Kansas Aviation Industry: Economic Outlook and Our Future

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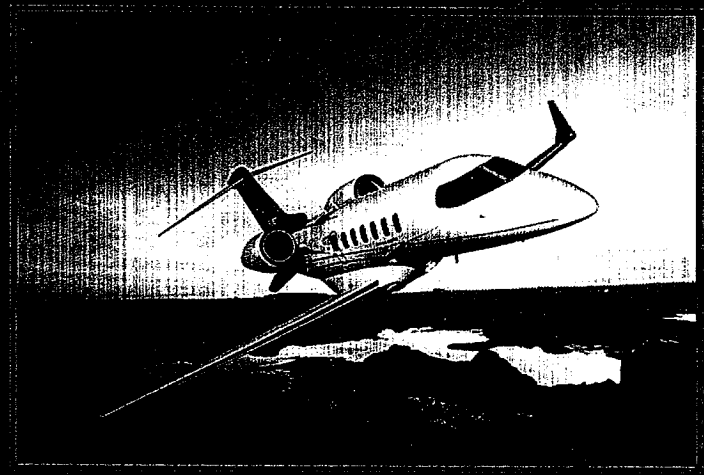
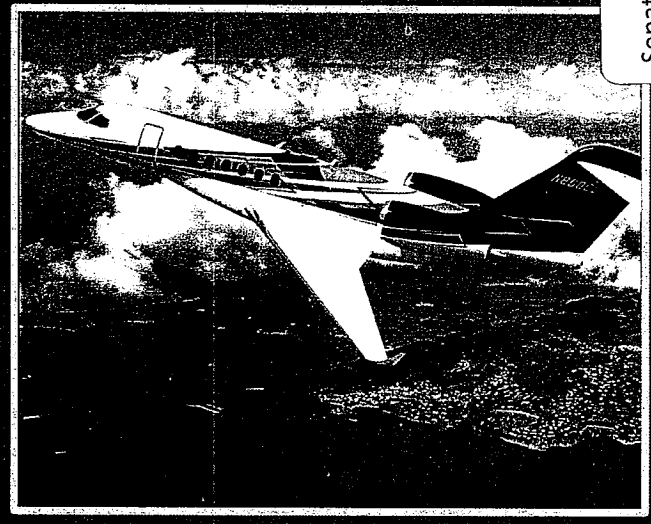
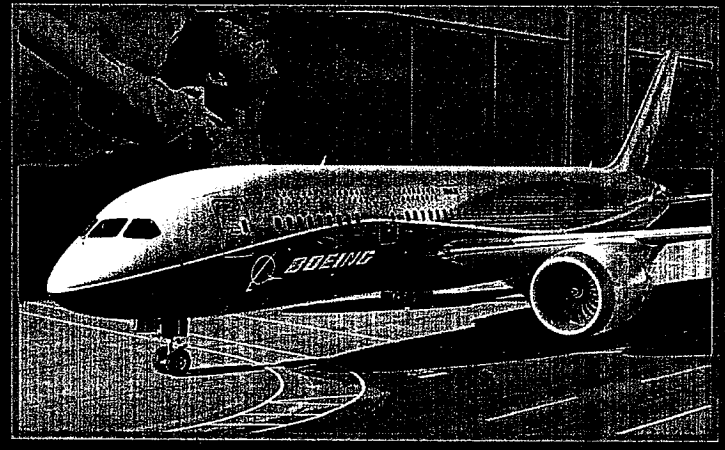
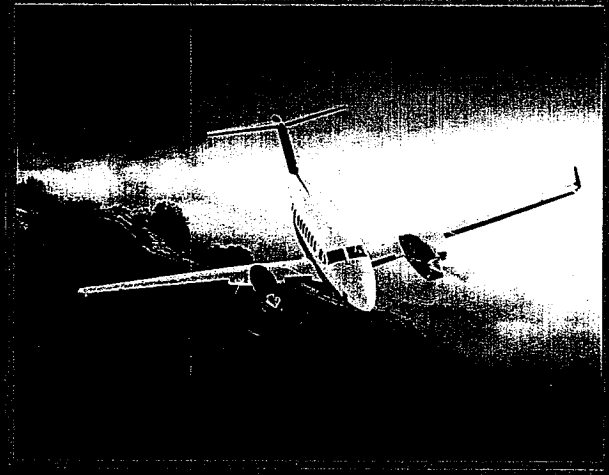


