Developments in Jet Engines: A Titanium Perspective

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TIMET

19.04 2016
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Information included within this press release describing the projected growth and future results and events constitutes forward-looking statements, within the meaning of the Private Securities Litigation Reform Act of 1995. Actual results in future periods may differ materially from the forward-looking statements because of a number of risks and uncertainties, including but not limited to the risk that the Merger with Berkshire is delayed or will not be completed and the resulting effect thereof on our future business, financial results and the price of our common stock; the effect the expenses related to the Merger may have on our operating results; the effect of business uncertainties and contractual restrictions while the Merger is pending; fluctuations in the aerospace, power generation, and general industrial cycles; the relative success of our entry into new markets; competitive pricing; the financial viability of our significant customers; the concentration of a substantial portion of our business with a relatively small number of key customers; the impact on the Company of customer or supplier labor disputes; demand, timing, and market acceptance of new commercial and military programs, and our ability to accelerate production levels to meet order increases on new or existing programs in a timely fashion; the availability and cost of energy, raw materials, supplies, and insurance; the cost of pension and postretirement medical benefits; equipment failures; product liability claims; changes in inventory valuations; cybersecurity threats; relations with our employees; our ability to manage our operating costs and to integrate acquired businesses in an effective manner, including the ability to realize expected synergies; the timing of new acquisitions; misappropriation of our intellectual property rights; governmental regulations and environmental matters; risks associated with international operations and world economies; the relative stability of certain foreign currencies; fluctuations in oil & gas prices and production; the impact of adverse weather conditions or natural disasters; the availability and cost of financing; and the implementation of new technologies and process improvements. Any forward-looking statements should be considered in light of these factors. We undertake no obligation to update any forward-looking information to reflect anticipated or unanticipated events or circumstances after the date of this document.
Engine Sourcing Trends
Engine Sourcing Trends – Post 2000

2000
- A340 – 5/6 RR
- 777-300ER GE
- A380 Alliance/RR

2010
- 747-8 GE
- 787 GE/RR
- A350 RR

2020
- A320 NEO Family CFM/P&W
- 737 MAX CFM
- Cseries P&W
- 777X GE
- C919 CFM
- E2 Jets P&W
- A330NEO RR
Historical Market Share*

1960:
- CFM
- GE
- IAE
- P&W
- RR
- Other
- Total Engines: 942

1990:
- CFM
- GE
- IAE
- P&W
- RR
- Other
- Total Engines: 1,547

2014:
- CFM
- GE
- IAE
- P&W
- RR
- Other
- Total Engines: 3,160

*based on number of engines delivered, Source: Airline Monitor April 2015
Market Share* Trend

Source: Airline Monitor April 2015
Market Share* Trend: 1960-2035

Source: Airline Monitor April 2015
Ti Challenges and Opportunities

Photos: Flight Global, MTU aviationpros.com
Middle of the Market
Oil Price Impact?

Photos: eaglefordtexas.com; dreamstime.com
Engine
Market

Market
Developments

Future
Outlook
Forecast Uncertainty

“I've just heard the weather forecast, they say it could be hot ... on the other hand it could be cold!”
Airline Monitor Build Rate Forecast

Source: Airline Monitor
Airline Monitor Build Rate Forecast

Source: Airline Monitor
Forecasting: Teal versus AM

2015 Boeing + Airbus Build Rates

2016 Boeing + Airbus Build Rates

### Airline Monitor versus OEMs
#### 20-Year Outlooks

<table>
<thead>
<tr>
<th>Aircraft Category</th>
<th>Airline Monitor</th>
<th>Boeing</th>
<th>Airbus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Jet</td>
<td>3,486</td>
<td>2,490</td>
<td>not forecasted</td>
</tr>
<tr>
<td>Single-aisle</td>
<td>26,036</td>
<td>26,730</td>
<td>22,900</td>
</tr>
<tr>
<td>Small &amp; medium wide-body</td>
<td>10,711</td>
<td>8,290</td>
<td>8,100</td>
</tr>
<tr>
<td>Large wide-body</td>
<td>935</td>
<td>540</td>
<td>1,600</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>41,168</strong></td>
<td><strong>38,050</strong></td>
<td><strong>32,600</strong></td>
</tr>
<tr>
<td><strong>Subtotal w/o RJ</strong></td>
<td><strong>37,682</strong></td>
<td><strong>35,560</strong></td>
<td><strong>32,600</strong></td>
</tr>
</tbody>
</table>

Build Rate Comparisons

Source: Boeing Current Market Outlook 2015, Airline Monitor February 2016, TIMET Internal Estimates

*OEM build rates through 2019

AM Regional Jets
AM Small & Medium Widebodies
CMO-influenced TIMET Build Rate Forecasts
OEM* Build Rates

AM Single Aisles
AM Jumbo Jets
AM Build Rate
Engines Titanium Forecast

Source: Boeing Current Market Outlook 2015, Airline Monitor, Teal, internal TIMET estimates
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