Alcoa. Advancing each generation.

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EVP and Group President – Engineered Products and Solutions  
Cowen and Company’s 34th Annual Aerospace/Defense Conference  
February 6-7, 2013
Forward-Looking Statements

This presentation contains statements that relate to future events and expectations and as such constitute forward-looking statements. Forward-looking statements include those containing such words as “anticipates,” “estimates,” “expects,” “forecasts,” “intends,” “outlook,” “plans,” “projects,” “should,” “targets,” “will,” or other words of similar meaning. All statements that reflect Alcoa’s expectations, assumptions, or projections about the future other than statements of historical fact are forward-looking statements, including, without limitation, forecasts concerning global demand growth for aluminum, end-market conditions, supply/demand balances, and growth opportunities for aluminum in automotive, aerospace and other applications, trend projections, targeted financial results or operating performance, and statements about Alcoa’s strategies, outlook, and business and financial prospects. Forward-looking statements are subject to a number of known and unknown risks, uncertainties, and other factors and are not guarantees of future performance. Important factors that could cause actual results to differ materially from those in the forward-looking statements include: (a) material adverse changes in aluminum industry conditions, including global supply and demand conditions and fluctuations in London Metal Exchange-based prices for primary aluminum, alumina, and other products, and fluctuations in indexed-based and spot prices for alumina; (b) deterioration in global economic and financial market conditions generally; (c) unfavorable changes in the markets served by Alcoa, including automotive and commercial transportation, aerospace, building and construction, distribution, packaging, defense, and industrial gas turbine; (d) the impact of changes in foreign currency exchange rates on costs and results, particularly the Australian dollar, Brazilian real, Canadian dollar, euro, and Norwegian kroner; (e) increases in energy costs, including electricity, natural gas, and fuel oil, or the unavailability or interruption of energy supplies; (f) increases in the costs of other raw materials, including calcined petroleum coke, caustic soda, and liquid pitch; (g) Alcoa’s inability to achieve the level of revenue growth, cash generation, cost savings, improvement in profitability and margins, fiscal discipline, or strengthening of competitiveness and operations (including moving its alumina refining and aluminum smelting businesses down on the industry cost curves and increasing revenues in its Global Rolled Products and Engineered Products and Solutions segments) anticipated from its restructuring programs and productivity improvement, cash sustainability, and other initiatives; (h) Alcoa’s inability to realize expected benefits, in each case as planned and by targeted completion dates, from sales of non-core assets, or from newly constructed, expanded, or acquired facilities, such as the upstream operations in Brazil and the investments in hydropower projects in Brazil, or from international joint ventures, including the joint venture in Saudi Arabia; (i) political, economic, and regulatory risks in the countries in which Alcoa operates or sells products, including unfavorable changes in laws and governmental policies, civil unrest, or other events beyond Alcoa’s control; (j) the outcome of contingencies, including legal proceedings, government investigations, and environmental remediation; (k) the business or financial condition of key customers, suppliers, and business partners; (l) adverse changes in tax rates or benefits; (m) adverse changes in discount rates or investment returns on pension assets; (n) the impact of cyber attacks and potential information technology or data security breaches; and (o) the other risk factors summarized in Alcoa’s Form 10-K for the year ended December 31, 2011, Forms 10-Q for the quarters ended March 31, 2012, June 30, 2012 and September 30, 2012, and other reports filed with the Securities and Exchange Commission.
- Diverse portfolio of **innovative products** and **solutions** with **leading industry positions** across many product lines

- Positioned to **capture share growth** now and in the future

- Underpinned by the **Alcoa Advantage** and a **rich aerospace history**

- Delivering **significant value to our customers** by enabling current and **next generation aircraft**

**Alcoa. Advancing each generation.**
Alcoa Aerospace: Global Presence with 50 Facilities in 12 Countries

Excludes sales and business offices
Two Alcoa Business Groups Power Alcoa Aerospace

Alcoa Corporate 2012 Revenues: $23.7 Billion | Locations: 200+, in 30 Countries | Employees: 61,000

Global Rolled Products
2012 Revenues $7.4 B

Aero 16%

Other market sectors 84%

% GRP 2012 Aerospace Revenue 14%

Engineered Products and Solutions
2012 Revenues $5.5 B

% EPS 2012 Aerospace Revenue 50%
A Balanced Aerospace Portfolio Producing $3.8B in Revenues*

