

INDEX of RAeS Loughborough Branch Lectures (2005-2020)

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AERO-ENGINES

Rolls-Royce Flying Test Beds	2007/08	Barry Hocking (Rolls-Royce)
RR Trent 1000 - Boeing 787 Dreamliner	2006/07	Jonathan Windlass (Rolls-Royce)
RR Trent XWB-84 – A350XWB	2016/17	Mark Wainwright (Rolls-Royce)
RR Evolution of engines	2017/18	Prof Rick Parker (Rolls-Royce)
Lower NOx Combustor Developments	2009/10	Prof Jim McGuirk (L'boro Univ)
Past, Present & Future Engine Trends	2009/10	Nick Howarth (Rolls-Royce)
Future Propulsion	2014/15	Rich Parker (Rolls-Royce)
SABRE and Skylon	2015/16	Mark Thomas (Reaction Engines)

AIRCRAFT

Less than 12,500lb

Auster Aircraft - rebuild/company history	2016/17	Terry Dann (private pilot)
DH Tiger Moth – 70 th year restoration	2014/15	Terry Dann (private pilot)
Pilatus PC-21 – engineering	2005/06	B Cervia & E Burdock (Pilatus)
Seawind – amphibious light aircraft	2011/12	Tony Irwin (pilot/developer)
Vans RV-6 - global flight by owner	2013/14	Manuel Quelrol (private pilot)
Atlantic Microlight – Oshkosh and back	2016/17	Eddie McCallum (private pilot)
e-Go Aircraft Design	2017/18	Giotti Castelli (project designer)
Eclipse 500 - development/certification	2006/07	Oliver Masefield (project designer)

Models and human/solar powered aircraft

Large scale aircraft model kits	2013/14	Simon Owen Airfix)
Large Model Aircraft	2016/17	Tony Hooper (LMA Association)
Human powered aircraft	2015/16	Dr Bill Brooks (P&M Aviation Ltd)
Solar Stratos project	2018/19	Raphael Domjan (Solar Explorer)

AIRCRAFT (civil airliners)

Airbus A300 'Voyager' - pax/tanker roles	2013/14	Geoff Winterbottom (Cobham)
Airbus A318 – London-New York service	2013/14	Capt Tony Payne (BA)
Airbus A350 XWB	2008/09	Rob Bray (Airbus UK)
Airbus A350 XWB	2012/13	Imran Khawaja (Airbus UK)
Airbus A380 - From Dream to Machine	2006/07	Rob Bray (Airbus UK)
Airbus A380-800 – wing design/build	2013/14	Huw Davies (Airbus UK)
Airbus Beluga XL - oversize Transport	2019/20	Veronique Roca (Airbus)
Airbus Corporate Jet Cabins	2017/18	David Vellupilai (Airbus)
Boeing 787 Dreamliner	2011/12	Miguel Santos (Boeing)
Concorde – Design Engineer recollections	2010/11	Ted Talbot (BAe Filton)
DH Comet – structural failure	2017/18	Dr Paul Withey (metallurgist)

AIRCRAFT (military)

Airbus A400M - towards entry to service	2012/13	Brian Kitson (Airbus UK)
Airbus A400M Wing & Engine Development	2005/06	Roger Taplin (Airbus & Rolls-Royce)
ASTOR – covert surveillance	2010/11	Flt.Lt Coates & F/O Daerin
BAE Harrier variants - Jet VTOL	2006/07	John Farley (BAE Systems)
BAE AEW Nimrod & Vulcan Tanker	2006/07	Wg Cdr Robby Robinson (RAF)
BAE Nimrod MRA4	2010/11	Paul Grady (BAE Systems)
Eurofighter/Typhoon Capability	2015/16	Mark Bowman (BAE)
Hawker Hunter - UK's Leading jet Fighter	2008/09	AVM H A Merriman (RAF)
F-35B (JSF) - Boeing vs L-M fly-off	2019/20	Rr Admiral Simon Henley (Rolls-Royce)
Lockheed-Martin F-35B Lightning II Update	2007/08	Ivor Evans (Lockheed-Martin UK)
Lockheed Martin F35B Lightning II	2014/15	Wg Cmdr Jim Schofield (RAF)
Lockheed-Martin F-35B Lightning – cockpit	2013/14	Graham Tomlinson (BAE Systems)
Lockheed SR-71 Pilot's experience	2015/16	Richard Graham (ex USAF)
Lockheed SR-71 Mission to Murmansk	2016/17	Richard Graham (ex USAF)
McDD F-4 Phantom - Chasing Bears	2018/19	Nick Anderson (ex RAF)
Blue Steel – V-bomber weapon	2018/19	Air Cmdr Norman Bonnor (ex RAF)
High Alpha Testing and Flight Safety	2019/20	Terry Smith (BAE Systems)

AIR TRANSPORT

Airlines and infrastructure

BMI baby - marketing and operations **2005/06** David Hodge (BMI Baby)
Environmental impact - Sustainability **2010/11** Prof Callum Thomas (Manchester Univ)
Low-cost Airlines – Challenges faced **2008/09** Dr Keith Mason (Cranfield Univ)

