Composite Modification Workshop

Wichita, KS
August 22-23, 2017
Regulators Present

- Larry Ilcewicz, CSTA for Composites
- Cindy Ashforth, STS for Composites
- Rusty Jones, STS for NDI and Composites
- Angie Kostopoulos, Design Certification Section
- Mike Cann, Atlanta ACO Branch
- Barry Culler, Atlanta ACO Branch
- Walt Sippel, Transport Standards Branch
- Matt Fuller, Rotorcraft Standards Branch
- Katherine Thompson, TCCA
Workshop Participants

- AIRBUS (2)
- AVIATION CNSLT INC
- BOEING (2)
- CARLISLE (2)
- LARRY GINTERT
- PAUL BREY
- AIR FLIGHT TECHNICAL
- DELTA (2)
- FAA (8)
- FOKKER
- GULFSTREAM
- HENRY OFFERMANN

CONSULTING
- KAMAN ENGINEERING SERVICES
- MCCLENAHAN ENGINEERING
- SAINT-GOBAIN (2)
- SPIRIT (4)
- TCCA
- TEXTRON
- VAN HORN AVIATION
- WSU
Structural Modification Challenges

- Lightning entry/exit
- Adapter Plate
- Radome
- Antenna
- UDRI – Test vs. Simulation

American Airlines, Delta, United, Southwest, US Airways

Private planes had 943 total strikes

Source: FAA Wildlife Strike Database, 1990-2014
General Thoughts

• When it comes to structural mods involving composites, the OEM “own the keys to the kingdom”
  ➢ However, that fact doesn’t change opportunities for the lowest bidder
  ➢ Cost and certification efficiency advantages are possible
    (partnerships derived through customers seem feasible and wise)

• Analysis for composite structure is an exercise in predicting load paths for calibrated “design values”
  (that depend on stringent material and process controls for load sharing, strength, fatigue performance and damage tolerance)
  ➢ Structural bonding and composites are highly process sensitive
  ➢ Structural databases have limited relationships with coupon data
  ➢ Larger scale test results are often needed as a conservative check for significant combined and secondary load effects

• Safety is a goal for most DER but so is minimum costs
  ➢ This AC will strive to help you meet these goals