

Workshop Session 4: *Regulatory Guidance, CACRC Standards and Related Training*

- Guidance advancements, standard developments and training initiatives rely on *proactive, joint efforts by government and industry specialists*
 - Realistic focus needed to meet most critical needs
- Five presentations for Tokyo, Japan
 1. AC 20-107B has added definitive guidance related to subjects covered in this workshop
 2. United has been a leader supporting the SAE CACRC and FAA Safety Initiatives, with years of experience essential to standardization
 3. Boeing and Airbus are key teammates for expanding practical standards that enable more efficient composite maintenance practices
 4. Safety concerns exist for those organizations that believe they can reverse engineer bonded composite aircraft structure
 5. Practical training is needed to educate the existing workforce for expanding composite applications



Workshop Breakout Sessions

- Four parallel sessions to be performed during Friday afternoon and recapped with the full group before workshop closure
- Some presentation by leaders will initiate the discussion but the time should be well spent depending on participant interests
 - Allowing workshop participants that didn't get a chance to present the time to express their views
 - Leaders instructed to allow more time for areas of discussion that were truncated during the others sessions (e.g., GAG of Min.-Gage Sandwich)
- Please let your voice be heard
 - We are all limited in composite skills by our past experiences
 - What may be trivial to an individual is educational to those not familiar with a particular detail of the technology
 - Safety management starts with open communication

1. Safety

2. Efficient Practices

3. Education and R&D Needs

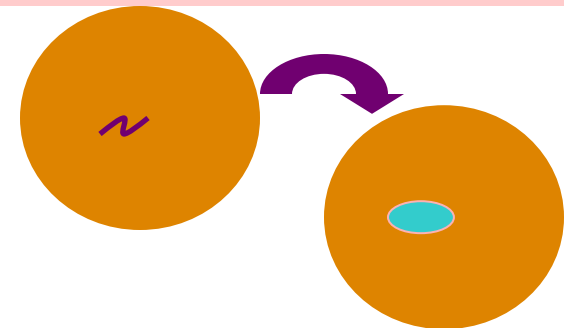


Example Topic Receiving Significant Safety Discussion on 6/4/09

Continued discussions on minimum-gage sandwich disbond growth under GAG cycles [Growth rates = f (disbond size)]

- *Application & Service Experiences Breakout* should note any other incidents related to the same phenomena
- *Damage Threats & Inspection Strategies Breakout* should generalize proposal to include directed inspections for problems arising in service (e.g., rare cases of growth)
- *Damage Tolerance & Repair Substantiation Breakout* should identify a) the contributing design detail and b) possible parameters to characterize (e.g., growth in impact-crushed core)
- *Guidance, Standards and Related Training Breakout* should evaluate the needs to ensure such designs are properly maintained

Blunt Impact of Sandwich Part With Sharp Penetration Near Center



Followed by Poorly Bonded Repair Patch to Penetration Zone Only

Summary and Recommendations

- Additional industry support is needed to implement *Composite Safety & Certification Initiatives*
 - Mitigate the safety risks of rapidly expanding applications without sufficient workforce guidance and training
 - Composite standards orgs. need *the right volunteer experts*
 - Practical training per a cost-efficient and complete *set of composite courses with working knowledge*
- Near-term focus on emerging operational safety threats
 - Guidance, policy and training for composite damage tolerance and maintenance
 - Levels of safety management are needed to properly address the emerging threat from critical accidental damage threats not covered in design (e.g., operations awareness & reporting)
 - Japan Workshop provides an essential industry forum

