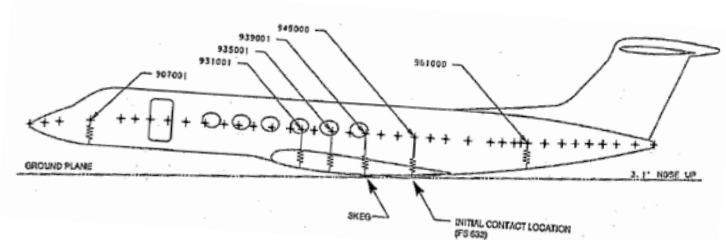


Composite Structure Crashworthiness

19 May 2011



- **Verification of analytical predictions versus actual results for:**
 - Buckling and crippling of composite structure
 - Honeycomb panel compression behavior
 - Fastener tear-out and pull-thru
- **Design features for crashworthiness**
 - Wing Crush in center section
 - Floor beam deflection under floor
 - Use of aluminum substructure for energy absorption
- **Development of geometric crash scenarios**
 - Fuselage on Wing Impact (with/without gear)
 - Forward Fuselage Impact (with/without gear)
- **Development of computer model simulation (dynamic, non-linear)**



- **What results have been used from FAA crash tests on the LearFan and Starship (and any other composite structure)? [or can be used]**
 - **What crash test results are available for results and evaluations?**
 - **Did all FAA Part 25 metal aircraft drop tests result in acceptable crashworthiness to composite structure requirements?**
 - **Would the FAA be interested in testing additional cabin sizes if analytical models were provided?**
- **Does the FAA/EASA consider operational use (14 CFR Part 91/135/121) as a factor in composite structure crashworthiness (space per person, exits per person, etc.)?**
- **How might a hybrid structure to be evaluated? What would be the threshold of requirement implementation?**