Innovative Fastening Solutions
- Global leader in aerospace fastening systems

Global Leader in Advanced Aerospace Solutions
- Aluminum sheet and plate
- Commercial and military aircraft aluminum forgings and extrusions
- Structural castings

- Fastening Systems
  - 29% $1.1B

- Aero Structures
  - 45% $1.7B

- Precision Castings
  - 26% $1.0B

High Performance Engine Castings
- Global leader in jet engine airfoils

* 2012 Revenues
Vibrant Aerospace Growth Projected Over Long and Near Term

Strong Orders and Deliveries…

Commercial Jet Deliveries\(^1\)

- **Units**
- **$B Value**

<table>
<thead>
<tr>
<th>Year</th>
<th>Units</th>
<th>$B Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>$64</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>$72</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>$102</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>$118</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>$135</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>$166</td>
<td></td>
</tr>
</tbody>
</table>

- **4.1% CAGR**
- **8.5% CAGR**

…Driven by Travel Demand + Aging Fleet

Commercial Airline Fleet\(^2\)

(two units)

<table>
<thead>
<tr>
<th>Year</th>
<th>Planes</th>
<th>Average Build Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>2021</td>
<td>13</td>
<td>1,700 aircraft</td>
</tr>
<tr>
<td>2031</td>
<td>14</td>
<td>$B Value</td>
</tr>
</tbody>
</table>

- **34,000 new planes**
- **Avg. build rate of 1,700 aircraft per year**

- **Backlog: ~8 years of production at 2012 rates**

Sources: 1) The Airline Monitor and OEM websites  
2) Boeing 2012 Commercial Market Outlook

Notes: All figures include both Large Commercial Aircraft & Regional Jets
Alcoa Aerospace Thrives on Both CFRP and Metal-Intensive Aircraft

Alcoa Aerospace Has Strong Positions on Every Large Transport Aircraft

**Value Per-Ship Set Not Diminished on CFRP-Intensive Aircraft**

<table>
<thead>
<tr>
<th>Aircraft Model</th>
<th>Alcoa Revenue Indexed to B737</th>
</tr>
</thead>
<tbody>
<tr>
<td>747-8</td>
<td></td>
</tr>
<tr>
<td>777</td>
<td></td>
</tr>
<tr>
<td>787</td>
<td></td>
</tr>
<tr>
<td>767</td>
<td></td>
</tr>
<tr>
<td>737 Family</td>
<td>100</td>
</tr>
<tr>
<td>A380</td>
<td></td>
</tr>
<tr>
<td>A350</td>
<td></td>
</tr>
<tr>
<td>A330</td>
<td></td>
</tr>
<tr>
<td>A320 Family</td>
<td></td>
</tr>
</tbody>
</table>

**Embedded in Every Type of Aircraft**

- 3x the ship-set value on 787 vs. 737
- Over 80% higher on 787 vs. 767
- Over 85% higher on A350 vs. A330
- ~ 60% of Alcoa Aerospace’s revenues are generated by products made from materials other than aluminum
Alcoa Technology: Unsurpassed Innovation Capabilities

Alcoa Technology Advantage: Differentiates Alcoa From Our Competitors

Top R&D Capabilities

- World’s Largest Light Metals Research Facility
- Received top ranking in innovation as Fortune Magazine’s Most Admired Metals Company in the World for 2012
- More than 90% of all alloys flying on today’s aircraft were developed by Alcoa

Alcoa Technical Center, PA, USA

Alcoa Technical Core Competencies

- Surface
- Coatings
- Design
- Basic Science
- Pilot Production
- Modeling
- Alloy Development
- Casting
- Joining
- Forming
- Joining
Alcoa Has Invented the Majority of Aerospace Aluminum Alloys

**Why Alcoa’s Al-Li?**

- **Lower cost base** through the limited use of silver as an alloying agent
- **Industry’s most complete product portfolio** including sheet, plate, small press extrusions, large press extrusions and forgings
- **World-leading round ingot capability**

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### Chronology of Alcoa Aerospace Alloy Advancement

