

## Comments by Mike Mott, Hawker Beechcraft

### Thank you

Heatcon Composite Systems - for the water missiles  
A&P Technology and Cytac Engineered Materials - for breakfast and lunch  
The Boeing Company - for the plant tour and dinner  
AMTAS, Future of Flight and the FAA - for hosting this JAMS review

On Tuesday Barry Smith, Exec Director, Future of Flight, asked us what we thought of this facility?  
Besides being way cool, I think it is the smartest investment in brand loyalty I have ever seen.

The overall message I plan on taking to my senior leadership is....

The right subjects (our concerns) are being addressed,  
high-quality work is being done (as expected),  
and good progress is being made.

I do not have any soap box speeches but, I do have a few comments

### **Aging of Composite Aircraft Structures** - Lamia Salah

Starship Teardown

Another NDI lesson (the wing repair)  
I would like to see if there is any ALS corrosion

Boeing 737 Horizontal Stab

Evidence that composite materials can be engineered to last but they cannot be Murphy-proofed

*Take away* - Good structures are inspectable, maintainable and repairable

### **Crashworthiness of Composite Airframe Structures** - Suresh Keshavanarayana

### **Standardization of Numerical and Experimental Methods for Crashworthiness Energy Absorption of Composite Materials** - Paolo Feraboli

Both interesting...

Can mechanical joints in composites mimic the ductility exhibited by these joints in metals?

### **Damage Tolerance Testing and Analysis Protocols for Full-Scale Composite Airframe Structures Under Repeated Loading** - Waruna Seneviratne

I would hope that this methodology will be applied to the upcoming starship wing fatigue test  
Including a demonstration of the analytical tool you have developed (we are big on tools)

### **Fluid Ingression Damage Mechanism in Composite Sandwich Structures** - Allison Crockett

This is a problem that has been hanging out there for a while  
One which admittedly is addressed only on a case by case basis

**Certification by Analysis I and II - Gerardo Olivares**

Solid methodological approach  
Very cool analytical tools (which I hope is the goal of all projects)

**Technology Assessment of the Airworthiness of Unmanned Aerial Systems - Allison Crockett**

When a friend serving in Iraq told me that his guys would takeoff and land these vehicles but some guy at a desk in Texas was flying them I wondered how long it would be until the issue came home.

This phase is eye opening.

**Course Development: Composites Awareness for the Aviation Safety Inspector - Charles Seaton**

“Training is expensive”  
Not training is an even more expensive and it is recurrent

**Damage Tolerance and Durability of Adhesively Bonded Composite Structures - Thomas Siegmund and CT Sun**

**Development of Reliability-Based Damage Tolerant Structural Design Methodology - Chi Ho Cheung and Kuen Y. Lin**

**Damage Tolerance and Durability of GLARE Laminates for Aircraft Structures - Jenn-Ming Yang**

When it comes to composites our DADT people have been hands off and left it for us “knuckle dragging stress guys” to handle with the “No growth” approach.  
Be prepared for much scrutiny once they decide to re engage.

**Structural Health Monitoring for Life Management of Aircraft - S. Krishnaswamy**

This is more than a hot topic given the infrastructure failures we are seeing today.  
It is good to see that this project has “quickly” branched out to include these civil structures.

**Impact Damage Formation on Composite Aircraft Structures - Hyonny Kim**

It will be a good thing to at least minimize the amount of subjectivity this requires (everyday).  
Maybe someday BVID will have standard

**Combined Global/Local Variability and Uncertainty in Integrated Aeroservoelasticity of Composite Aircraft - Eli Livne**

**Production Control Effect on Composite Material Quality and Stability - Beth Clarkson**

I look forward to seeing property data processed using this theory.

**Evaluation of Friction Stir Weld Process and Properties for Aerospace Application - Christian Widener**

**Failure of Notched Laminates under Out-of-Plane Bending**, Tim Kennedy

Can we expect an analytical method for the determination of the “Characteristic Dimension”?

**VARTM Variability and Substantiation** - Josiah Hughes

**Development and Evaluation of Fracture Mechanics Test Methods for Sandwich Composites** - Dan Adams

Can future work consider co-cured sandwich structures in your evaluation?

**Effect of Repair Procedures Applied to Composite Airframe Structures** - Lamia Salah

I will refrain over elaboration, as this has been a pet project for several years.  
I hope that this year HBC can deliver the sandwich specimens we've promised.

**Improving Adhesive Bonding of Composites through Surface Characterization** - Brian Flinn

Every year this has been a learning experience  
Gloves...who would have thought...that's diligence.

**Quantifying Methods for the Evaluation of Carbon Based Composite Surfaces for Subsequent Adhesive Bonding** - , Bill Stevenson

**Identification and Validation of Analytical Chemistry Methods for Detecting Composite Surface Contamination and Moisture** - Xiangyang Zhou

**Thank you for your solid work.**