



ROYAL AERONAUTICAL SOCIETY

Loughborough Branch

Minutes of the Annual General Meetings held on Tuesday 19th April 2016 (including details of the lecture which followed the AGM)

No. attendees – 32.

1 Apologies for Absence

These were received from Vipran Kannan and Mike Hirst.

2 Minutes of AGM held on 28th April 2015

These were approved.

Proposer – Daniel Nutt, Secunder – Barry Jacobson

3 Matters Arising

There were none.

4 Secretary's Report

See Appendix 1 (Secretary's Report to the 2015/16 Season AGM held on Tuesday 19th April 2016).

The Secretary stated that:

- a. Once again, the Loughborough Branch had held an excellent season of lectures covering all aspects of aerospace – historical, present and the future; reminiscences and modern technology.
- b. The average attendance had been **150**. (N.B. This excludes the lecture immediately following the AGM and the preceding summer's evening of lectures by Loughborough University's Aeronautical and Automotive Engineering (AeAE) Department's final year MEng students.) This compares with **168** in 2014/15, **158** in 2013/14, **121** in 2012/13, and **124** in 2011/12. The slight fall in attendance was probably due to slight differences in emphasis for the content of the 2015/16 season's lectures as compared with that of previous seasons.
- c. There were 5 lectures with other organisations. These organisations were Loughborough University Aeronautical and Automotive Engineering (AeAE) Department, Loughborough (University) Alumni, Loughborough University Students' Velocity Society and the Institute of Mechanical Engineering.

The Secretary's Report was approved nem con.

Proposer – Tony Irwin, Secunder – Graham Kitto

5 Treasurer's Report

See Appendix 2 (Treasurer's Report to the 2015/16 Season AGM held on Tuesday 19th April 2016).

The Treasurer stated that:

- a. The **Statement of Accounts reflects the situation as of 8th April 2016** and not the date of the AGM, i.e. 19th April 2016.
- b. The Grant from RAeS HQ requested and subsequently received is slightly below that awarded in the preceding year because of the surplus of income over expenditure during the 2014/15 season.
- c. The Subscriptions from Branch Friends were slightly reduced because some new Friends paid their subscriptions near the end of the 2014/5 season and had been allowed to carry the subscriptions over to the 2015/6 season without paying again.
- d. The Donations exclude the £180.57 received after 8th April. Including this figure increases the Donations to £475.91 which is slightly higher than the 2014/5 season's figure of £450.03.

- e. In Expenditure, the apparent significant reduction in costs for the Use of Audio-Visual Aids is due to the erratic billing timings of Loughborough University's AV Department. As a consequence the corresponding expenditure for the 2016/17 season is likely to be higher.
- f. The 2015/16 Branches Conference and Forum costs of £244.75 compare with Nil for the preceding year. This is due to the times when claims for expenses were submitted to the Treasurer.
- g. The £504.00 payment to the Shuttleworth Trust for members/friends tickets to visit the Trust on 8th May 2016 is not matched by a corresponding figure in Income because the visit participants' payments were not received by the Treasurer by 8th April 2016.
- h. If the sums defined in (d) and (g) above are included in the accounts, **the £592.91 Deficit on the 2015/16 year becomes a £91.66 Surplus**. This results in a **Balance Carried Forward to the 2016/17 season of £6705.20** which is marginally above the sum carried forward in the preceding year. This represents a healthy financial situation on which to base the 2016/17 season's programme.

The Treasurer's Report was approved nem con.

Proposer – Stan Stevens, Secunder – Pat Geary

6 Election of Officers

6.1 The following committee members indicated that they were willing to stand for re-election for the 2015/16 Season:

Branch Chairman	:	John Ollerhead*
Branch Secretary	:	Colin Moss*
Branch Treasurer	:	Mac Maccabee
Meetings Secretary	:	Vipran Kannan*
Committee Members	:	Ivor Amos, Mike Hirst, Barry Jacobson, Daniel Nutt, Goff Tearle*

6.2 In addition the following persons stood for election as committee members for the 2015/16 Season:

Committee Members	:	Gerry Elloy*, Stephen Hogarth*, Tony Irwin, John Robertson*, Paul Snelling*
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*RAeS members.

N.B. It is likely that the Chairman of the Loughborough (University) Velocity Society will be co-opted as a Committee Member.

All those standing for election were elected nem con.

7 Any Other Business

There was none.

