MidJet a personal Jet

A student project

Christopher Jouannet Ph.D


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<th>Time Span</th>
<th>Aircraft projects</th>
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<tr>
<td>1990-2020</td>
<td>YF-22, YF-23, JSF, C-17</td>
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<td>2000-2030</td>
<td>UCAV, B-37...</td>
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Challenges within Aircraft design

• Aircraft designers are:
  • Broad specialists…
  • Will unfortunately only participate to a few number of project during is career…should have been born in the 40’s
  • High number of disciplines involved
  • Need experience
Aircraft Design

“Dream airplanes” – C. W. Miller
Students project, why?

- Educate
- Give a broad view
- Educate generalist and not specialist
- A chance to see a product from requirement to first flight
- Have fun and be proud
- Team work
Project requirements

- Need to be stimulating
- Need to be a challenge
- Need to show interaction between the different disciplines
- Need to be something new…or old…
- Need to
MidJet Requirements

- Replacement of the outdated BD5J
- Appealing design
- Good handling qualities
- Performance level similar to BD5J
- Defined under which certification this aircraft can be certified
Concepts
Design
### Characteristics

<table>
<thead>
<tr>
<th></th>
<th>MidJet</th>
<th>BD5J</th>
</tr>
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<tbody>
<tr>
<td>MTOW [kg]</td>
<td>320</td>
<td>386</td>
</tr>
<tr>
<td>OEW [kg]</td>
<td>146</td>
<td>163</td>
</tr>
<tr>
<td>Vcruise [km/h]</td>
<td>437</td>
<td>386</td>
</tr>
<tr>
<td>Stall speed [km/h]</td>
<td>104</td>
<td>107</td>
</tr>
<tr>
<td>Wing loading [kg/m²]</td>
<td>100</td>
<td>137</td>
</tr>
<tr>
<td>Sref [m²]</td>
<td>3,2</td>
<td>2,8</td>
</tr>
<tr>
<td>Wing span [m]</td>
<td>5,2</td>
<td>4,36</td>
</tr>
<tr>
<td>Length [m]</td>
<td>4,8</td>
<td>3,6</td>
</tr>
<tr>
<td>Height [m]</td>
<td>1,46</td>
<td>1,68</td>
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</tbody>
</table>

*CS-23 used as certification base*
Manufacturing
Manufacturing
Roll out
Testování podvozku
Questions?