BCA Supplier Management

International Titanium Association

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Agenda

- Business Environment
- Partnering for Success
- Boeing Titanium Strategy
- Opportunities and Risks
- Going Forward
Emerging and Developing Economies
- China, Emerging Asia, Middle East, Africa

Business Model Shifts
- Geographic expansion of Low Cost Model
- Gulf 3 – one stop anywhere
- Alliances

Replacement
- Pent up demand
- Retirement wave
Airlines will need more than 35,000 new airplanes valued at $4.8 trillion

Airplane deliveries: 35,280

<table>
<thead>
<tr>
<th>Type</th>
<th>2013 - 2032</th>
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<tbody>
<tr>
<td>Regional</td>
<td>2,020</td>
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<tr>
<td>Single-aisle</td>
<td>24,670</td>
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<td>Small wide-body</td>
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<td>3,300</td>
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<tr>
<td>Large wide-body</td>
<td>760</td>
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Market value: $4.8T

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<tr>
<th>Type</th>
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A large and valuable market … still in play

Total units: **24,300**

*Projected demand for new airplanes through 2032*
2011-2016 growth: 15 rate increases, 58% expanded capacity

**Current Rates:**
- 737 – 38/mo
- 747 – 1.75/mo
- 767 – 1/mo
- 777 – 8.3/mo
- 787 – 7/mo

**Aggregate for all airplane programs**
- 43.5 per month

**40% rate increase from 2011 to 2014**
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Customers expecting more for less

- More efficient products and services
- Integrated services for mixed fleets
- Availability and reliability
- Standardization and simplification
- Lower ownership and operating costs

The right product...for the right price... at the right time
Partnering for Success
Affordability focus areas

- 1st Time Quality
  - Quality parts
  - Rate readiness

- Design Cost Out / Lean+
  - Value Engineering
  - Accelerated Opportunity Capture

- Supply Chain Architecture
  - Value creation / innovation
  - Strategic sourcing

- Competition / Commercial Rebalancing / Volume
  - Risk / Reward
  - Statement of work adjustment
Partnering for Success

- Specific targets flowed to the supply base

- Plans required from each supplier
  - High visibility on progress
  - Define required supplier and Boeing actions

- New work tied to achieving targets

- Boeing committed to driving PFS targets
  - Top-down commitment
  - Willing and able to change the supply chain
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Boeing titanium strategy

- Long-term sourcing agreements in place
- Driving a closed loop scrap solution
- Supporting 787 focus areas
  - Optimizing buy-to-fly (mid 8s to mid 6s)
  - Industrializing composites
- Incorporating new products (737 MAX, 787-10, 777X) and associated technologies

Superior performance means more affordable airplanes
Boeing titanium scrap view

- Scrap collection and revert critical for success
- Current scrap supply situation is temporary
- Boeing actively protecting input supply

All scrap segregated and treated like gold
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Opportunities and risks
Entering Boeing supply chain

- Reduction of **titanium usage**
  - Reduction of buy-to-fly

- Parts moving to other materials
  - **Titanium to Aluminum**

- New usage of titanium
  - **737 MAX** – titanium inner wall
  - 787-10 – volume/size
  - **777X** – composite wing

- Production **stability**

*Business environment and rate increases demand focus and execution*
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Going forward

- Achieve system balance
  - Demand, ordering inventory, and revert

- Focus on cost and rate execution

- Support the new airplane development

- Capture the future…

Relentless focus on quality, affordability and flawless execution