#### Thick Product
- 2060-T8E50

#### Upper Wing
- 7085-T7452
- 7085-T7/7651
- 7055-T7651
- 7055-T7/792
- 7255-T7/92

#### Fuselage
- 2055-T8E33
- 2060-T8E30
- 2099-T86
- 2099-T83
- 2099-T81
- 6013-T6 HDT

#### Lower Wing
- 2099-T83
- 2624-T351
- 2624-T39
- 2026-T3511

#### Space & Military
- 2090-T83
- 2397-T87
- 2195-T8M4
- 6055

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`= Al-Li Products`
3rd Generation Aluminum Lithium Alloys for Next-Generation Aircraft

**Selected Alcoa Al-Li Applications**

- **A380**: Lower Wing Stringers, Floor Beams, Seat Tracks and Misc Small Press Extrusions
- **A350-XWB**: Floor Beams
- **Global 7000 / 8000**: Lower Wing Stringers

**Expanding to Meet Customer Demand**

- **Investing** ~$90M in new state-of-the-art facility in Lafayette, IN
- **More than 20k metric tons** from greenfield project
- **Expanding** UK capacity as well

**New Al-Li Alloys for Propulsion**

- **2055 Extrusions**
- **2060 Forgings**

**High strength; meet high temperature demands**

- Best combination of **lower density** (4% to 6%), improved stiffness (5% to 7%) and corrosion resistance; reduces
  - Fuel burn ~15%
  - Maintenance cost
  - Noise

**20% Fuel Efficiency Improvement**

- 2-5% Wing aerodynamic drag reduction

**3% Weight reduction**

**15% Engine fuel burn reduction**

**30% Maintenance cost reduction**

**10% Assembly cost reduction**
Next Generation Jet Engine Needs

- Fuel Burn ~15% Reduction
- Emissions ~50% NOx Reduction
- +30% Improved Maintenance Cycle
- ~15 Decibel Noise Reduction

Alcoa Innovative Solutions

Advanced Single Crystal:
- Increased Melting Point 12%
- Oxidation Resistance Improvement

Thin Airfoil Equiax Process:
- Reduced Blade Weight ~ -20%
- Improved Fuel Consumption

Aerospace Applications

Next Generation:
- Large Commercial Aircraft
- Military

Multi-Wall / 3D Airfoil Cooling Schemes

- Directs Air to Critical Areas
### Innovative Fasteners Solve Commercial Aerospace Challenges

<table>
<thead>
<tr>
<th>20% Fuel Efficiency Improvement</th>
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<tbody>
<tr>
<td>2-5% Wing aerodynamic drag reduction</td>
</tr>
<tr>
<td>Up to 3% weight reduction</td>
</tr>
<tr>
<td>15% Engine fuel burn reduction</td>
</tr>
</tbody>
</table>

| 30% Maintenance cost reduction |
| 10% Assembly cost reduction |

<table>
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<tr>
<th>Next Generation Sleeved Fastening Systems</th>
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<tbody>
<tr>
<td><strong>Flite-Tite®</strong></td>
</tr>
<tr>
<td>![Flite-Tite® Image]</td>
</tr>
<tr>
<td>- Electromagnetic energy management</td>
</tr>
<tr>
<td>- 50% Lower installed cost</td>
</tr>
<tr>
<td>- 3x Better joint fatigue life</td>
</tr>
<tr>
<td>- Provides fuel tight joints</td>
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<table>
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<tr>
<th>Advanced Quick-Access Fastening Devices</th>
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<tr>
<td><strong>FC43® Titanium Panel Fastener</strong></td>
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<tr>
<td>![FC43® Image]</td>
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<tr>
<td>- 34% weight reduction</td>
</tr>
<tr>
<td>- 20% lower installation time</td>
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<tr>
<td><strong>Baggage Door Latch</strong></td>
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<tr>
<td>![Baggage Door Latch Image]</td>
</tr>
<tr>
<td>- High level of reusability (5,000 cycles)</td>
</tr>
<tr>
<td>- Cockpit indicator for proper latch closure</td>
</tr>
</tbody>
</table>
Proposed aircraft was 10% overweight

Monolithic forgings save an average 400 lbs per jet

Provide 15%-20% total system cost savings

Supported by enhanced 50k ton press
Among the largest providers of aerospace products and solutions producing $3.8B in revenue

Projected vibrant aerospace growth and our innovation leadership create a unique opportunity for Alcoa to capture future profitable growth

Our rich aerospace history, industry leading positions and the Alcoa Advantage differentiate our business

Enabling our customers to meet or exceed goals of current and next-generation aircraft

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