



C&D Zodiac

787 Work Statements

JAMS

Joint Advanced Materials and Structures
June 20, 2006



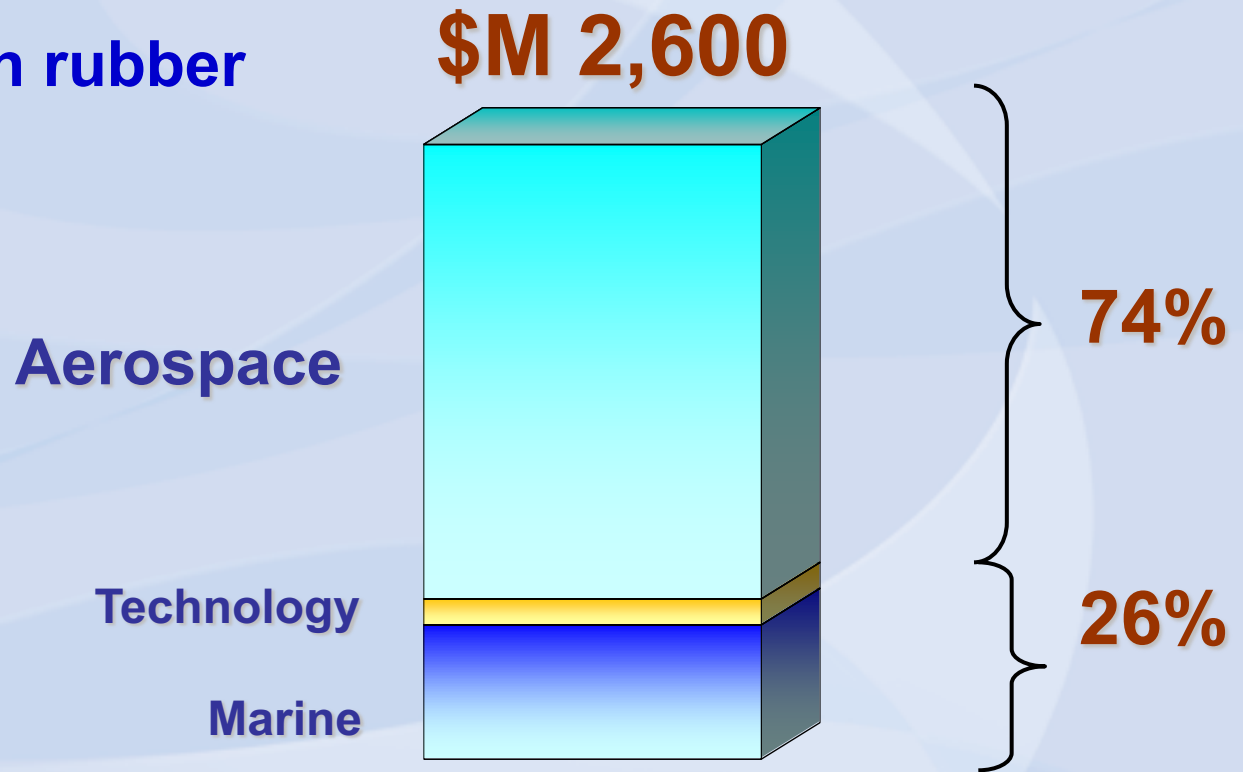
C&D Zodiac

- Mid July 2005 Northwest Composites (NWC) became part of C&D Zodiac



C&D Zodiac

- Much more than rubber boats



2004/05 Sales
(Proforma including C&D)



787 Overview

- **The 787 is the most successful aircraft introduction in Boeing history**
- **Over 350 firm orders**
- **First parts are due in August, 2006 (Structures)**
- **First parts are due in January, 2007 (Interiors)**
- **Boeing rate plan (aircraft per month):**
 - 2006 (1)
 - 2007 (2)
 - 2008 (4)
 - 2009 (8)
 - 2010 (12)
 - 2011 (16 ???)



