



Faculty of Engineering



GLOBAL ENGINEERING DESIGN TEAM

Professor Richard Taylor - University of Leeds RAE VP

Mr Richard Baker - Rolls-Royce plc

Professor Alan de Pennington - University of Leeds

Dr Jim Baxter - University of Leeds



Presentation Overview



- ◆ Partners
- ◆ Need
- ◆ Project Structure
 - » Schedule
 - » Deliverables
 - » Definition
- ◆ Summary



USA Partners



Arizona State University

- ◆ Professor Mark Henderson
- ◆ Professor Valana Wells
- ◆ CRESMET (Center for Research on Education in Science, Mathematics, Engineering and Technology)

The Boeing Company

- ◆ Steve L Coe, Seattle
- ◆ Nathan Adams, Technical Fellow - Aerothermal Engineering, Mesa
- ◆ Joe Tidwell, Division Technical Education Coordinator, Mesa



UK Partners



University of Leeds

- ◆ Professor Richard S. Taylor, OBE
- ◆ Professor Alan de Pennington, OBE
- ◆ Dr Jim Baxter
- ◆ Dr Alison McKay
- ◆ Dr John Coney

Rolls-Royce plc

- ◆ Richard Baker, Derby
- ◆ Erica Tyson, Derby

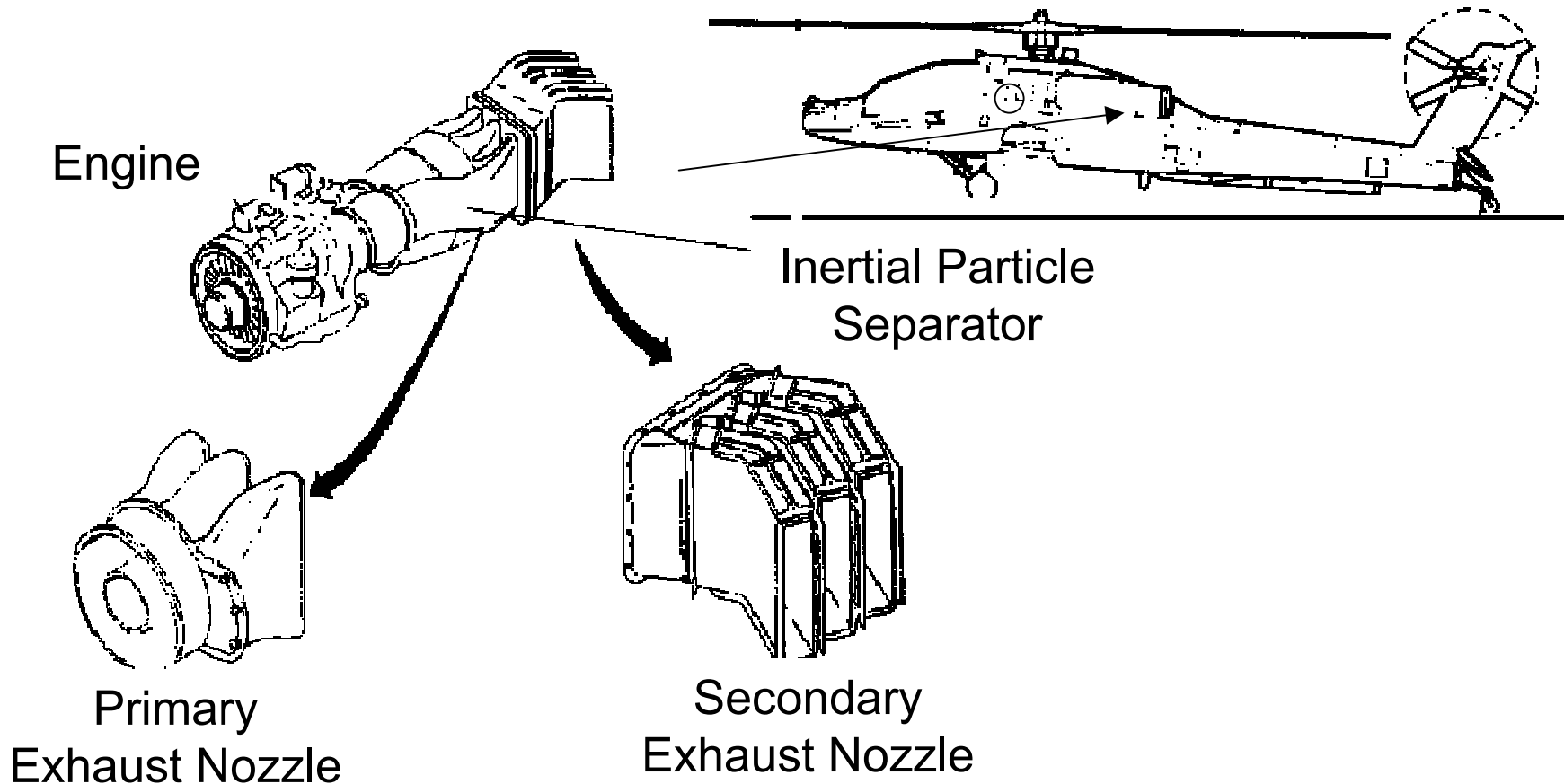
Participation in and leadership of global product teams will require individuals who:

- » possess a global attitude
- » are technically excellent
- » are aware of business practices and success factors in the global workplace
- » are aware of cultural mistakes and behaviours in a manner that demonstrates knowledge and respect for other countries
- » understand their own culture, values and assumptions in the context of a global environment
- » are of strong character and the highest integrity

