PROCEDURES TASK GROUP
Task Group Chair: Eric Chesmar, United Airlines
Task Group Vice-Chair: Jeff Berner, Boeing
Task Group Mission Statement:

- Evolve composites repair practices into a model similar to that of metal industry through acceptance and implementation of standards.

Deliverables:


5 Year Review – Action Required This Meeting: None

Immediate Action Required: None

Stabilized: None
AIR6292 Composite Repair Guidelines:

**SCOPE:**

To be used as a process verification guide for evaluating implementation of key factors in repair of composite parts or assemblies at a repair site.

The intent of the guide should be for it to be used in conjunction with a substantiated repair to promote consistency and reliability.

The verification guide will present a check list of best practice known for existing repair performed today on in service aircraft and can be used to assess quality of the repair instructions (damage assessment, removal, equipment/personnel level and training, repair steps, inspection, assembly/installation documentation release, traceability) and repair site capability.
Differences between AIR6291 Metalbond and AIR6292 Composites

• **Damage evaluation and removal** is more complicated for Fiber Reinforced Composites, e.g. fluid ingestion, damage propagation.

• **Moisture/Fluid removal** is a key process step. A number of industry best-practices are to be documented.

• Fiber Reinforced composite repairs are more **varied in size and complexity**. Document will address small repairs under heat lamp or heat blanket and extensive autoclave repairs.

• **Thermal management** is a key process to ensure the repair is processed as required by the Repair Document. Document will include discussion on thermocouple placement, thermal management, different types of heat sources, and best-practices for fully documenting the cure profile.

• Fiber Reinforced composite repairs have **less clearly defined quality inspection** points. Industry best-practices often incorporate a “second set of eyes” rather than discrete quality assurance inspection.
Examples of Lessons Learned

OVERTEMP

REPAIR

Moisture was not fully removed from all areas exposed to heat

Release film not removed from repair plies during layup resulting in foreign object debris.
Progress Since Last Main Meeting

- Task Group meeting in January 11-12, 2016, hosted by United Airlines in San Francisco

- Teleconferences twice per month

- Added content for Thermal Management and Planning, Thermocouple placement, Cure, Core Restoration, Layup, Controlled Contamination Area (CCA)
## Implementation Ideas

<table>
<thead>
<tr>
<th>Members</th>
<th>General Advertising/Awareness</th>
<th>MRO</th>
<th>Internal</th>
<th>Documentation</th>
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</thead>
<tbody>
<tr>
<td>OEM</td>
<td>Magazine (such as Aero Magazine - Boeing)</td>
<td>Source control data/source substantiation of a repair and Repair Station</td>
<td>Communicate to repair engineers, esp Thermal Survey</td>
<td>Reference in repair requests approvals to MROs</td>
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<td>Regulatory Agencies</td>
<td>Communicate to repair engineers</td>
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<td>MRO</td>
<td>Presentations at conferences, such as IATA, and A4A. Magazine articles</td>
<td>Repair Certification by 3rd Party Entity, such as CASE or PRI (NADCAP). Self-certification</td>
<td>Training of planner, in-process inspectors, purchasing, mechanics.</td>
<td>Engineering substantiation reports. Assist in shop planning paperwork.</td>
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<tr>
<td>Airlines</td>
<td>Presentations</td>
<td>Sub-contractor qualifications responsibility.</td>
<td>Internal Training of Technicians and Engineers.</td>
<td>Written into Contracts when overseeing MROs. Use as guidance for shop personnel for planning, paperwork and Repair Specifications.</td>
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CACRC Task Group Update – Minneapolis - 2017
Future Activities

AIR6292

- Write and review sections for Cure, Post Repair processes, NDI, Re-assembly, Repair Records

- Add photos and write captions

- Review and revise flowcharts

- Target to finish by March 2018
 Plans Until Next Main CACRC Meeting

- Task Group Meeting in Seattle, October 2017
- Target Completion date for ballot, Spring 2018

- ARP 5701 Prepreg Layup:
  - Ballot due July 3rd
  - Submit recommendations for ARP5701 and eliminate duplication and conflicts between documents
  - Primarily the CCA section
Current Membership

Chair: Eric Chesmar, United Airlines

Vice-Chair: Jeff Berner, Boeing

Members:
- Ray Kaiser (Delta)
- Chris Reeves (AA)
- Adam Leichliter (Delta)
- Tjarko De Jong (Airbus)
- Francois Museux (Airbus)
- Megan Watson (Boeing)
- David Gladson (UPS)
- Elio Pajares (Airborne)
- Ricky Boyd (Delta)
- Arne Lewis (Boeing)
- Allen Rauschendorfer (FAA)
- Jan Popp (LHT)
- Travis Adams (Nordam)
- Ryan Rydell (UTAS)
- Matt Haines (American)
- Mattias Nestor (Exova)