



ROYAL AERONAUTICAL SOCIETY

[www.raes.org.au](http://www.raes.org.au)

## AeroNEWS

Newsletter of the Canberra Branch of RAeS, Australian Division Inc.

- March 2011 -

### Introduction

In March there will be no meeting on the usual second Tuesday. Instead there will be two special presentations later in the month.

On Tuesday 15<sup>th</sup> March the Branch is co-sponsoring with Engineers Australia an Eminent Speaker's visit by Dr Mark Shuart. Dr Shuart recently retired as Director for Structures & Materials at NASA Langley Research Center. His **lunchtime** presentation "*Advanced Composites Technologies for Heavy Lift Launch Vehicles*" will be at Engineers Australia, **not at ADFA**.

On Tuesday 22<sup>nd</sup> March, Mr Steve Roberts of Martin Baker will give an evening presentation at ADFA on ejector seats, with special reference to the JSF. We are promoting this presentation jointly with American Institute of Aeronautics and Astronautics.

See below for details of both.

Branch lectures are open to all with an interest in aviation so please circulate the Newsletter to colleagues, urge them to attend and encourage them to join the Society. There are appropriate grades for everyone and membership includes subscription to the excellent Aerospace International magazine. For information and forms refer to <http://raes.org.au>, or call me on 6255 2347

If you attend regularly but prefer not to join the parent Society we invite you to become a "Friend" of the Branch, and pay a small annual subscription that helps defray our costs. Friends subscriptions for 2011 are now due; details below.

If you do not get this Newsletter electronically and can, just ask. It saves time, trees and money. Conversely, ask to unsubscribe if you are no longer interested in Branch activities.

Martin Aubury,

Newsletter Editor

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### March Lectures

#### Tuesday 15 March

12 noon for 12.30pm start, in the Auditorium, Engineers Australia, 11 National Cct, Barton.

Dr Mark Shuart on "*Advanced Composites Technologies for Heavy Lift Launch Vehicles*"

**NB RSVP to Engineers Australia is required** via: <http://www.engineersaustralia.org.au/eminentspeaker/> and there is a charge of \$10 for those who are not members of RAeS or EA.

NASA's Lightweight Spacecraft Structures & Materials (LSSM) Project aims to develop composite materials and structures technologies for the largest composite aerospace structures ever made, and contribute to specific launch vehicle applications. The LSSM Project has three major technical elements: materials and manufacturing; structural concepts development and assessment of lightweight components; and testing and evaluation.

This presentation will describe the activities and plans for the LSSM Project including results from materials selection and structural concept evaluations. Plans for continuing activities include studies for non-destructive evaluation/structural health monitoring, damage tolerance, joints, and material and structural testing, and these studies will be described. A major emphasis this fiscal year is work on manufacturing a demonstration barrel made of six large curved panels that when assembled, result in a 10m diameter barrel.

Dr Mark Shuart is an internationally recognised authority on composites. He has worked for most major US manufacturers and held senior management positions at NASA for 32 years before recently retiring as Director for Structures & Materials at NASA Langley Research Center. He is now a Research Professor in the Department of Materials Science and Engineering at Virginia Tech. and maintains a Senior Advisor position at NASA.

Dr Shuart was awarded the NASA Outstanding Leadership Medal for his contributions to structures & materials research and is also an Associate Fellow of the American Institute of Aeronautics and Astronautics.

## Tuesday 22 March

6.00 pm at Military Lecture Theatre, ADFA

Mr Steve Roberts on ***“Martin-Baker ...the JSF story so far”***.

Martin-Baker Aircraft (MBA) became involved in the Joint Strike Fighter (JSF) programme in 1995, during initial feasibility studies. The subsequent competitive Concept Demonstration Phase involved two rival industry consortia led by Boeing and Lockheed Martin, and culminated in the government selection process which Lockheed Martin won.

Throughout, MBA has been supplier of the ejection seat within the Lockheed team and is now fully engaged in the current phase of the programme – known as System Development & Demonstration (SDD). The SDD technical requirements have demanded innovative solutions for all sub-systems of the aircraft, but avoidance of inherent programme risk has been equally essential. This presentation will describe Martin-Baker’s role in the programme and specifically how Human Factor science, engineering and integration have played their part for what is, possibly, the last manned front-line fighter.

Steve Roberts graduated from City University in London with a BSc in Air Transport Engineering. He was commissioned into the RAF as an Aero-Systems Engineering Officer, prior to joining MBA 21 years ago, as a Project Engineer.

At MBA, he has been responsible for ejection seat development programmes for the Dassault Rafale, Embraer EMB-314 Super Tucano, Panavia Tornado Performance Enhancement and Eurofighter Typhoon. Since 1995, he has also been responsible for the development of ejection seats for both Boeing and Lockheed Martin JSF submissions.

Steve is certified as a European Professional Engineer (Eur Ing) and is a member of ASMA, AIAA and SAFE in the US, the RAeS in the UK, and FEANI in Europe.

Before the lecture meet colleagues for refreshments in the Officers Mess and afterwards you are welcome to join Committee and speaker for dinner.

## Report on February Meeting

Mr Michael Monck is Vice President of the Canberra Region Aviators Association. CRAA aims to establish an airfield close to Canberra that is more suitable for recreational aviators than Canberra International Airport. He introduced himself as a keen aviator from a family of aviators and explained that his professional work provides advice to governments and he is devoting the same skills to promotion of the second airfield.

Drawbacks of Canberra International for recreational and training flights include cost, security restrictions and operational pressures. What CRAA advocates

instead is an airfield run on a non-profit basis by an incorporated association that provides the full range of facilities needed by GA owners/flyers and flying schools. As a model, Mr Monck mentioned the Wedderburn airstrip where aviators fly, fraternize and house their aircraft.

A survey conducted by Access Economics shows a need exists locally for such a facility, University of Canberra is developing a master plan and ACT Government seems responsive. However finance and a definite location must still be resolved and opposition from environmental groups is expected.

## Friends Subscription

Those who regularly attend lectures but do not want to join the main Society are invited to become a “Friend” of the Branch. 2011 subscriptions are now due, still only \$25. Please send a cheque payable to “Canberra Branch of Royal Aeronautical Society” and your contact details to the Treasurer Robin Stanier at 20 Gouger St., Torrens ACT 2607. No form is necessary. Or to arrange to an electronic transfer email [rstanier@grapevine.com.au](mailto:rstanier@grapevine.com.au) or phone Robin on 6286 3655.

## Dates for the Diary

**Tuesday 15 March**      ***Eminent Speaker Lecture***

Dr Mark Shuart on ***“Advanced Composites Technologies for Heavy Lift Launch Vehicles”***; luncheon at Engineers Australia,

**Tuesday 22 March**      ***Branch Lecture***

Mr Steve Roberts on ***“Martin-Baker ...the JSF story so far”***.

**Tuesday 12 April**      ***Branch Lecture***

Mr John Grubb on ***“Project Wedgetail”***.

**Canberra Branch of the Royal Aeronautical Society, Australian Division Inc.**

**GPO Box 1056, Canberra, ACT 2601**

**Committee 2011**

**Chairman:**      Jon Pike

**Vice Chair:**      Eugene Holzapfel

**Secretary:**      Neville Probert

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