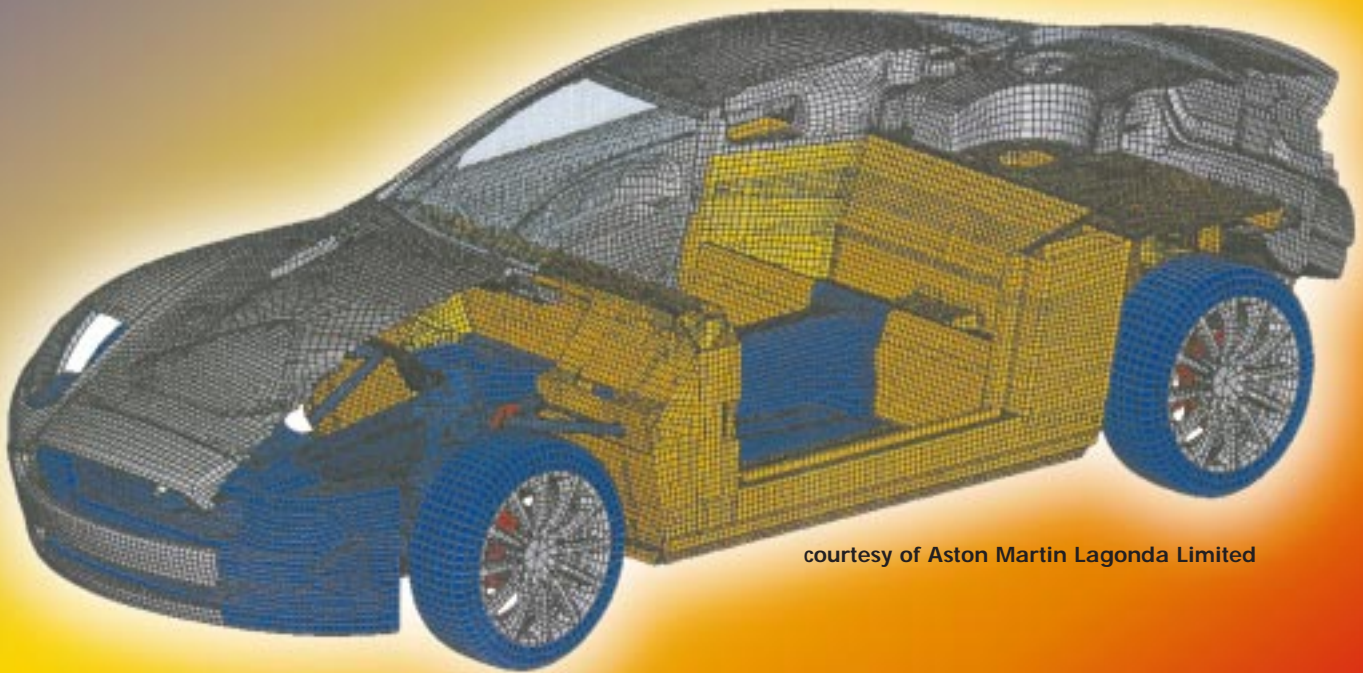


NAFEMS

The International Association for the
Engineering Analysis Community

AWARENESS SEMINAR

"Advances in Composites
Analysis & Design"



courtesy of Aston Martin Lagonda Limited

Wednesday 20th June 2001

The Institution of Mechanical Engineers
1 Birdcage Walk
London, UK

www.nafems.org

NAFEMS Awareness Seminar

“Advances in Composites Analysis & Design”

Wednesday 20th June 2001. The Institution of Mechanical Engineers.

Background

NAFEMS is a not for profit organisation founded in 1983 with a prime objective, “To Promote The Safe and Reliable Use of Finite Element and Related Technology.” With Members in over 37 countries, NAFEMS is continually seeking to create awareness of new analysis methodologies, deliver education and training, stimulate the adoption of best practices and standards by offering a platform for continuous professional development.

“Advances in Composites Analysis & Design”

Subject Area

Composite materials can offer significant gains in specific materials properties over their metallic counterparts and their anisotropic nature and laminate construction allow designers to tailor structural properties to loading requirements. However, FE modelling of composites structures requires specialist skills to correctly define directional properties, modes of failure and failure propagation and these aspects must be correctly analysed at the design stage if the advantages of composites are to be fully exploited.

The purpose of the seminar is to present an up to date synopsis of FE modelling techniques for the analysis of elastic and inelastic behaviour of composite structures, subjected to static and dynamic loadings. The seminar will include presentations on the following:-

- Elastic anisotropic laminate analysis
- Failure modelling :- in plane and delamination
- Post first-ply-failure analysis :- damage mechanics
- Impact and energy absorption

Vendor case studies will also be presented to illustrate recent industrial examples.

A number of new Composites Benchmark tests are to be incorporated into the NAFEMS Benchmark series, and these will be introduced at the seminar.

Who Should Attend

The seminar is aimed at engineers involved in design, analysis of composite structures and assessment. It will also serve to provide technical managers with an overview of the latest technique being used by industry.

NAFEMS Awareness Seminar

"Advances in Composites Analysis & Design"

Wednesday 20th June 2001. The Institution of Mechanical Engineers.

AGENDA

09:30 **Coffee & Registration**

10:00 **Chairman's Welcome**

John McVee, DERA, Dunfermline

10:15 **Elastic Anisotropic Laminate Analysis**

I A Jones, University of Nottingham

10:45 **In Plane Failure Criteria**

P D W Soden, UMIST

11:15 **Delamination Modelling**

R Martin, MERL

11:45 **Failure Propagation Modelling**

L Iannucci, Imperial College

12:15 **LUNCH**

13:00 **Impact**

N Petrinic, Oxford University

13:30 **Integrated Design, Analysis and Manufacturing of Composite Structures**

J W Klintworth, MSC.Software Ltd.

14:00 **Composite Benchmark Tests**

G Davies, Imperial College

14:30 **COFFEE**

Case Studies:-

15:00 **Century Dynamics (AUTO-DYN)**

C Hayhurst

15:30 **ESI GmbH (PAM-CRASH)**

A K Pickett

16:00 **Lotus Cars (DYNA)**

D J Marler

16:30 **General Discussion**

17:00 **Close of Seminar**

John McVee, DERA, Dunfermline (Chairman)

SEMINAR REGISTRATION FORM

I wish to attend the seminar:-

“Advances in Composites Analysis & Design”

in: The Institution of Mechanical Engineers, London, UK

on: Wednesday 20th June 2001.

Members of NAFEMS **FREE***

Non-Member **£150**

(VAT at 17.5% should be added for all Delegates)

Alternatively you may register online at www.nafems.org

** Subject to availability of free member place credits.*

Members who have used their credits may also attend and obtain a 20% discount on the normal fee, ie £120 + VAT.

PERSONAL DETAILS

Title _____ **Initials** _____ **Family Name** _____

Organisation _____

Address _____

Tel. No. _____ **Fax. No.** _____

Email. _____

PAYMENT DETAILS (if applicable)

Credit Card **Amex** **Mastercard** **Visa**

Authorised Name _____

Card Number

Expiry Date. _____/_____/_____ **Company P O.** _____

Signature _____

Please complete and return to:-

Anne Creechan

NAFEMS Ltd, Whitworth Building, Scottish Enterprise Technology Park

East Kilbride, Glasgow, G75 0QD

Tel: +44 (0) 1355 225688 **Fax:** +44 (0) 1355 249142 **email:** anne@nafems.com