NEWSLETTER

Michael deLaChapelle FRAeS
Senior Technical Fellow, The Boeing Company
discussing
"Getting Connected in the Air – The Quest for Broadband Aircraft Connectivity"

Date: **Wednesday, 26th August 2015**
Time: **18:00 for 18:30 hours**
Venue: **Mech Eng Theatre, Mech Eng Building, Uni of Sydney**
Refreshments will be available **prior** to the commencement of the meeting Attendance will attract 1 CPD hour

Profile: Mike is a Senior Technical Fellow in Boeing Defense Space & Security with over 34 years experience, including 8 years at Hughes Aircraft Co (now Boeing) and currently supports business and technology development in the Australia region, and is based in Sydney. Prior to his current assignment to Australia, he worked in Seattle for 25 years and served as Chief Technologist for C3 Solutions in Boeing's Networks & Space Systems Division where he led new product/service development and new business activities. Mike is a technical expert in RF and optical communication systems, with a focus on wideband satellite communication (SATCOM) and line-of-sight data links, supporting commercial and military programs across the Boeing enterprise. He has developed satellite payload systems as well as satellite earth stations. Over his career Mike has led or supported programs to implement wideband SATCOM connectivity products & services to a wide range of mobile platforms, including all types of manned and unmanned fixed-wing aircraft, rotorcraft, ships, trucks, etc. He has also been very involved with the development of communication subsystems (SATCOM terminals, networking equipment) and components (radomes, antennas, modems, controllers).

Mike has recently championed and led the development of common Boeing Ku and Ka-band SATCOM terminal provisioning (radome, mounting systems) for both commercial and military aircraft. He has defined Boeing's phased array antenna product strategy and helped develop a new low-cost design concept based on SiGe technology & commercial electronic packaging. He has been a major contributor to Boeing Commercial Airplane digital airplane/airline initiatives in which technology and service models to improve aircraft operational efficiency were evaluated that are enabled by persistent real-time SATCOM/cellular connectivity.

Mike was lead architect for the Connexion by Boeing (CbB) broadband aeronautical SATCOM system from its inception in 2000 to service termination in 2007, and continued to provide support to the Boeing Broadband SATCOM Network (BBSN), an off-shoot of CbB for service to the US Air Force VIP fleet.

Prior to CbB, Mike worked on a variety of geostationary and non-geostationary commercial and military satellite programs, as well as airborne radar, free-space and fiber-optic sensors and fly-by-light systems.

Mike holds over 25 US and international patents, has multiple Boeing special invention awards, and has authored many papers. He has taught formal classes on mobile SATCOM through the Boeing Ed Wells Partnership and UCLA Extension. Mike holds Bachelor and Masters Degrees from Cornell University, Ithaca NY in Applied Physics and Electrical Engineering, respectively. Mike was born and raised in New England.

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ALAN JOYCE
Business Lunch 9th September, 2015

The Australian Division of the Royal Aeronautical Society is proud to invite you to an executive business lunch on 9th September at the Four Seasons Hotel to hear from Alan Joyce, CEO of Qantas, speaking about creating a sustainable, resilient and competitive business.

Tickets are available through: alanjoyce.eventbrite.com.au
Members and Corporate Partners: $150
Non-Members: $175   Corporate Tables (10): $1500
Date: 9 September 2015   **Time:** 12pm arrival for 12.30pm
Venue: Four Seasons Hotel, 199 George Street, Sydney

Synopsis: While broadband internet connectivity has become nearly ubiquitous on the ground, connectivity in the air remains a largely unfulfilled promise more than ten years after the first broadband commercial services were introduced. Some regions of the world like the US are approaching 100% broadband internet availability on commercial flights (737 and larger), while connectivity on short-haul flights in other regions like Australasia is near zero. This lecture will describe options for implementing broadband aircraft connectivity using satellites (SATCOM) and air-to-ground communication, and how this capability benefits commercial aviation by enabling passenger and crew services, and benefits military aviation by enabling the sharing of high-bandwidth sensor data like video and imagery. For example, Boeing recently installed a broadband SATCOM terminal on a Royal Australian Air Force (RAAF) C-17 to enable en-route mission planning using real-time video transmission from a remote UAV for their Jericho Dawn demonstration. Having a fully networked RAAF is a key objective of Plan Jericho announced by the Chief of Air Force at the Avalon 2015 Air Show. Boeing is doing its part to offer a wide range of broadband aircraft connectivity solutions to both commercial and military customers. We have supplied advanced commercial and military communication satellites to Australia, and we are offering aircraft SATCOM terminal equipment to access these and other satellites, including the Wideband Global SATCOM (WGS) military satellite network. This lecture will describe the Ku-Band and Ka-Band broadband SATCOM terminal equipment and aircraft mounting provisions that Boeing offers for commercial and military aircraft, and the challenges of developing and qualifying this equipment. The performance of the aircraft SATCOM terminal equipment (data rate, geographic coverage, etc.) on different SATCOM networks will be discussed. The current generation of high-profile SATCOM antenna types will be briefly described; along with a glimpse into next-generation low-profile antenna technologies that promise to reduce aircraft weight and drag.

