Aircraft Scrapping and Recycling

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Boeing Commercial Airplanes
Airplane Environmental Performance
Agenda

- Overview
- Current Process
- New Technologies
Facts About Aircraft Scrapping

- Industry has a viable market system for some aspects of airplane scrapping.
- Scrapping industry has small margins that preclude radical technology change.
- Process does not optimize the value of the materials recovered from the aircraft.
Aircraft Scrapping Faces Complex Issues

1. Design for Environment objectives vs. aircraft durability objectives

2. Potential hazard of debris with no resale value or foreseeable recycling options

3. Uncertain reception for reclaimed materials

4. There is no single company with business interest to address items 1 – 3.
Objective

Seek out and enhance opportunities to improve the end-of-life value of aircraft by helping companies in the business develop alternatives that are fiscally sound and environmentally preferable to current practices.

Activity:
- Carbon Fiber (current effort)
- Aluminum alloy separation (current effort)
- Circuit boards (planned effort)
1. Aircraft are parked and stored for some period of time...
2. Then parted out...
3. Carcasses are chopped and shredded...
4. Material streams separated and segregated.

Improving the Process

Process Points Targeted by Boeing
Working to Facilitate New Solutions
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Working to Facilitate New Solutions
<table>
<thead>
<tr>
<th>Existing Technology</th>
<th>New Technology</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>• Alloys poorly separated</td>
<td>• More selective separation</td>
<td>• Solve environmental problems</td>
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<tr>
<td>• Carbon discarded in land fill</td>
<td>• Higher-value products</td>
<td>• Increase airframe overall value</td>
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<td>• New revenue for scrapping business</td>
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Other Uses for Retired Aircraft
Thank you

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Q & A