Airports and ATC

Air Traffic Safety **2015/16** Dr Sam Espig (NATS)
Air Traffic Control System - Heathrow **2019/20** Adam Spink (NATS – Heathrow)
East Midlands Airport - operations **2011/12** John Frogatt (EMA ops team)
HIAL Airports - remote base ops **2016/17** Andy Rackham (ops specialist)
Heathrow Hub- 3rd runway proposal **2014/15** Jock Lowe (former BA captain)
Shannon Airport – past and future **2012/13** Joe Buckley (Shannon manager)
UK Air Accidents Investigation Branch **2008/09** Alan P Simmons (AAIB)
Accident Investigation - overview **2016/17** Prof G Braithwaite (Cranfield)
East Midlands - accident **2013/14** Blundell/Bromfield (CoventryUniv)

HISTORICAL

Army Plane No 1 – Farnborough Replica **2013/14** David Wilson
Barnes Wallis – his life and times **2007/08** Peter Rix
British Aircraft Industry 1908 – 2008 **2008/09** Dr R V Smith
British Fighter & Interceptor Projects **2009/10** Tony Buttler
Two Flights to Victory (USAF – Japan) **2008/09** David Styles
One of the Few (RAF career BofB to-59)) **2009/10** John Shipman
Imperial Airways – UK-African 1932-36 **2016/17** Mike Hirst (Branch Committee)
Kingston 100yr of aircraft production **2014/15** Chris Farara
Lancaster lost – survivor story for WW2 **2013/14** Laurie Tillen
Leicestershire & Rutland Aviation History **2007/08** Mac Maccabee (Branch Committee)
Melton Mowbray – WW2 ferrying ops **2014/15** Ray Flude
Mt Everest overfly in Westland Wallace **2008/09** Rt Hon Lord Selkirk QC
RAeS – 150th Anniversary **2015/16** Air Cmdr Bill Tyack
RAF WW2 conservation **2012/13** W/O Ken Ball (BBMF)
Rolls Royce Merlin engine development **2014/15** Peter Mayward (RAF engr)
Royal Aircraft Factory - Farnborough **2015/16** Dr Graham Rood (FAST)
Saunders-Roe Princess – flying boat **2010/11** Bob Wealthy
Schneider Trophy **2005/06** Derek James
Schneider Trophy **2012/13** Mike Marsden

MARITIME (related to aviation)

100 Years of Submarine Technology **2005/06** Tim Roberts (BAE Systems)
Astute Class Submarine **2012/13** Simon Purvis (BAE Systems)
(Quicksilver: World Water Speed Record **2019/20** Nigel McKnight - awaiting author approval)
QE Class Carriers – pre launch **2016/17** Andrew Matters (ACA)
QE Class Carriers – post-launch **2018/19** Mark Dannett (BAE Systems)

MILITARY (strategy and operations)

Air Power & the Future **2005/06** AM Sir Peter Norriss (RAF)
BAE Warton Superfighters **2015/16** Tony Wilson (BAE Systems)
Defence Technical Undergraduate Scheme
& Aircraft Weapons & Armaments **2005/06** WG Cdr Keith Pearce (RAF)
Operating the RAF C-17 **2007/08** Ft Lt J J Jackson (RAF)
Red Arrows – pilot's perspective **2012/13** Ft Lt Mike Child (RAF)

ROTORCRAFT and LIGHTER-THAN-AIR

Airlander – Hybrid Air Vehicle **2017/18** Andy Barton (Airlander)
Bristol Helicopters - North Sea Ops **2009/10** Capt David Higgins (Bristow)
CV-22 Osprey - tilt rotor **2015/16** Lt Col Jim Peterson (USAF)
Helicopter Operations **2018/19** Stephen Hogarth (ex Bristow)
The Fairey Rotodyne **2019/20** David Gibbins (ex Fairey)

TEST PILOTS – alphabetical by surname

Training Pilots on Vintage Aircraft	2006/07	Roger Bailey (Shuttleworth)
Fighter & Test Flying Reminiscences	2006/07	Gp Capt Wally Bainbridge (RAF)
Recollections of early test flying	2011/12	Capt Eric 'Winkle' Brown (RAE)
Test Pilot – 1950s to EAP/Typhoon	2011/12	David Eagles (RN and BAe)
Flying the Spitfire - Rolls-Royce Heritage	2011/12	Paul O'Dell (RAF and Rolls-Royce)
From VSTOL to Blind Landing	2007/08	Wg Cdr Clive Rustin (RAF)
From Comet to Harrier	2005/06	Duncan Simpson (Hawker)

SPACEFLIGHT

Commercial Spaceflight	2018/19	Dr Patrick Artis (Virginia Tech)
Nanosatellites: Enabling Technologies	2019/20	Dr Katharine Smith (Manchester Univ)

