



FAA Joint Advanced Materials and Structures Center of Excellence

2nd Annual Technical Meeting

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Discussion Points

- **Concern**
- **Cessna perspective**
- **Home Runs**
- **Additional Opportunities**
- **Concluding Remarks**

Concern

- Potential for inconsistent application of the Commerce Department's export regulations and the DOD ITAR requirements.
- Industry input ?

Cessna Experience

- Structural Bonding
 - Composite to composite
 - Composite to metal
 - Metal to metal
- Composite Applications
 - Pressure bulkhead
 - Unpressurized primary structure
 - Control surfaces
 - Interior structures

Home Runs

- Fundamentals of bonding
- Durability and damage tolerance of composite structures
- Aging of composite structures
- Certification of metal/composite hybrid structures
- Aeroelastic response of composite structures
- Environmental effects on composite repairs
- Material and process controls

Additional Opportunities

- Revisit “Building Block” pyramid to optimize/combine the lower level coupon-based tiers.
- Validation tests
 - NDE composite analog for aluminum “conductivity” or steel “hardness” test
 - NDE “bond meter” (control, but validate)
- Addition threats:
 - Lightning strike - probability of damage combined with probability of maximum loads.

Concluding Remarks

- Thanks to the FAA for their open dialog approach between the regulatory agency, industry and academia.
- Breadth of industry involvement is an indication of the relevance and focus of the work.
- Building new technology and understanding on a foundation of “lessons learned”.