Colin Moss MRAeS, Branch Secretary

APPENDIX 1 - Report on the 2015/16 Season - AGM held on Tuesday 19th April 2016

1. Review of the 2015/16 Lecture/Visits Programme

1.1 Lectures

In all a total of eleven lectures were planned for the 2015/16 programme (see Table 1 below). **Refer to RAeS Loughborough Branch website for full reports on the lectures.**

TABLE 1

Date	Lecture/Lecturer	Attendance	Synopsis of the Lecture
13 th Oct 2015	The CV-22 Osprey by Lt Col James S Peterson, 7 SOS Operations Manager, RAF Mildenhall USAF Base.	160	The lecture started with a short history of tiltrotor technology beginning in 1930. The majority of the lecture focussed on the CV-22's capabilities and the unique systems that allow the aircraft to perform its operational mission. It closed with a short discussion of operational employment.
3 rd Nov 2015	Human Powered Flight by Dr Bill Brookes, P & M Aviation.	120	Bill reviewed the history of human powered flight from earliest times. By 1988 human-powered aircraft had been built which, with a top class athlete/pilot, would fly at 30mph and cover 78 miles or attain 3 hours endurance. Human powered flight competitions are now taking place all over the world, often including university projects. He predicted an international FAI world human powered flight contest in the next 4 years, and expressed the belief that a human powered flight Olympic event would take place within his lifetime.
17 th Nov 2015	Typhoon: current and future capability by Mark Bowman, Chief Test Pilot BAE Systems <i>Joint lecture with the Loughborough (University Students) Velocity Society.</i>	200	The Eurofighter Typhoon originally entered service with the RAF and other European airforces in the mid 2000s as an Air Defence Fighter, with its weapons and systems fits being primarily focused on air-air engagements. Since then, there has been an on-going programme of equipment improvement and upgrades, while its required roles have evolved, including a greater emphasis on strike and ground attack. The lecture gave an overview of this rolling programme of development and how the capability of the aircraft has matured to date, as seen from the test pilot's perspective. It went on to discuss some of the potential changes and enhancements in capability which will be driven by both future operational needs and advances in available technologies over the next 25 years.
8 th Dec 2015	The Future of Safety in Air Traffic	75	Air accidents attributable to air traffic control failures are at an all time low. It

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	<p>Management by Sam Espig, NATS.</p> <p><i>Joint lecture with the Loughborough (University Students) Velocity Society</i></p>		has been necessary to substantially rethink the methods of assessment used to predict future causes of accidents related to air traffic control. The lecture described some of these methods. These will enable NATS to continue to provide exceptional levels of safety in the face of future challenges to their operations.
19 th Jan 2016	<p>Research & Development carried out at the Royal Aircraft Factory during WW1 by Dr. Graham Rood, FAST.</p>	140	Prior to WW1 the Royal Aircraft Factory at Farnborough was building a solid base of science & technology to support and to share with the embryonic aviation industry. Over the war years the Factory grew to employ over 5000 people and became the armed services most prolific supplier of military aircraft. These aircraft included the BE2, FE2 and SE5. In 1918 the Royal Aircraft Factory became the Royal Aircraft Establishment (RAE).
2 nd Feb 2016	<p>The Origins and History of the Royal Aeronautical Society by Air Cdre Bill Tyack (Ret'd), past President RAeS.</p> <p><i>RAeS 150th Anniversary celebrations lecture</i></p>	90	Bill started his lecture with the story of Sir George Cayley and his glider flown in 1823. It was not until 1866 that the RAeS was founded under the presidency of the Duke of Argyle. Today it is a learned society dedicated to advancing and spreading aeronautical knowledge. It has a worldwide total of 67 Branches and what is probably the best library of aeronautically related books, technical reports and journals in the world.
16 th Feb 2016	<p>Flying Shuttleworth Aircraft: by Roger (Dodge) Bailey, Chief Pilot, Shuttleworth Collection.</p> <p><i>Joint lecture with Loughborough (University) Alumni.</i></p>	160	Dodge described the approach necessary to flying vintage aircraft – a mixture of technical and practical knowledge acquired from years of experience with the aircraft and their idiosyncrasies. These included the effects of having a complete lack of lateral stability because there was no wing dihedral. One consequence of this was a considerable difficulty in making a turn.
8 th Mar 2016	<p>The Development and Potential of the Skylon Spaceplane and its Sabre Engines by Mark Tomas MD, Reaction Engines Ltd..</p>	190	Mark reviewed the history of Reaction Engines and its the SABRE rocket engine with its air breathing and oxidant mode capabilities. He placed considerable emphasis on the “pre-cooler” or heat exchanger between the air

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	<i>Elfyn Richards Prestige Lecture Joint lecture with IMechE.</i>		intake and the compressor. This decelerates the incoming air and reduces its temperature from +1000°C to -150°C in one hundredth of a second. Reaction Engines aim is to develop a 320 tonne unmanned orbital delivery vehicle which can be re-used on many occasions.
15 th Mar 2016	Lockheed SR-71 "Blackbird" Recce Mission from RAF Mildenhall to Murmansk by Col Richard Graham USAF Retd	200	Col. Graham told the story of a flight to Murmansk and back to Mildenhall at an altitude of 80,000 ft. in an SR-72 reconnaissance aircraft and all in complete radio silence. We learnt of the high level of support needed to maintain the SR-71 fleet and the specialist fleet of KC-135 tankers need to support the flights.
19 th Apr 2016	Superfighters at Warton by Tony Wilson, ex. BAE Systems	75	BAE Systems at Preston and Warton has been involved in the design, development and production of fighter aircraft since 1945. As well as the design of the major products, Lightning, Tornado and Typhoon, there has been a wealth of studies of other possible designs. Many of the advanced project studies at Warton addressed very challenging customer requirements. The lecture presented an overview of the studies of fighter and interceptor projects focussing mainly on the period 1947-1972. It drew on records in the Warton Heritage Archive and the National Archives at Kew and set these projects in their historical context. Key examples were used to draw lessons for today.
7 th June 2016	Loughborough University MEng Final Year Aircraft Design Projects – A series of short lectures	??	Event still to be held at time of writing this report.

