

Session 2 Opportunities for benefit from NDT

2a Opportunities for benefit from NDT Dr Barbara Gordon, UoB

2b Design for manufacture – NDT opportunities Prof Kevin Potter, UoB

2c Breakout sessions

2d Breakout de-brief

2e Panel session - What does success look like?

2c. Breakout Groups - Session 2

A: Design and Qualification	– Chair: Dr Barbara Gordon	(Front)
B: Qualification and Certification	– Chair: Prof Phil Irving	(Watt)
C: In-service and Certification	– Chair: Prof Peter Foote	(Back)
D: Production and Design	– Chair: Prof Kevin Potter	(Breakout)
E: Production / In-service (Repair)	– Chair: Dr Tim Barden	(Brunel)

2d. Breakout session 2 de-brief

- Mech properties – layup, cure, ALM?
 - Adhesives, kissing disbonds, weak bonds.
 - Strength or just properties without failing structure
- Non-local defects (poor cure, pre-preg life, env. Degradation)
- Inspection during manufacturing, process control,
 - Repair - layup, temp,
- Geometry – difficult to NDT in some cases.
- NDT vs Scale of defect.
 - Significance of defect depends on size, whether structural component etc.
- Processes – improve information –
 - put into 'effects of defect' calculations – better models
- ABJ – NDT to assess strength.
- Production – improve sensitivity but cannot inspect quality into product
- Process control
- Improve NDT outcomes – training
 - Visual inspection tap testing, subjective – how to test judgement
 - Emphasis still on metal inspection
 - Training burden – managing through life cycle
 - Emerging techniques, think of whole process, certifi., training etc
- Emerging technology gaps eg ALM.
 - What are certifiable steps in processes? Process is ahead of NDT.
 - Kissing bonds. Controlling process.

- Communities – is this a complete X-section?
 - Where have failings occurred? They should all be involved.
 - Design, prodn. Inspection and continued airworthiness
 - SHM links to bonded structures?

- Design and production – single entity.
 - Desire - Zero defects
 - Link NDT, design, residual strength to features at manufacture.
 - Feature is only a defect if has greater effect than design criterion.
 - More collaboration between design and production functions.

- In-line inspection. Enables you to put higher up chain, before value added.

- Repair and production.
 - NDT good link between design and production
 - Automation – reduce human element.
 - Characterise material props. Waviness etc. Cost-effective NDT.
 - SHM – key for repair and in-service
 - Simpler, faster NDT technique approval
 - Bond integrity