

CACRC- Main Committee Meeting



Design Task Group

Status Report

November 2007

Wichita / Kansas U.S.A.

CACRC Design Task Group

Membership

Chair:

Eric Chesmar UAL

Members:

William Arrant St-Gobain

Carlos Blohm LHT

Ken Griess Boeing

Mahyar Rahbarrad Boeing

Mark Eldredge Boeing

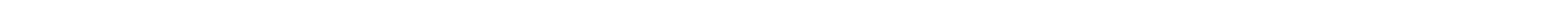
Arne Lewis Boeing

Junya Matsuda JAL

Consultants:

Anapathur Ramesh Boeing

_____ Airbus



CACRC Design Task Group

Goals

- Develop a guide for the Design of Durable, Repairable and Maintainable Aircraft Composites.
 - Develop a "**design and repair focused**" Maintenance Life Cycle Cost Model (MLCC) for commercial aircraft composite components, substantiated with realistic data, and useable by OEM designers to justify the economics of implementing change recommendations identified in SAE AE-27 into both, future and existing designs.
-

CACRC Design Task Group

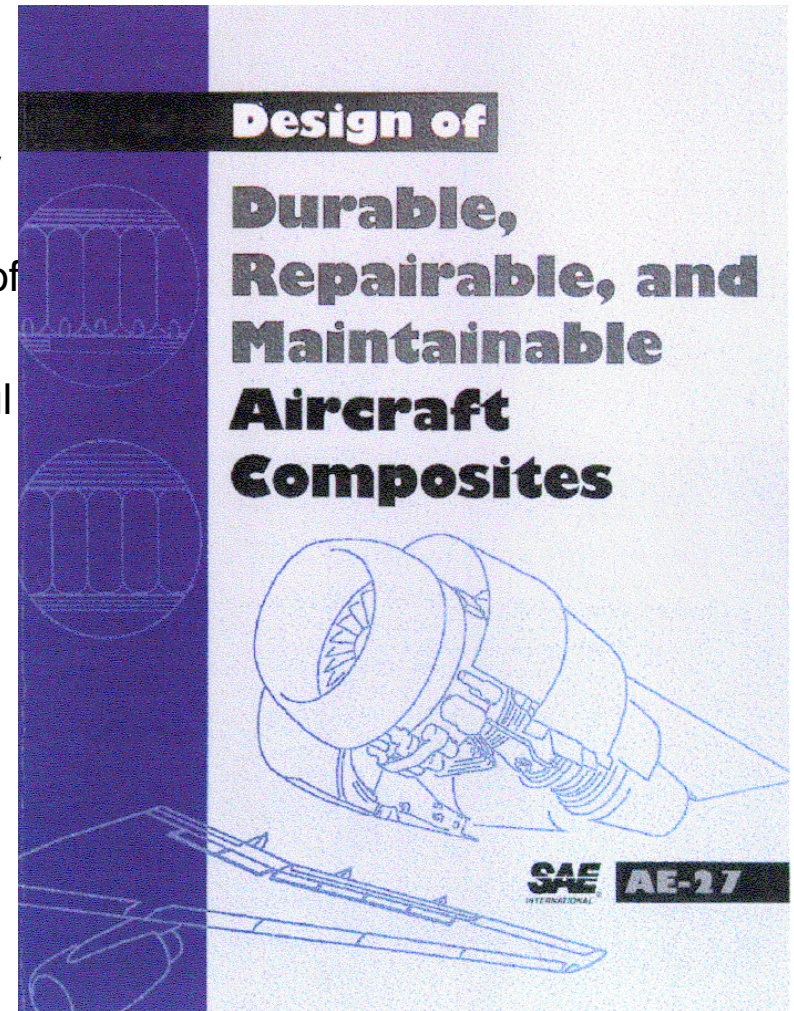
Status of activities - AE-27: Design of Durable, Repairable and Maintainable Aircraft Composites

For use by OEM and subcontractor designers, and by airlines for modification evaluation

Contains: Feedback from operators, current designs of aircraft composite and alternative design considerations, design case studies presenting a complete discussion on selected problems, successful design case studies.

Comments received so far and being worked on for implementation are:

- Add Airline Repair Conditions Report **electronic version complete posted to SAE website**
- Add photos of damage examples **on hold**
- Add reference to Life Cycle Cost document **on hold**



CACRC Design Task Group

Status of activities - SAE AE-27 Review Plan

- Reissue is intended as an SAE AIR to provide advantage of electronic version and web access.
 - Existing and additional photos will be included in document.
 - Photos have been reviewed, additional ones are still requested.
 - Add more failure modes for solid laminate designs
 - Report “Structural Repair Manual Limitations in Commercial Airline Maintenance” produced by the TG Airline Inspection and Repair Conditions has been reissued electronically and will be included.
-

CACRC Design Task Group

Status of recent activities - Maintenance Life Cycle Cost Model

Software:

- Distribution and copyright agreement approved by Boeing
 - Boeing will make a specified number of copies and provide them to SAE.
 - Waiting for delivery of written agreement to SAE.
 - Resolution of IP issue with SAE is holding progress.
- Minor changes implemented in October 2006.
- Reviewed changes with case studies.

Open actions:

- Final presentation and software release to be determined.
-

CACRC Design Task Group

Status of activities - Maintenance Life Cycle Cost Model

Guidebook AIR 4316

Completed items:

- Guidebook for MLCC of Aircraft Composite Structures is in the balloting process.
 - 23 responses received, 2 comments for corrections, no disapprovals, no waives.
 - Comments for minor corrections have been included in the document.
 - Table of Content will not be expanded into sub-sub sections.
-

CACRC Design Task Group

Status of activities - Maintenance Life Cycle Cost Model

Guidebook AIR 4316

Open actions:

- Default inputs from other manufacturers' aircraft model shall be implemented in the ballot process **still open**
 - Such as: BAe, Bombardier, CASA, Embraer, Saab
 - Inputs needed are: Aircraft model, Fleet size, Flight time per flight, flights per year per aircraft, Cancellation cost, Delay cost, Air turnback cost, Diversion cost, Fuel burn factor, Out of service cost.
 - Appendix A will be distributed to the affected OEMs requesting missing inputs.
-

CACRC Design Task Group

Future Plans

- **AE-27: Design of Durable, Repairable and Maintainable Aircraft Composites**

Revise document with special focus to expand on:

- Feedback from operators / MROs on additional design problems and develop alternative design considerations.
 - New problem and successful design case studies using the MLCC model to demonstrate the economical impact.
 - Include photographs to illustrate problem areas.
-