Kansas Aviation Industry: Economic Outlook and Our Future

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Vice President Operations
Bombardier Learjet
Preparing for Alternate Futures

**UP**
- Stable global economy
- Consumer confidence increasing in emerging markets
- Increasing civil transport production rates
- Anticipated corporate profit rebound
- Global air travel improving
- Orders for large biz jets increasing

**DOWN**
- Potential geo-political disruption
- Increasing deflation potential
- U.S. unemployment remains high
- Used biz jet inventory too high
- Sovereign debt crisis

**FLAT**
- Credit still tight
- Stagnant U.S. capital investment
- U.S. Consumer confidence flat/declining
Aircraft Production

Civil Large Jet Transport

Business Jets

Source: Boeing, Airbus

Growth with cycles

Source: Teal Group
Broad consensus on 2010 trough, slow climb and return to peak

Source: Honeywell 18 October 2009
Civil Jet Transport Market

Current

- Boeing
- Airbus
- Other

1,100 Deliveries

2025

- Boeing
- Airbus
- Other

1,590 Deliveries

More players entering market

Sources: Spirit
Business Jet Market

2000-2009

- Embraer
- Dassault
- Hawker Beechcraft
- Gulfstream
- Cessna

7,889 Units

2010-2019

- Embraer
- Dassault
- Hawker Beechcraft
- Gulfstream
- Cessna

10,313 Units

Competition is growing globally

Sources: Teal
Kansas Aviation Industry
Economic Impact

• Kansas contributions
  – ~~$7.1B~~ annual economic impact, leading the nation with $2,561 per capita contribution (twice that of the next most competitive state)
  – **Industry leading OEM’s** such as Cessna, Bombardier Learjet, Hawker Beechcraft, Airbus (Engineering) and Boeing (Military)
    • Kansas GA OEM’s shipped 1,708 airplanes worth **$5.8B** with exports accounting for 537 airplanes or **$2.3B (40%)**
    – Kansas aviation companies deliver over **50% of all GA aircraft** employing **17.8%** of all Kansas manufacturing employees
    – Each Kansas taxpayer saves **$525** in taxes paid in Kansas as a result of the aviation industry
    – Each aviation job generates an additional **3.6 jobs**

Sources: KS Aviation Mfg Report CEDBR 2008, Alliance for Aviation Across America, Aviation Week

Output, employment and earnings multiply
Kansas Aviation Industry Investment

THIS IS A GLOBAL COMPETITION!

Existing Global Aviation Clusters:
- South Central Kansas
- Dallas-Fort Worth
- Montreal
- Puget Sound / Seattle
- Toulouse

Other Global Competitors:
- Brazil
- Mexico
- European Union
- Russia
- Japan
- China

“It is difficult to build an aviation cluster, but easy to destroy one.” - Richard Aboulafia, Teal Group
The Importance of Aviation to Kansas and the U.S.

• Brookings Institution Report - 2010
  – Wichita’s “aviation cluster” is main source of exports
  – Aviation has increased exports to developing countries
  – General aviation manufacturing plays a critical role to meeting the Administration’s goal of boosting exports

• Flights annually out of Wichita airports:
  – 28,800 commercial
  – 36,500 business

\(^1\)Brookings Institute analysis of various data for Wichita, KS
Sustaining our Competitive Advantage

- Increase Technology Integration / Research
- Grow and Maintain a Skilled Motivated Workforce
- Invest in Research & Training for the future
  - NIAR
  - NCAT
Industry Need for Future Technology Investment

Airplane design and construction is changing rapidly

To maintain the leadership position and grow this market, we must invest.
Research Funding Distribution
2010 - 2011

Composite & Advanced Materials Design 21.6%
Composite & Advanced Materials Repair 17.4%
Increased Performance & Technology Integration 8.5%
Advanced Joining 11.8%
Protection from Environmental Effects 19%
Composite & Advanced Materials Manufacturing 14.8%
Simulation & Modeling 6.9%
The State’s investment has allowed us to leverage significant federal and industry funding into Kansas.

NIAR Investments and Leverage

9:1 return on investment

For the period 2003-2010, the research investments amounted to $211.8 million, with the breakdown as follows:

- Federal: $115 M
- State of KS: $21.8 M
- Industry: $75 M

We need to continue to invest in the technology development for our future products.
Over the past four years, $5M/year has been appropriated for aviation research. During this period, each company’s proposed high priority research programs totaled more than double that amount.