1.2 Visits

One visit was arranged for the 2015/16 season.

Date	Visits
8 th May 2016	Shuttleworth Collection Flying Day

APPENDIX 1 - Report on the 2015/16 Season - AGM held on Tuesday 19th April 2016

2. Review of the 2016/17 Lecture/Visits Programme

2.1 Review of 2016/17 Lectures

The following lectures shown in Table 2 below have been planned for the 2016/17 Season:

Table 2		
Date	Lecture	Lecturer
11 th Oct 2016	Large Model Aircraft	– Tony Hooper MBE, Chief Examiner of the UK Large Model Association
1 st Nov 2016	<i>Queen Elizabeth-Class aircraft carriers -flagships for the future.</i>	Andrew Matters, QE Class Support Integration Manager, BAE Systems
22 nd Nov 2016	How to investigate an air accident. <i>Possible joint lecture with Loughborough University Velocity Society</i>	Prof. Graham Braithwaite, Professor of Safety & Accident Investigation, Cranfield University
6 th Dec 2016	The planning and execution of Britain’s first intercontinental air service: Imperial Airways between UK and South Africa 1932-1939.	Mike Hirst (RAeS Loughborough Branch Committee Member).
17 th Jan 2017	Transatlantic adventure. <i>Possible joint lecture with the Loughborough (University) Alumni</i>	Eddie McCallum, Microlight Pilot.
7 th Feb 2017	The Challenges of Maintaining Highland and Island Airport Services (HIAL) <i>Possible joint lecture with Loughborough University Velocity Society</i>	Andrew Rackham , Civil Aviation Consultant
21 th Feb 2017	3D printing and digital technology.	Kevin Smith, Global Applications Director, Voxeljet and Steve Ashworth, Technical Director, Aeromet International PLC
14 th March 2017	Trent XWB Airbus A350 (84K). <i>Elfyn Richards Prestige Lecture</i> <i>Possible Joint lecture with IMechE</i>	Mark Wainwright, Chief Engineer, Trent XWB-84, Rolls-Royce
4 th April 2017	Austers I have known and flown - the history of Auster Aircraft.	Terry Dann, former IT Consultant and now an Auster and Tiger Moth enthusiast.
6 th June 2017	Loughborough University MEng Final Year Aircraft Design Projects – series short lectures. This series of mini-lectures will be given by groups of final year MEng students and will describe the results obtained from their projects. <i>Joint Event with University Dept of Aero & Auto Engineering</i>	-----

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2.2 Review of 2016/17 Visits Programme

Dates	Visits
TBD	<p>No visits are currently planned but suggestions have included:</p> <ol style="list-style-type: none">1) Model flying display, Cosford. Participants to use their own cars for transport.2) Barnes Wallis Exhibition/Museum, Elvington. Participants to use their own cars for transport.3) Toyota production line, Burnaston. Participants to use their own cars for transport.4) JCB production lines, Foston and Uttoxeter. Participants to use their own cars for transport.

APPENDIX 2 - Report on the 2015/16 Season - AGM held on Tuesday 19th April 2016

STATEMENT OF ACCOUNTS – SEASON 2015/16 - 23/04/2015 TO 08/04/2016

	£ 2015/16	£ 2014/15
A. INCOME AND EXPENDITURE ACCOUNT		
INCOME		
1. Grant from RAeS Headquarters	1900.00	2000.00
2. Subscriptions from Branch Friends @ £10 each	760.00	860.00
3. Donations (collections) at lectures (see Note 1)	295.34	450.03
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TOTALS	2955.34	3310.03
EXPENDITURE		
1. Lecture expenses (travel, accommodation and hospitality)	1370.04	1226.26
2. Room Bookings	756.00	672.00
3. Use of audio-visual aids	240.00	720.00
4. Secretarial and publicity, including programmes	398.19	391.99
5. Branches conference and forum	244.75	nil
6. Website expenditure	35.27	52.08
7. Shuttleworth Trust visit payment (see Note 2)	504.00	nil
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TOTALS	3548.25	3062.33
	(592.91)	247.70
SURPLUS (DEFICIT) ON YEAR		

Notes:

1. £180.57 still to appear on bank statement.
2. £504.00 from Shuttleworth Trust visit participants are still to appear as income to balance this payment.

B. STATEMENT OF BANK BALANCES AT 08/04/2016

Brought forward balances from last season:

	£
Current account at 22/04/2015	6611.20
Capital account at 22/04/2015	2.34
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TOTAL	6613.54
Excess of Expenditure on Year	(592.91)
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TOTAL	= 6020.63
Represented by current balances:	
Current account at 08/04/16	6018.29
Capital account at 08/04/16	2.34
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TOTAL	6020.63

Francis Maccabee, Hon. Treasurer, 8th April, 2016