RSVP: Whilst attendance is free - registration for the evening **is required**. Please register by clicking on/copying and pasting into your URL this link: http://raesaug15.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.

Dinner: Following the presentation the Committee will take Michael and his wife Maureen to dinner at the nearby Buon Gusto Italian Restaurant, 368 Abercrombie Street, Chippendale. Attendees are encouraged to join in. Cost will be approx $40 pp inc soft drink & wine.

Parking: is available in the Shepherd Street multi-story car park, located on the corner of Cleveland St and Shepherd St. The rate is $2 per hour (up to $6 maximum), but note that only gold coins are accepted in some machines. Parking is also available in University of Sydney On-Campus Parking for $2 per hour (up to $6 maximum). Additionally, free parking is available in surrounding streets. Please observe parking restrictions and allow time to drive, park, and walk to the venue.

Public Transport: The closest train station is Redfern, which is a 10 minute walk away from the venue. Buses 422, 423, 426, 428, 370 and 352 all go past the University of Sydney (on City Road). From Railway Square near central station any 42X bus (e.g. 422, 426…) and the M30 will take you to the University. These buses come quite frequently at that time of night (every 2-5 minutes). Please allow time to travel by public transport, including waiting time, and time to walk to the venue.

Branch Audited Financial Accounts 30th November, 2014 A copy of the 2014 Audited Accounts has been included with the paper mail out. Any member who receives an email of the newsletter and wishes to receive a copy of the Audited Accounts, please send an email to jeff.lock@bigpond.com.au and include your RAeS Aust Div Membership number.

Future Newsletters to move to softcopy: Today the usage of technology has enabled almost everyone to receive emails and access the World Wide Web which has enabled many organisations and businesses to take advantage of the technology to deliver better services and provide more information without being constrained by rising costs associated with providing paper based delivery. Our website has been updated to allow our members to update their details including email addresses. Would all members who have internet access please confirm your details including your email address by clicking on: http://bit.ly/raesmemberupdate or alternatively email Mr Peter Brooks (austdivision@raes.org.au) Whilst it is accepted that some Members may wish to continue receiving paper delivery the committee would like that decision to be an 'opt in' by members for continuation of paper delivery rather than an 'opt out'. Should you wish to continue receiving paper please email the Administration Officer Mr Peter Brooks (austdivision@raes.org.au) or send a letter to Mr Peter Brooks, PO Box 179, Cronulla NSW 2230 requesting to stay with paper.

2015 Diary: **22-24 Sept:** Safeskies Conference 2015 'Training for Change' at the Realm Hotel, Canberra. Sir Reginald Ansett Memorial Lecture and Dinner 22nd September at Parliament House - guest Lecturer Air Chief Marshal Sir Angus Houston AK AFC (Retd). Refer for further details: www.safeskiesaustralia.org
16 Nov: CONFIRMED 57th Sir Charles Kingsford Smith Lecture and Annual Branch Dinner – to be presented by Mr Chris Jenkins, Chief Executive, Thales Australia and NZ entitled **"Kingsford Smith: Technology….The Sky is the Limit!"**.
25-27 Nov: 7th Asia-Pacific International Symposium on Aerospace Technology (APISAT) which will be held at the Hilton Cairns Hotel, Queensland, Australia, on 25 – 27 November 2015. Since the inception of APISAT in 2008 by the national aerospace societies of Korea (KSASS), China (CSAA), Japan (JSASS) and Australia (RAeS Australian Division), APISAT has become the prime forum for aerospace research and development in the Asia-Pacific region. **Early Bird Registration opens 15 July 2015.** Refer for further details: www.apisat2015.com/
Dec 9: Annual General Meeting, 18:00 sharp, 3 Wise Monkeys' Pub, 555 George St, Sydney (second storey)
Sept 2017: International Astronautical Congress to be held in Adelaide. Thousands of scientists, including some 200 astronauts, will participate in the international space congress. Further details will be advised when available.