

2021 - 2022 Lectures

15 March: Air Accident Investigation Branch
by Peter Coombs, ex AAIB Inspector



The speaker, who has recently retired from the post of Senior Inspector (Engineering) from the UK Air Accidents Investigation Branch, will describe how the process of accident and incident investigation is carried out following both 'domestic' and International events. This will be followed by brief descriptions of some interesting past investigations in which the speaker has participated over some 47 years with AAIB.

3 May: Engine Power - Where will it come from in the Future by Conrad Banks, Chief Engineer -Defence Future Programmes, Rolls-Royce plc.

For over six decades the gas turbine has dominated aircraft propulsion, delivering unrivalled levels of power density. But what about the future? Is the gas turbine nearing the end of its evolutionary journey and are there any game changing technologies set to emerge in aircraft power and propulsion? This presentation will explore both of these questions, with particular focus on the transformational technologies and capabilities offered by more electric and hybrid solutions.

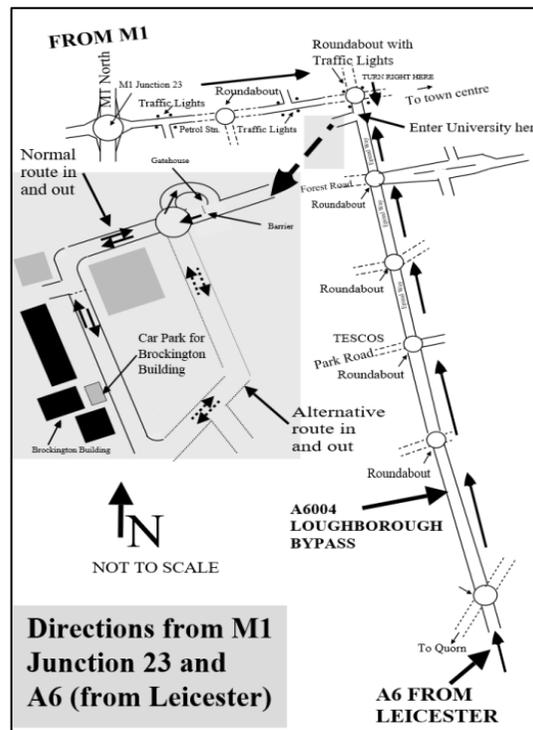
7 June (6:30 pm, Room J104, Edward Herbert Building) - Loughborough University MEng Final Year Aircraft Design Projects : Joint Event with Department of Aeronautical and Automotive Engineering

This series of mini-lectures will be given by groups of final year MEng students and will describe the results obtained from their projects.

Branch Committee

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Secretary: Colin Moss MRAeS, 62 Spinney Hill Dr, Loughborough LE11 3LD Tel.: 01509 239962
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2021 - 2022 Programme

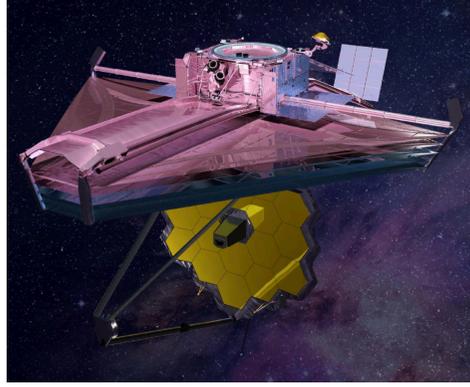


Unless otherwise stated, all meetings commence at 7.30 p.m. and will be held in Room U020, Brockington Building, Loughborough University (see map on page 6).

N.B: Attendance at lectures is free to RAeS members and to students whether members or not, but other visitors are invited to make a donation of at least £3 per lecture. Alternatively those others can become 'Friends of the Branch' in return for a payment of £15 to cover the entire season of lectures. All are welcome and we hope to see you at one of our lectures soon.

For the latest update to the Branch's programme consult our website:
www.loughborough-raes.org.uk

12 October: Previewing the James Webb Space Telescope (JWST) by John Thatcher, Project Manager, Mid-Infrared Instrument, Retd.



The JWST is optimised for making infrared observations in order to study the origin and evolution of galaxies, stars and planetary systems and is designed to look further back in space and time than the Hubble Space Telescope. It is a massive international project, decades in the making involving NASA, the European Space Agency and the Canadian Space Agency. Expected to launch before this lecture, the JWST will be deployed in space near the Sun-Earth Lagrange point.

2 November: Tempest - New Technologies, New Partnerships by Michael Christie, Director, Future Combat Air Systems, BAE Systems



The Tempest programme, announced at the 2018 Farnborough International Airshow will ensure that the UK remains a world leader in the combat air sector. The lecture will cover the challenges and achievements of the programme since that 2018 launch which set out a vision of exploring new technological solutions together with a different approach to forming international partnerships.

Ellyn Richards Prestige Lecture

16 November: Decarbonising Aerospace by Dr Mark Taylor, Rolls-Royce Fellow, Gas Turbine Architecture

1. Discussion of the environmental impact of aviation, and how it compares to others sectors. 2. High level understanding of the factors which influence the payload and range of aircraft and how this is impacted by the choice of fuel and engine design. 3. Review of what RR is doing to decarbonise aerospace (engine design, SAF, hybrid, etc.) and what the future might look like.

7 December: Practical Zero Emission Aviation by Julian Renz, ZeroAvia

ZeroAvia's HyFlyer project demonstrates alternative decarbonised powertrain technology replacing conventional piston engines in propeller aircraft. Power is supplied by electric motors, hydrogen fuel cells and gas storage. The initial application is long-distance flight by a 6-seater followed later by 19-seat aircraft.

2022

18 January: Miles M52 by Mike Hirst, RAES Loughborough Branch Committee Member



The M52 was a 1940s British design for a supersonic research aircraft capable of at least 1000 mph. After 3 years of highly secret work, the project was cancelled for reasons that were never entirely clear. This lecture, which is based on material inherited from leading members of the M52 team and some recently released from the National Archive, looks at the technical and political issues.

8 February: The RAF P-8A Poseidon Force by Gp Capt Jim Beldon, ISTAR Deputy Force Commander



Exploring the evolution of the RAF's P-8A Poseidon force and examining the procurement, engineering and operational aspects of its introduction to service. Also covered will be aspects of training, current operations, and the development of RAF Lossiemouth as it prepares to receive the P-8's new stable-mate, the E-7 Wedgetail.

22 February: Electric Flight by Dr Guy Gratton, Aerospace Integration Research Centre, Cranfield University

Electric flight is increasingly seen as a necessary next step in aviation, but despite the announcement of hundreds of projects, it remains very much in its infancy. Dr Gratton will describe the technical hopes and challenges, and the few projects he thinks are going to succeed. By the time of the lecture, he hopes to have test flown several electric aircraft himself, and will also be describing the challenges behind operating electric aircraft from personal experience.

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