



Designing For Optimum Composite Performance

Unlocking the Flexibility of Composite Materials

FREE, One Day Seminar - 25th November 2008
Heritage Motor Centre, Gaydon, Warwickshire

Featuring Presentations From:
**Airbus, Eurocopter Group, Lola Group
Force India F1, Gurit, and Anaglyph**

Supported by
The British Composites Society
A Division of the Institute of Materials, Minerals and Mining

www.altairhyperworks.co.uk/composites

 Altair®
HyperWorks®

A Technical Breakthrough in the Composite Design Process

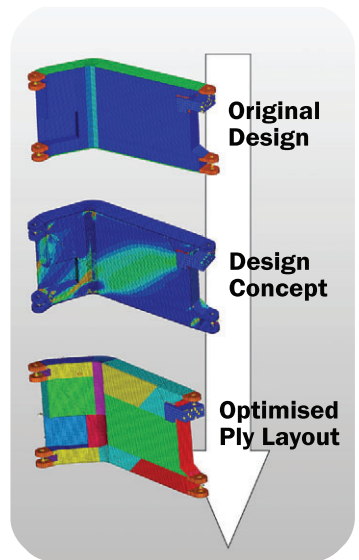
Composites represent an opportunity to replace metal structures with new, lightweight materials achieving product enhancement with improved performance. They are increasingly being viewed as the gateway to product innovation - composite planes, trains, automobiles and civil structures. Composites present the designer with new horizons due to the inherent versatility of the material but require an increased comprehension of manufacturability.

For over six years, Altair in collaboration with our industry partners, have been developing a revolutionary design process specifically aimed at tackling composite design challenges. Altair's enterprise computer aided engineering (CAE) suite, HyperWorks, is now established as the leading virtual toolbox for composite design applications incorporating pre and post-processing capabilities, solvers and advanced optimisation technologies specifically developed to address the challenges of composite materials.

During this seminar, thought provoking presentations from some of Europe's leading composite designers will give you practical examples of how you can improve your design processes. The morning session demonstrates how virtual models can be efficiently generated and the resulting performance assessed. The afternoon session showcases composite optimisation techniques including material and weight reduction along with automatically determining the optimum location of laminate boundaries.

"We used OptiStruct on different parts of the aircraft passenger door system. The software helped us to achieve substantial weight savings."

Peter Haensch, Optimisation Specialist
Eurocopter GmbH, Germany



Who Should Attend?

This seminar is beneficial to all practitioners involved in the virtual design of composites, also managers tasked with producing designs which exhibit "world beating" performance characteristics.

Why Should You Attend?

- **Learn** the latest developments in composite technology and see how they are being applied to solve design challenges in industry leading companies.
- **Apply** these techniques to improve your own design performance and deliver profitable products.
- **Network** with prominent individuals in the UK engineering and composite design community.

Secure Your Free Place

To secure your free place at this informative event, please visit:

www.altairhyperworks.co.uk/composites, email: events@uk.altair.com or call: +44(0)1926 468 600.

Seminar Agenda

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10:00 **Welcome & Introduction to Altair and Our Composite Technology**

Maurice Linscott, Altair Engineering Ltd

'Introducing a Revolutionary Composite Optimisation Process'

Sam Patten, Altair Engineering Ltd

- Specific features in HyperMesh for composite modelling
- Live demo - The future of composite ply design

'Overview of Laminate Tools in the HyperWorks Process'

George Kretsis, Anaglyph

- Unique post-processing capabilities for laminates
- Direct integration with the HyperWorks CAE suite

'Composite Optimisation of a "Le Mans Prototype" Racecar Rear Mainplane'

Paul Rennie, Lola Group

- Optimising composite design to meet performance targets
- Generating robust designs in a reduced timescale

'Streamlining Composite Model Build Using Process Automation'

Matt Gagnon, Gurit

- Using process automation in the development of composite models
- Streamlining the model build process to reduce time-to-market

'A Novel Concept Design Tool to Identify the Optimum Location of Laminate Boundaries'

Julien Chaussee, Airbus

- Automating determination of laminate location
- Automatically achieving performance targets

'Optimisation of a Composite Aerodynamic F1 Rear Wing'

Simon Gardner, Force India

- Meeting structural and manufacturability targets
- Defining optimum ply shape and positioning

'Concept Design of a Composite Aircraft Door through Integrated FEA, Multi-body Simulation and Structural Optimisation'

Silvio Cabrele, Eurocopter Group

- Remarkable improvements in weight reduction and development time
- Standard design procedure for future projects

'Improved Composite Damage and Failure Simulation with RADIOSS'

Jean Michel Terrier, Altair Engineering Inc

- Proven composite crash simulation technology
- Advanced composite damage models for crash

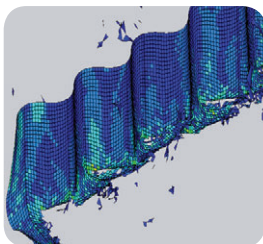
'Developing the Tools & Processes to Support Composite Expansion'

Maurice Linscott, Altair Engineering Ltd

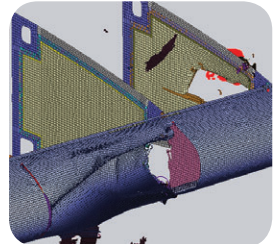
- Conditions driving composite adoption & the resulting industry trends
- Simulation driven design with Altair

12:00 **Lunch**

15:30 **Summary & Close**



Crush simulation of composite helicopter component



Aircraft wing leading edge impact simulation



Altair Engineering is one of the world's leading developers of design engineering technology. We don't just implement solutions; we create them by helping you to improve quality, reduce costs and accelerate the delivery of products and services to your customers. We have transferred our proven design processes across diverse industries like aerospace, automotive and defence.

Working with organisations such as Airbus, GKN, Smiths Aerospace, McLaren Cars and Honda Racing means that our solutions are based on a thorough knowledge of the challenges facing British industry today.

Our CAE software leads the way in manufacturing modelling, visualisation, optimisation and process automation. An award winning engineering innovator, we are committed to performance driven design. Over 3,800 clients across Europe, North America and Asia rely on our approach.

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