787 Interior Highlights

Interior features:

- 30% larger window area
- LED mood lighting
- Electronically Dimmable windows
- More comfortable cabin environment
- Dramatic Archway and Domed entry
- Snap together, tool less assembly





787 Interior Linings

- **C&D will design and build:**
 - **Sidewalls**
 - **Door/Doorway Linings**
 - **Ceilings**
 - **Cargo Linings**
- **C&D Linings will cover 70% of the visible fuselage interior**



787 Sidewalls

- One piece “snap” together assembly
- Supports the Electronically Dimmable Window
- Provides for emergency decompression
- Contributes to Boeing’s goal of having the quietest commercial cabin interior



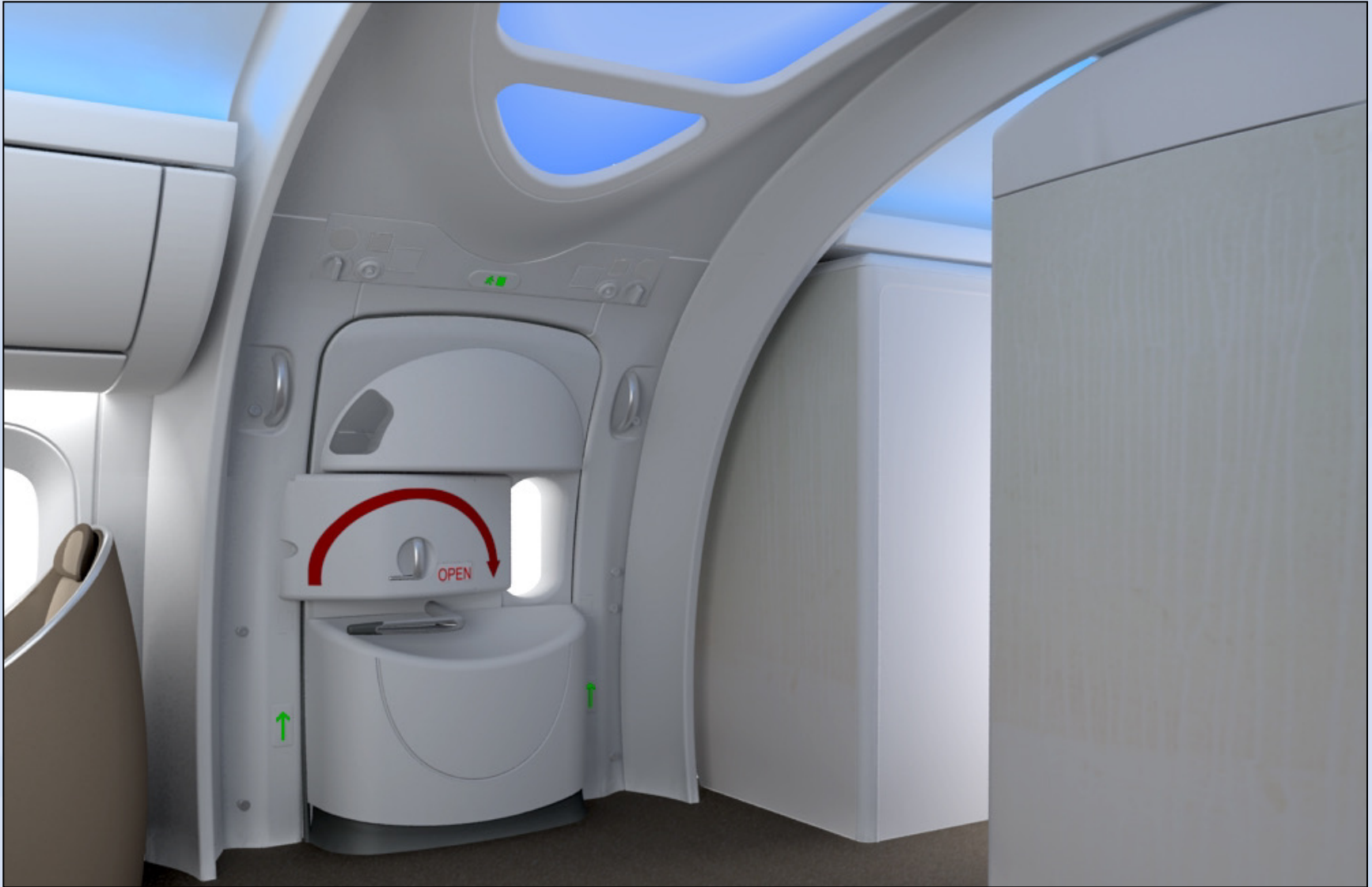


787 Door/Doorway Linings

- Protects the door mechanism and emergency escape slide
- Contains features for optional table and service cart stowage
- Similar to 777 door liners
- Quick install feature
- Sleek integrated design



