even more failed the previous year. The maths tells me it's not a good business to have your money in. Lucio Tan the sometimes controversial Chairman of Philippine airlines summed it up very well – he lamented "How shallow the reservoir of stability in this industry". But what does this all mean for those whose businesses rely on the Aviation industry. Essentially they are placing their faith in a failed business model – not very clever I would have thought. To be a little more positive – yes the airlines are in crisis mode – but they're always in crisis mode – that's just how it is - Endemic crisis. But the industry's high profile nature that touches almost everything we do, its political sensitivity, National "brand" role and its extraordinary demand for cash and capital combined will take it the future. It is also a catalyst for the halo of industries surrounding the airlines that **do** make money –

including airports, manufacturers and the tourism industry. It is critical to the world's economic wellbeing. And it is essential for business and trade. So the airlines will survive, evolve, merge, change, many will cost their shareholders and Governments enormous amounts of money, **but they will survive**. And in my opinion the Airlines are completely capable of continuing to grow at a rate of 6 to 7% per annum to meet the market demand which will be at least that amount.

**Urthecast: A competition to find the greatest aerial views of the earth** UrtheCast is launching at the AUSVI in Las Vegas a contest to create the 'Ultimate overview of the Earth'. The competition will seek to find, and store on the UrtheCast platform, the greatest and most inspiring aerial views of the Earth from across the globe and reward entrants with sizeable cash and hardware prizes. Refer [www.urthecast.com](http://www.urthecast.com) for details.

**Graeme Maclarn, Sydney Branch Committee Member, during the second half of the 1990s who passed away 30<sup>th</sup> April, 2012 – letter of condolence** Susan, I am writing on behalf of the Sydney Branch of the Royal Aeronautical Society to express our condolences on the sad news of Graeme's sudden death. News of his passing was sent to our members and a number expressed a desire to attend his funeral – despite the short notice by the time the message reached them. Although the committee membership has changed considerably over the intervening period there were still members who had served with Graeme and who spoke fondly of his contribution. I hope it is some comfort to you to know that Graeme's friends in the Society are thinking of him and his family at this sad time. With our best wishes. David Cox, Chairman, Sydney Branch RAeS. **Response:** David, Thank you for your kind words and thoughts. I have been very comforted to receive remembrances of Graeme from around Australia and the world from a diversity of groups and organisations. It is very heartening to know that not only will we, his family miss him, but that he will be missed by friends and colleagues around the world for his contributions to medicine, aviation and aviation medicine. Kind regards, Susan Maclarn.

#### **RAeS London 2012 Membership Survey:**

The Sydney Branch Committee draws your attention to the London Membership Survey which commenced 1<sup>st</sup> August and will close 14<sup>th</sup> September, 2012. Members are encouraged to complete the survey so as to present to London the membership views from downunder. To commence the survey you will need to copy/click on: <https://www.surveymonkey.com/s/AEROSOCIETY> - the survey will take some 15 minutes to complete.

**RAeS Ties, Coffee Mugs, and Lapel Pins:** Selection of RAeS silk Ties direct from London - \$30 each; Sydney Branch coffee mugs & lapel pins available at Branch meetings for \$10 each.

**DIARY 2012 6-9 Aug:** AUSSI'S Unmanned Systems North America 2012, Las Vegas. [www.auvsi.org](http://www.auvsi.org)

**22 Aug:** CASA, ATSB, Airservices, BoM, and the RAAF presents 'Aviation Access all information areas'. Venue: Bankstown Sports Club, 8 Greenfield Parade, Bankstown. Refer: [www.casa.gov.au/avsafety](http://www.casa.gov.au/avsafety)

**25 Aug:** Aviation Careers Expo 2012 hosted within the Brisbane International Airport precinct. Refer <http://www.aviationaustralia.aero/expo/index.php>

**20 Sept:** Sir Charles Kingsford Smith Lecture and Dinner to be presented by Mr. Charles Champion, Executive Vice-President Engineering, Airbus, SAS.

**23-28 Sept, 2012:** 28<sup>th</sup> Congress of the International Council of the Aeronautical Sciences, Brisbane, QLD. The programme can also be downloaded from the ICAS website [www.icas.org](http://www.icas.org) and the congress website [www.icas2012.com](http://www.icas2012.com)

**13-15 Nov:** 2012 Asia-Pacific International Symposium on Aerospace Technology, Ramada Plaza Jeju Hotel ([www.ramadajeju.co.kr](http://www.ramadajeju.co.kr)), Jeju Island, Korea.