

“AFFORDABLE LIGHT-WEIGHTING?” and Future Road Mapping

2nd May 2007
Motorcycle Museum, Solihull

Organisers:

Prof Richard Hall and Julian Spence,
University of Wolverhampton

Jim Coyle, Advantage West Midlands (AWM)

Dr Bob Newman, Midlands Aerospace Alliance (MAA)



midlands aerospace alliance



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WV1 1SB

Why should you attend?

This is your opportunity to spend a day understanding and discussing the problems associated with the **design of light-weight structures for aerospace applications**.

Light-weighting is the production of light-weight components for improved performance. Significant examples are to be found in nature, such as the 3D structures found in bones.

Expert speakers will introduce various important aspects of designing for weight reduction. The morning session will focus on the need for improved light-weighting, including increased performance, reduced cost, and reduced environmental impact and sustainability. Some of the main aspects of light-weighting will then be presented through case studies.

The afternoon session will concentrate on integration, application and cross-sector activities. The day will culminate in a discussion to initiate the formation of a Research and Development Road Map, where the future needs and challenges will be identified. This information will be used to inform industry, academia, and the government of what is required to stimulate and direct innovation and future activity in order to realise the goals identified.

This conference will then be a vehicle for the communication and realisation of the problems and needs of manufacturing industries, and design and cost considerations necessary for improvement.

Programme

- 9.30** Arrival/Registration (Coffee)
9.50 **Welcome Address:** *Prof Richard Hall, Director of Aerospace R&D and MidSim, University of Wolverhampton*

Session 1: Needs and Design Challenges for Light-weighting in Aerospace; Chair: Andrew Mair, MAA

- 10.00** **Light-weight Materials and Structures for Aero-Engines.** *Neil Glover, Prog. Manager University Research-Materials, Rolls-Royce Plc*
10.25 **Challenges for Light-weight Design of Aircraft Structure.** *Jim Banks, Head of Design and Daniel Wood, Engineering Manager, BAE Systems*
10.50 **Exciting (Light-weighting) Opportunities in UAVs.** *Bob Reeve, Manufacturing Advisory Service, MAS*
11.15-11.45 Coffee Break

Session 2: Case Studies; Chair: Prof Richard Hall

- 11.45** **Low-cost, Low-energy Processing of Composite Materials.** *Dr Victoria Coenen, Manchester Composites Centre*
12.05 **Air Vehicle Optimisation.** *Dr John Harris, Senior Engineer, QinetiQ*
12.25 **Near Netshape Manufacture.** *Prof Xinhua Wu, Professor in Aerospace Materials, IRC in Materials Processing, University of Birmingham*
12.45 **Lunch**
13.30 **Guest Speaker:** *Per Lindstrand (Balloonist and Aerospace Engineer)*

Session 3: World Class Competitiveness Chair: Jim Coyle, Advantage West Midlands

- 14.00** **Keynote: World Class Competitiveness.** *Robert Quarshie, Chief Analyst Advisor – Materials, DTI*
14.30 **The Impact of Systems Integration.** *Rodney Collins, Chief Weights Engineer, BAE Systems*
14.50 **Application of Light-weighting Technologies.** *Ben Scott-Gaddes, Design Director, Caparo Vehicle Technologies*
15.10 **Experiences of Automotive Light-weighting.** *Damian Harty, Technology Consultant – Dynamics, Pro-Drive Automotive*
15.30-15.40 Coffee Break

Session 4: Creation of R&D “Road Map” for Light-weight Design for Aero Sector; Chair: Dr Bob Newman, MAA

- 15.40** **Discussion: facilitated by** *Dr Bob Newman and Julian Spence*
16.30 **Close**

(During the day there will be opportunities to see posters, exhibition stands and also motorcycles in the museum)



Special Guest Speaker

Per Lindstrand

(Balloonist and Aeronautical Engineer)

Managing Director of Lindstrand Technologies Ltd since 1978.

He designed and built, amongst others, a 200,000ft³ helium 30-passenger-carrying tethered aerostat and a 1,100,000 ft³ Roziere balloon for the Virgin Global Challenger to circumnavigate the World.

Per's contribution to the advancement of light-weight designs and balloons has been honoured with various awards both nationally and internationally.

Delegates:

Fee: **£81.70 +VAT (£96.00) per delegate.**

Please register early to avoid disappointment, as places will be limited in number.

AFFORDABLE LIGHT-WEIGHTING? CONFERENCE

DELEGATE REGISTRATION FORM

Title: _____

Name: _____

Organisation: _____

Position: _____

Address: _____

Postcode: _____

Telephone: _____

Fax: _____

Email address: _____

Please return this form to:

**Mrs Noura Sadiq (Conference Secretary),
School of Engineering and the Built Environment
(SEBE), University of Wolverhampton,
Wulfruna Street, Wolverhampton WV1 1SB or
alternatively fax to: 01902 322743.**

For more information and abstract of presentations please visit our website: www.lightweighting.net

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