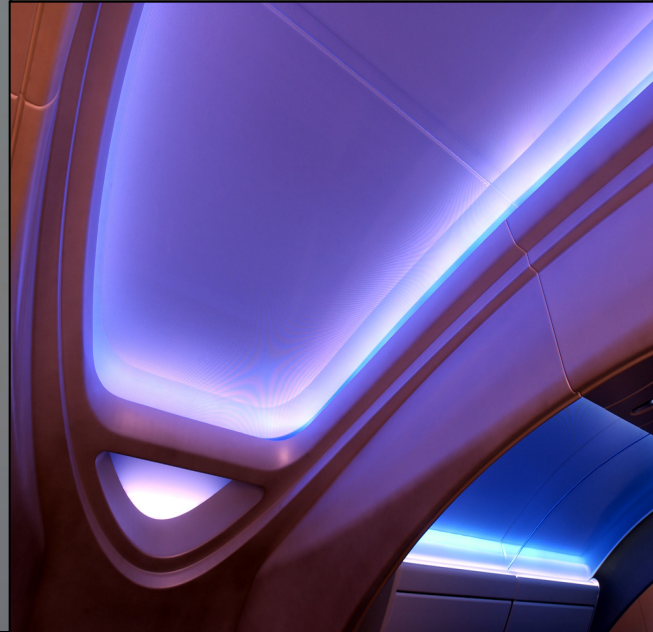
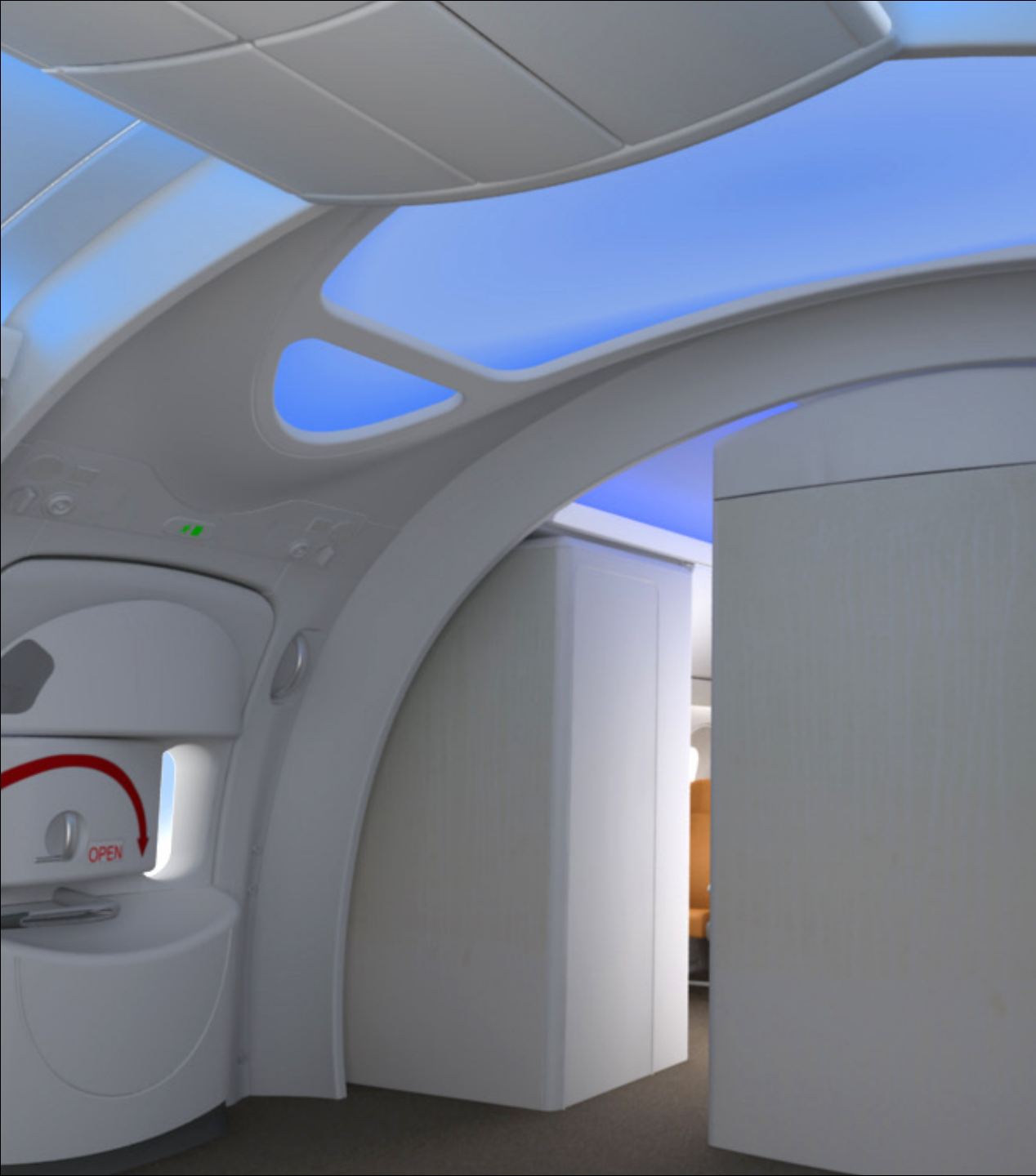
787 Door 2 Entry



