Agenda

- Program Overview and History
- A Highly Integrated Global System
- Leading Globally
Advancing the State-of-the-Art in Composites Manufacturing

2001 - 2002

2003
Composites

Historical Use of Composites

Composites or Aluminum?

[Graph showing historical use of composites and comparison between composites and aluminum for Recurring Cost and Weight, with potential targets and advanced alloys indicated.]

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Historical Use of Composites

% Structural Weight


Airplanes: DC-9, B747, A300-600, B777, A380, B7E7
Composite Structure

- Lighter
- More durable
- Negligible corrosion and fatigue
- Reduced scheduled maintenance
- Opens new design possibilities

Composites are the right material choice for the 787
Delivering on the 787 Vision

**FUNDAMENTAL INNOVATIONS**
- Composite structure
- More electric architecture
- Advanced aerodynamics
- Latest engine design

**BREAKTHROUGH PASSENGER EXPERIENCE**
- Large dimmable windows
- Lower cabin altitude
- Smoother ride
- Cleaner air
- Dynamic lighting

**LOWER COSTS, NEW REVENUE OPPORTUNITIES**
- Same range & speed as current long-range airplanes
- Open new non-stop markets
- Carry more cargo
- Fast cruise speed - Mach 0.85
- Less maintenance, more productivity
- Lowest trip cost
The 787 Expands the Technology Envelope

Composite primary structure
- Reduced weight
- Improved fatigue and corrosion properties
- First heavy maintenance visit at 12 years
- Enables new design possibilities

New level of aerodynamic efficiency
- Mach 0.85 cruise with low fuel consumption
- Smoother ride
- Advanced flight controls reduce structural loads

More electric systems architecture
- 1.5 MW power generation capacity
  - Air conditioning
  - Anti-ice
  - Brakes
- Improved reliability (V5)
- More efficient energy usage
- Comprehensive health monitoring capabilities

Latest engine technology
- Lower fuel consumption – fewer emissions
- Smaller noise footprint
- Reduced maintenance
Unprecedented Market Response

847 orders from 55 customers

• As of 31 August, 2010
• Leasing operator
Flight Test Milestone Progress

First Flight | Dec 2009
Initial airworthiness | Jan 2010
Flutter testing | Mar 2010
Ground effects | Mar 2010
Ultimate wing test | Mar 2010
Expanded TIA | Apr 2010
Extreme Weather | Apr 2010
Icing Testing | May 2010
Rolls-Royce NAMS | May 2010
GE First Flight | Jun 2010
GE Flutter | Jul 2010
Flight Load Survey | Sep 2010

More than 620 flights and 1,905 flight hours
Video
Agenda

- Program Overview and History
- A Highly Integrated Global System
- Leading in Complex Global Systems
Structures from Around the World

- Fuji Heavy Industries
- Messier-Dowty
- Kawasaki Heavy Industries
- Latecoere
- Alenia Aeronautica
- Boeing - Charleston
- Spirit
- Mitsubishi Heavy Industries
- Korean Air
- Saab
A Different Business Model

- Fewer risk-sharing supplier/partners
- Greater integration responsibility
- Detailed design responsibility
- Greater standardization
A Global Structural Test Program

Combined Pressure and Mechanical Tests

Fuel Seal Box Testing
Static and Fatigue Testing

Ultimate Static Test

Fatigue Test
Lower Skin LM Machined in the Kobe Shipyards
Production Tooling for Fuselage Barrels

- Spirit Sec. 41
- KHI Sec. 43
- Alenia Sec. 44
- Alenia Sec. 46
- Boeing Aft Sec. 47/48
- Boeing Sec. 48 Tailcone
Autoclaves

KHI

Spirit

Alenia

Vought

MHI

FHI
Facilities

- FHI – Handa Plant
- Alenia Grottaglie Facility
- Boeing Charleston site
Dreamlifter Route Structure

Worldwide operations, less work in process
Dreamlifter Progress
Final Assembly: Wing-to-Body Join
South Carolina enhances delivery rate capability

- Scheduled to be operational in Summer 2011
- Transitional surge line in Everett until Charleston site is completed
- Establishing dual sourcing to assure supply chain continuity
What the PIC does

- Increased visibility of time sensitive issues - 24/7 response
- Increased visibility across the supply chain - greater situational awareness
Leading Globally

- Technical competence
- Systems perspective
- Cultural awareness
All About People
Selecting Our Global Partners
Working Across the Globe

The GCC (Global Collaboration Center)
The Joint Development Phase

Korean Potluck

Golden Week

Bastille Day Celebration
Initial Technology Development in Seattle
Sealing Up Co-Cured Technology
Joint Spar Development
Collaborating with Colleagues Around the World
Building our Global Enterprise
**7E7**

Tiered Awareness Training Approach

- Principal Investigators
- Procurement Agents
- IPT Leaders
- Facilitator/Mentors

**Cultural Familiarity**

**Cultural Knowledge**

**Cultural Fluency**

Consultants

US-based employees with infrequent interactions with team members from other cultures

Personnel with frequent, on-going interaction with team members from other cultures
Thank You