TECHNOLOGY

3D Printing – digital technology	2016/17	Kevin Smith (Voxejet)
Aircraft Survivability	2012/13	Dr Andrew Irwin/Dr Peter Render
ASTRAEA – autonomous flight Jetstream	2012/13	Lambert Dopping-Hepenstall
Bio Fuel	2011/12	Chris Lewis (Rolls-Royce)
Bird Strikes and airframe design	2014/15	David Coldbeck (Spirit Aerospace)
Bloodhound SSC	2017/18	Richard Noble (Team manager)
CFD & Aircraft Design	2018/19	Prof Gary Page (Loughborough Univ)
Composites	2010/11	David Abraham (Cobham)
Cutaway Drawings	2011/12	Tim Hall (Flight International)
Early aircraft handling qualities	2015/16	Roger Bailey (Shuttleworth Collection)
Ejection Seat - F35	2010/11	Steve Roberts (Martin Baker)
Flight Simulation	2011/12	Mike Southworth (BAE Warton)
Formula One Aerodynamics	2009/10	Geoff Richards (Ex McLaren F1)
Formula Student – racing cars	2010/11	Scot Layton (Loughborough Univ)
Graphene – A new material for Aviation	2017/18	Dr Mattheiu Gresil (Manchester Univ)
Helmet Displays – development stages	2018/19	Alec Cameron (BAE Systems)
How Wings Work	2007/08	Holger Babinsky (Cambridge Univ)
Hybrid Electric Aircraft	2018/19	Dr Panis Lascaridis (Cranfield Univ)
Innovation - How Did They Think of That?	2005/06	Chris Clarkson (BAE Systems)
Marshall Aerospace	2008/09	Martin Broadhurst (Marshall CEO)
Micro Air Vehicles, Tools or Toys	2006/07	Gordon Dickman (BBRL)
Sopwith Camel & Eurofighter Typhoon	2017/18	Dr Eric Gilles (Glasgow Univ)
Tornado to Typhoon and Beyond	2007/08	Billy Beggs (BAE Systems)
Towards a Silent Aircraft	2009/10	Dr Tom Hynes (Cambridge Univ)

UAVs

UAV Systems – Breakthroughs /Hurdles	2010/11	Dr Aryhus Richards
Reaper UAV	2017/18	Paul Clarke (Qinetiq)
Taranis – UAV Flight Testing	2018/19	Jon Wiggall (BAE Systems)

LOUGHBOROUGH UNIVERSITY – MEng project presentations

2013/14	Summary of 3 projects
ODYSSEY	High-speed transport
AIRCRAFT FOR AFRICA	Autogyro
VIPER	Lunar resource exploration

2014/15	Summary of 5 projects
SOFA	General Aviation Jet Aircraft
ASTERIA	Spacecraft to explore asteroid 2-Pallas
LEAF	222 seat – Loughborough Environmental Aircraft for the Future
HELIOS	Human powered aircraft
ZEUS	IMechE UAS challenge – design

LOUGHBOROUGH UNIVERSITY – MEng project presentations - continued

2015/16	Summary of 6 projects
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SURGE	Electric Aerobatic Racer
LASARIUS	Planetary defence system (deep space)
HUMMINGBIRD	Solar-powered round-the-world airship
PROVIDENCE	UAS to Fiji Government spec (low-cost maritime surveillance)
MRT	Multi-role transport – 250,000kg mass, 5,000n.m. range
AUXILIUM	IMechE UAS challenge – design*

2016/17	Summary of 5 projects
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NEMESIS	Autonomous fighter for the future
CASIUS	Manned mission to Mars (912 days – 524 days on surface)
SKELRON	Supersonic Transport – trans pacific at Mach 2.5
PEGASUS	Military Flying Car – potential replacement for V-22 Osprey
ATLAS	IMechE UAS challenge design*

2017/18	Summary of 7 projects
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AMPLUS	Stationary X-Ray (Legrange point – behind the Moon)
MAKO	Wing in ground effect vehicle – 85km/hr, 1.5hr, range 121km
ANDRASTE	Autonomous UAV
AMP-AIR	Hybrid electric airliner
HEGASass	Hybrid G.A. aircraft – 100n.m. 200kts, petrol/electric
MEDIFETCH	Medical express UAV (60km out-back range/1hr delivery)
PHOENIX UAS	IMechE UAS challenge – design*

2018/19	Summary of 5 projects
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SLUAV	Submarine launched UAV – able to use existing torpedo tube
ADRS	Autonomous disaster relief system – based Haiti earthquake
SKYRIDE	Hybrid air taxi – 4 pax/155nm/65min – good pax comfort able
MASCOT	Orbital UAV – in atmosphere of Titan (Moon of Saturn)
LUNAR ACCESS	Based on NASA requirement - support crew of 4 for 8 days

* IMechE UAS challenge is an annual “design and demonstrate” competitive event open to education-based teams throughout the UK. Full information at:

<https://www.imeche.org/events/challenges/uas-challenge>