787 Ceilings

- 787 is the smallest aircraft to incorporate a forward & aft upper lobe crewrest
- Most complex ceiling package ever put in a commercial aircraft
- 3 different door entry ceilings
- Optional first class configurations





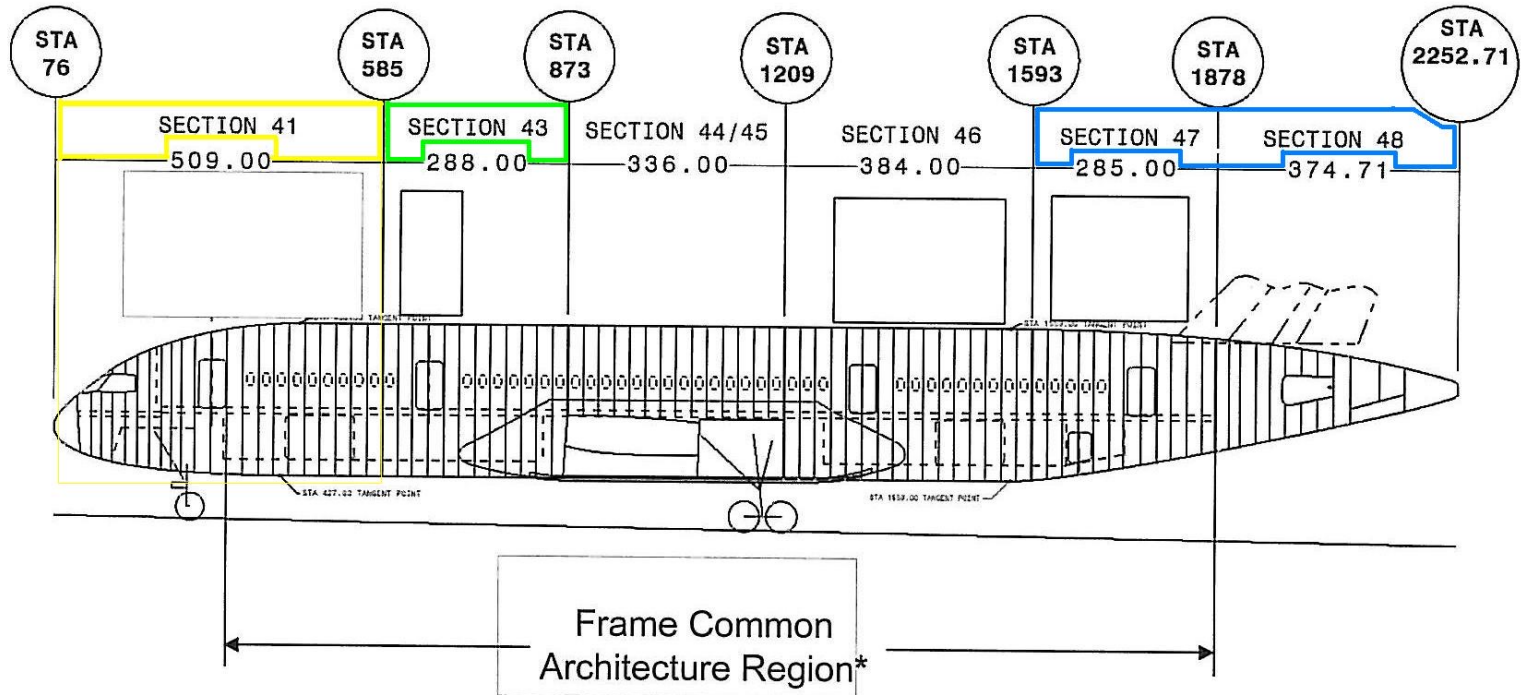


787 Cargo Linings

- Two large cargo bays for containers and pallets
- Bulk area for loose baggage
- Liners must protect against an 1800° F fire, contain smoke, and fire extinguishing Halon