These programs were downselected or descoped to a multi-year approach to fit within the available budget.

*In the current aviation down-cycle, it is crucial our research and technology be expanded to protect our market share*
National Center for Aviation Training

• County, City, State, Aviation Manufacturers, and Federal Partnership
  • $50M+ in facility invested
  • Requires millions in infrastructure support (equipment, technology, infrastructure, curriculum & start-up)
• Manufacturing Tech Center & Aviation Training Center opened in Fall 2010

www.ncatkansas.org
Programs Launched or Planned for Launch in 2011

- Advanced Engineering
  - Manufacturing Engineering Design
  - CATIA
    - Design
    - Machining
  - Manufacturing Engineering Technician
  - Manufacturing Robotics Engineering
  - Industrial Engineering Technician
  - Quality Engineering Technician
  - Aeronautical Engineering Technician
- Mechanical Systems Technology
- Programmable Logic Controls Technician
- Nondestructive Testing
- Lean Manufacturing Process Technician
- Industrial Systems Technology
- Aerospace Quality Control
- Composite Technician
  - Fabrication Repair
- Aerospace Fiber Optics
- Project Management Certification
- Advancing Productivity, Innovation, and Competitive Success
- Six Sigma Certification
Equipment Funding Distribution
2010 - 2011

- Airframe & Powerplant: 39%
- Paint Applications & Advanced Coatings: 12%
- NCAT General: 7%
- Composites: 5%
- NDI: 6%
- Electromechanical/ Mechanical Systems: 2%
- Robotics: 8%
- Avionics: 3%
- CAD/CAM: 11%
- Machining: 7%
- NCAT General: 7%
- NDI: 6%
- Electromechanical/ Mechanical Systems: 2%
- Robotics: 8%
- Avionics: 3%
- CAD/CAM: 11%
- Machining: 7%
## NCAT Training Projections (In Thousands)

<table>
<thead>
<tr>
<th>TRAINING CURRICULUM</th>
<th>Initial Investment</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tr>
<td>CAD/CAM</td>
<td>$670</td>
<td>$554</td>
<td>$350</td>
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<td>Composites</td>
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<td>$850</td>
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<td>Machining</td>
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<td>$371</td>
<td>$570</td>
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<tr>
<td>Paint Application/ Advanced Coating</td>
<td>$800</td>
<td>$586</td>
<td>$950</td>
<td>$650</td>
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<tr>
<td>Electrical/ Mechanical Systems</td>
<td>$750</td>
<td>$113</td>
<td>$700</td>
<td>$470</td>
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<tr>
<td>Avionics</td>
<td>$650</td>
<td>$139</td>
<td>$850</td>
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<tr>
<td>Airframe/Powerplant</td>
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<td>$1,922</td>
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<tr>
<td>NDT</td>
<td>$850</td>
<td>$279</td>
<td>$570</td>
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<tr>
<td>Welding</td>
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<td>$450</td>
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<tr>
<td>Quality Control</td>
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<td>$600</td>
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<td>Aviation Interiors</td>
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<td>$700</td>
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<tr>
<td>Mechanical Design</td>
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<tr>
<td>Facilities</td>
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<td>$357</td>
<td>$510</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$68,150</strong></td>
<td><strong>$5,000</strong></td>
<td><strong>$10,000</strong></td>
<td><strong>$10,000</strong></td>
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Growing the Kansas Economy
Success Factors

- Largest economic sector in Kansas is **Manufacturing**
- Retain existing aviation industry – strong companies and suppliers
- Grow our position as global leader in aviation research = **NIAR**
- Flexible, business-driven, high-tech training to meet future skilled workforce needs = **NCAT**
- Stronger Kansas economy and provide stability to state budget
We request your support for combined aviation industry request of $10M for aviation research and $10M in aviation-related training in the current legislative session.
Kansas Aviation Jewel
What’s it Worth?

**Jobs:**
- 119,000 incl. indirect

**Wages:**
- $67,440 avg.
- $2.3B total
- $5.2B incl. indirect

**Corporate/Employee:**
- $5.3M to United Way = 35%
- 10,000’s of volunteer hours

~22% of Kansas economy

Sources: U.S. Bureau of Labor Statistics
W.S.U. CEDBR
Sustaining our Competitive Advantage

Competitive cost structure
Community strategy/plan
Protect the Kansas aviation jewel