[Steve Coe 1998]

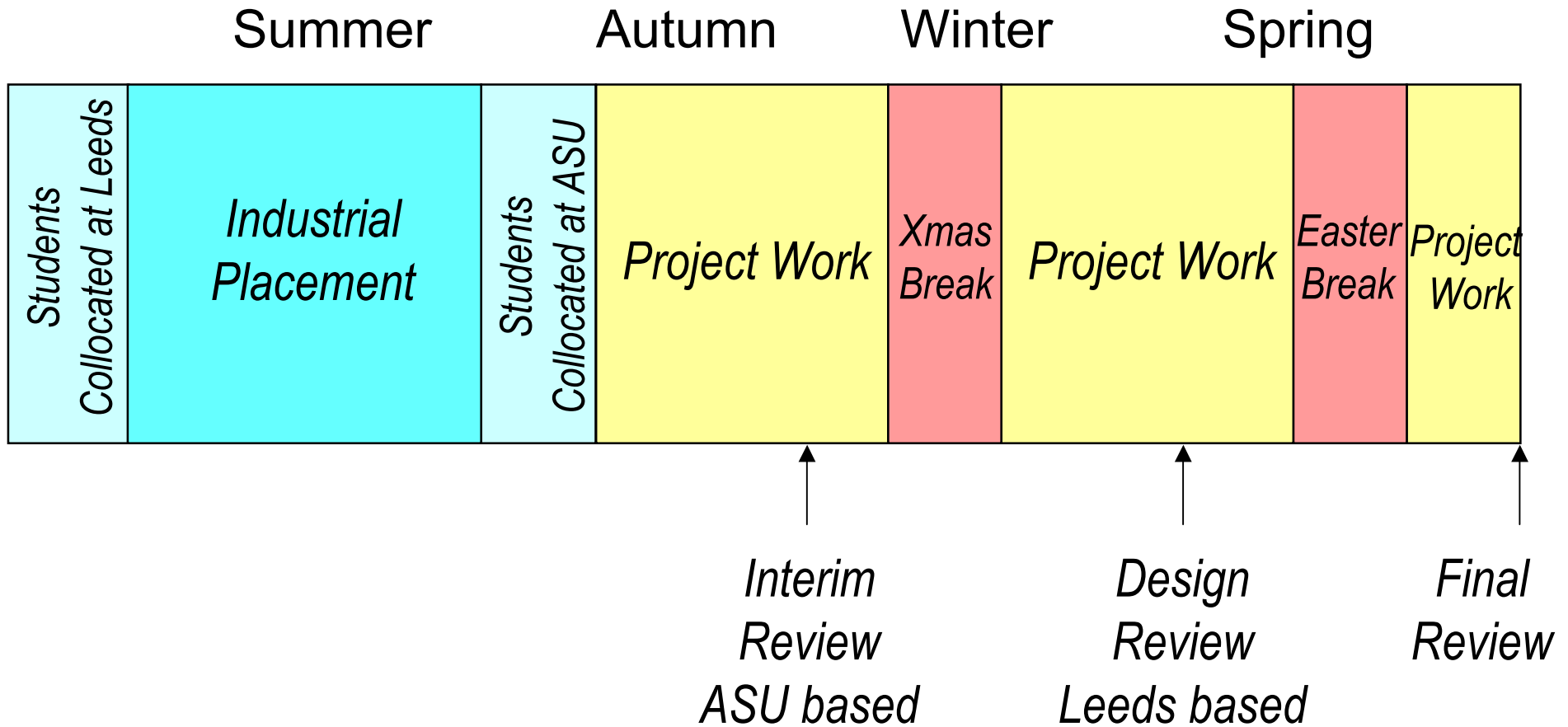
- ◆ Quality assurance through accreditation
- ◆ SARTOR
 - » (Standards and Routes to Registration for engineers)
 - » [Engineering Council 1997]
 - » requirements for registration as a Professional Engineer
- ◆ ABET
 - » (Accreditation Board for Engineering and Technology)
 - » ABET accredits engineering degrees in the USA

“Optimisation of a generic helicopter engine exhaust system”





Project Schedule



- ◆ Request for Proposal
- ◆ Contract Performance Plan
 - » Project Objectives
 - » Project Plan
 - » Organisational Structure
 - » Risk Mitigation Strategy
 - » Communication
- ◆ Interim Review
- ◆ Conceptual Design
- ◆ Design Review/Down Select
- ◆ Embodiment/Detail Design
- ◆ Final Report
- ◆ Final Review



Summary - Highlights



- ◆ Selection Process of Students
- ◆ Customer Expectations
- ◆ Cultural Attitudes - USA -v- UK
- ◆ Cultural Shock - University -v- Industry



Summary - Learning Outcomes



- ◆ Deal with Open Ended Problems
- ◆ Communication - Relearnt every year
- ◆ Concept Understanding or Lack of it
- ◆ Planning - Timescales
- ◆ Managing and Management
- ◆ Teaming and Teamwork - Trust
- ◆ Presentation and Report Writing Skills



Summary - Observations



- ◆ Initial reliance or what they know as opposed to what they need to know
- ◆ How to use tools
- ◆ Effort Effectiveness
- ◆ How to motivate and engage people
- ◆ Importance of Detail in Design
- ◆ Lack of Industrial Experience