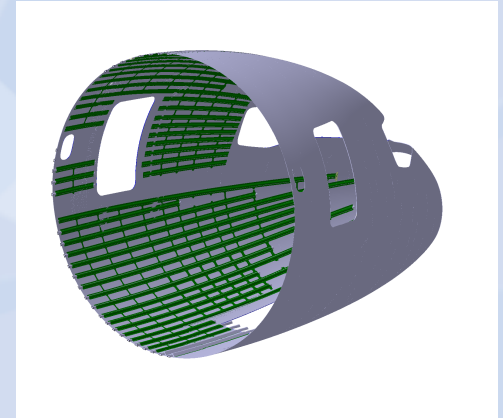
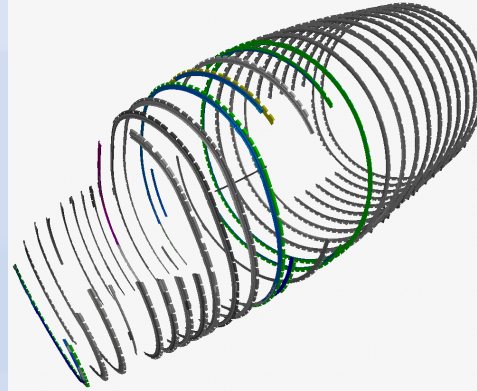
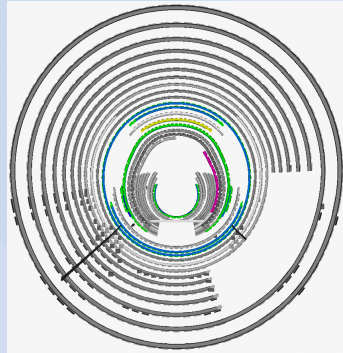


787 Composite Structures

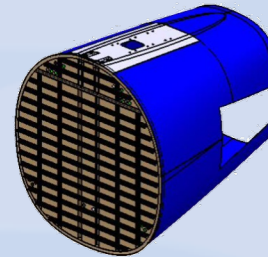
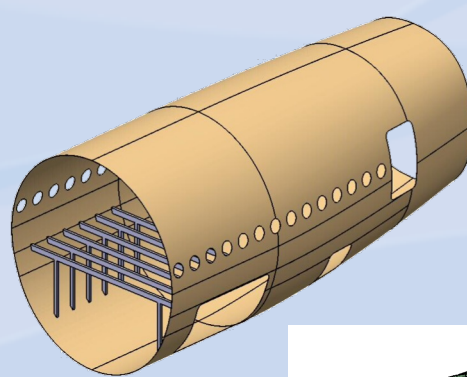


787 Composite Structures

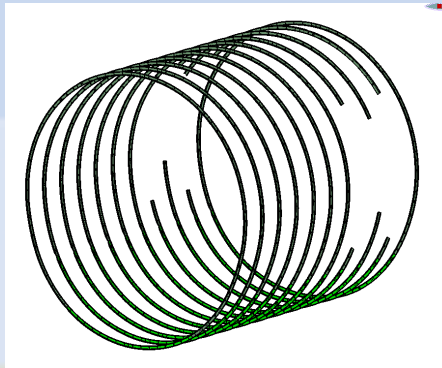
- Spirit



- Vought



- KHI



787 Composite Structures

- **Spirit**
 - Part Categories
 - Frames (qty 103)
 - UD tape shear ties / angles / etc (qty 534)
 - PW angles (qty 71)
- **Vought**
 - Part Categories
 - Frames (qty 52)
 - Potential UD tape miscellaneous (qty 30)
- **KHI**
 - Part Categories
 - Frame (qty 47)



787 Composite Structures

Composite
Frames

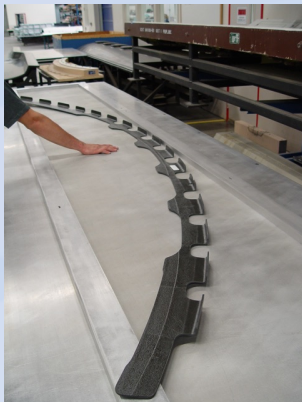
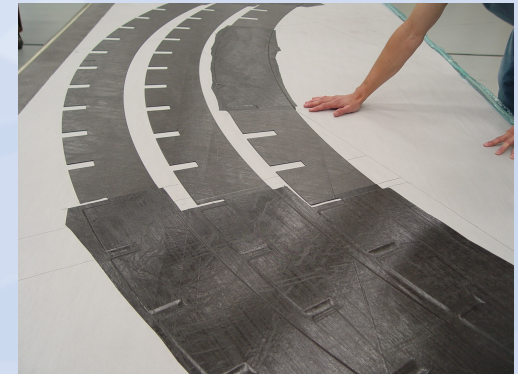


Composite
Shear Tie



787 Composite Structures

- **787 Parts Experience (861 each)**
 - 164 ea Frames
 - 201 ea Shear Ties
 - 47 ea Angles
 - 45 ea Z splices
 - 404 ea Misc. (clips, allowables, brackets etc...)



787 Composite Structures

- **Frames**



- **Shear Ties**