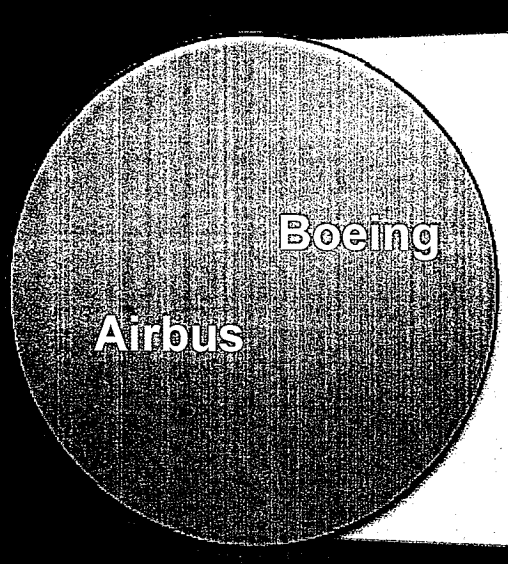






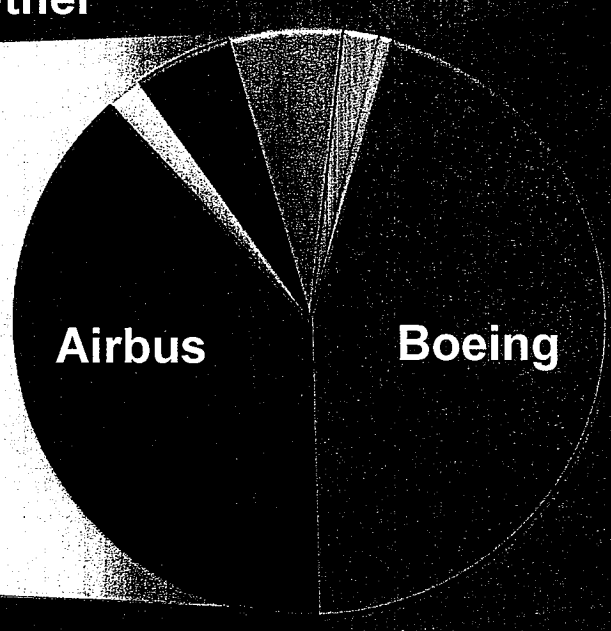
Civil Jet Transport Market

Current



1,000 Deliveries

2022

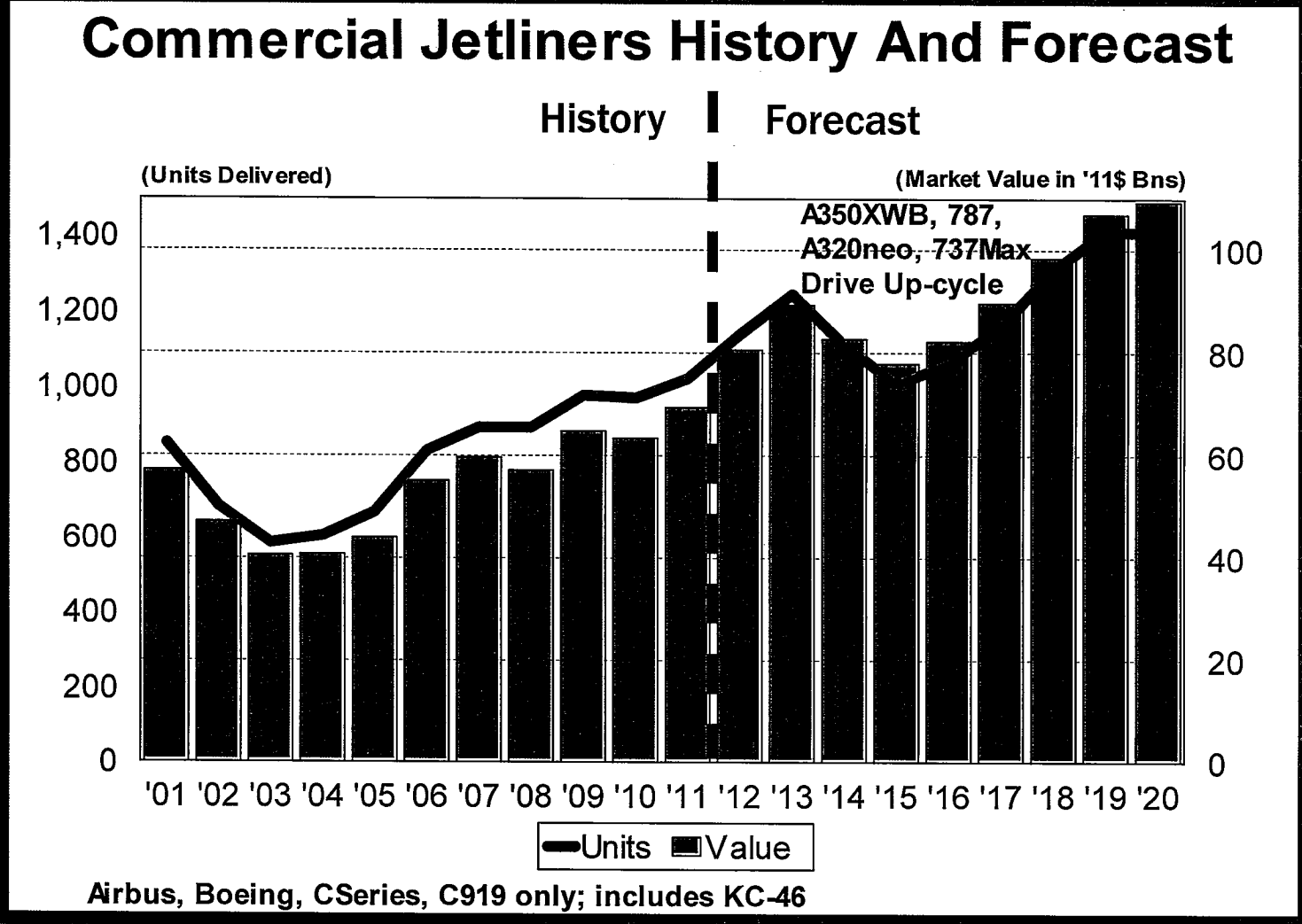


1,550 Deliveries

Sources: Spirit

More players entering market

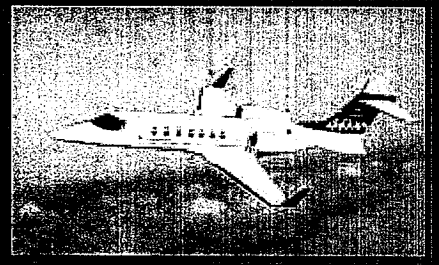
