



Boeing Technology
Phantom Works

Phantom

JAMS 4th Annual Technology Review

Aviation Industry Perspective on the Presented Research

Richard Bossi

Boeing Phantom Works

Structural Technology

Sr. Technical Fellow, Nondestructive Evaluation

Summary – 3 Points

Boeing Technology | Phantom Works

Transition

Transition

Transition

Comments

Boeing Technology | Phantom Works

Transition from university research to industry is difficult

Requires persistence and hard work

Many projects showed collaborations with industry and FAA

Keep that good work going, seek as much cooperation as possible

Education is key to transition

Project results need to be part of courses - some projects are already doing this

Industry and FAA training opportunities/workshops should be exploited

Use codes and software industry uses

One of the most effective transitions of technology is through personnel assignments

Joint projects are particularly valuable

Capture information available and use it as a resource

Database on composite aircraft designs and their performance history

Materials database

(Boeing is working a “Materials Pipeline”, populated with industry wide available data)

Testing of composites and structures that have been in-service – validate the claims about material performance and safety, learn lessons from history

Good cross section of projects across important and interesting topic areas

Use of historical information

Mix of structures and materials topics

Comments

Boeing Technology | Phantom Works

Good cross section of projects across important and interesting topic areas

Research Project Summaries and Presentations didn't always match

Projects reports and presentations should start with their conclusions

Negative results are valuable

Focus on certification of bonded composite structure

Bond design

Manufacture

In-service issues

QA/NDE

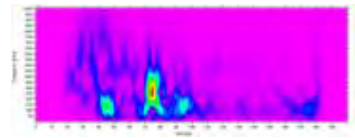
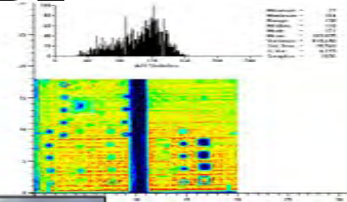
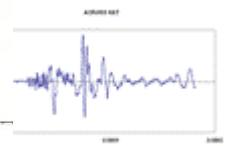
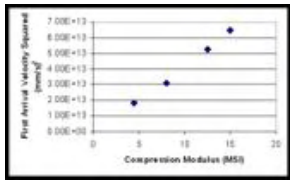
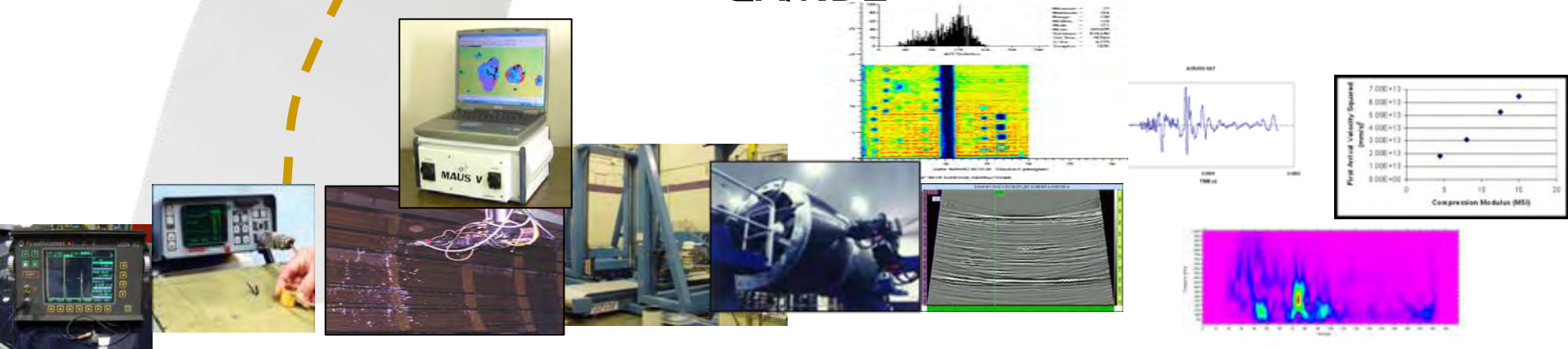
Look Ahead

Boeing Technology | Phantom Works



Focus on certification of bonded composite structure

- Bond design
- Manufacture
- In-service issues
- QA/NDE



Look Ahead

Boeing Technology | Phantom Works

Focus on certification of bonded composite structure

Bond design

Manufacture

In-service issues

QA/NDE

These topics are embedded in many existing projects and need to continue on this focus