Industry Review and Outlook

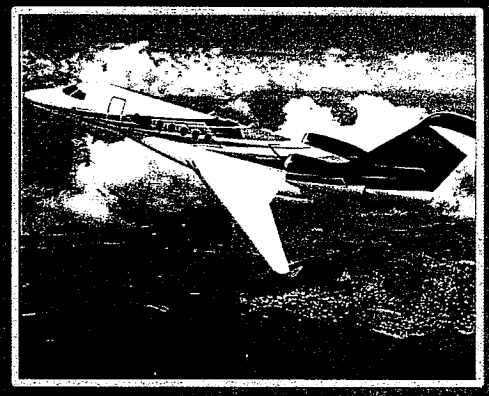


Commercial jetliner market continues strong through 2013

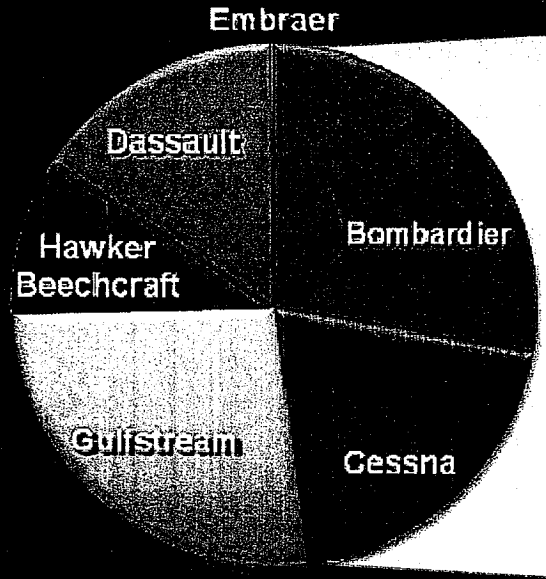
Source: *Teal Group 2011*

Business Jet Market



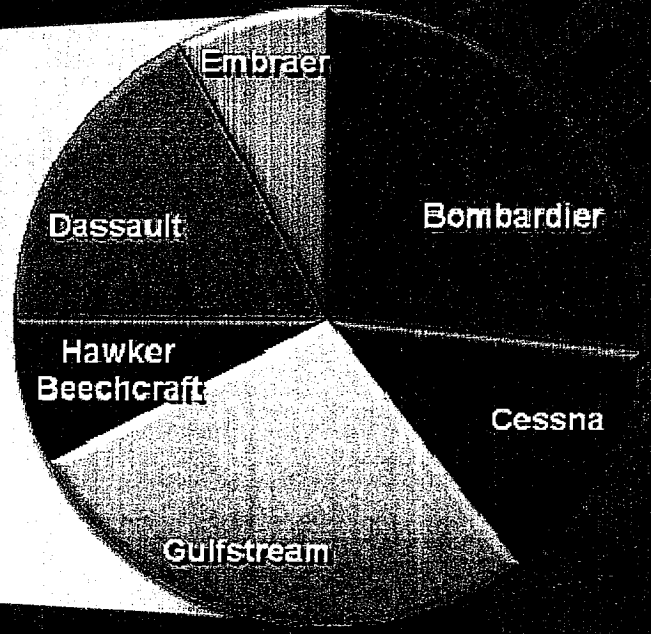


2000-2009



7,889 Units

2010-2019



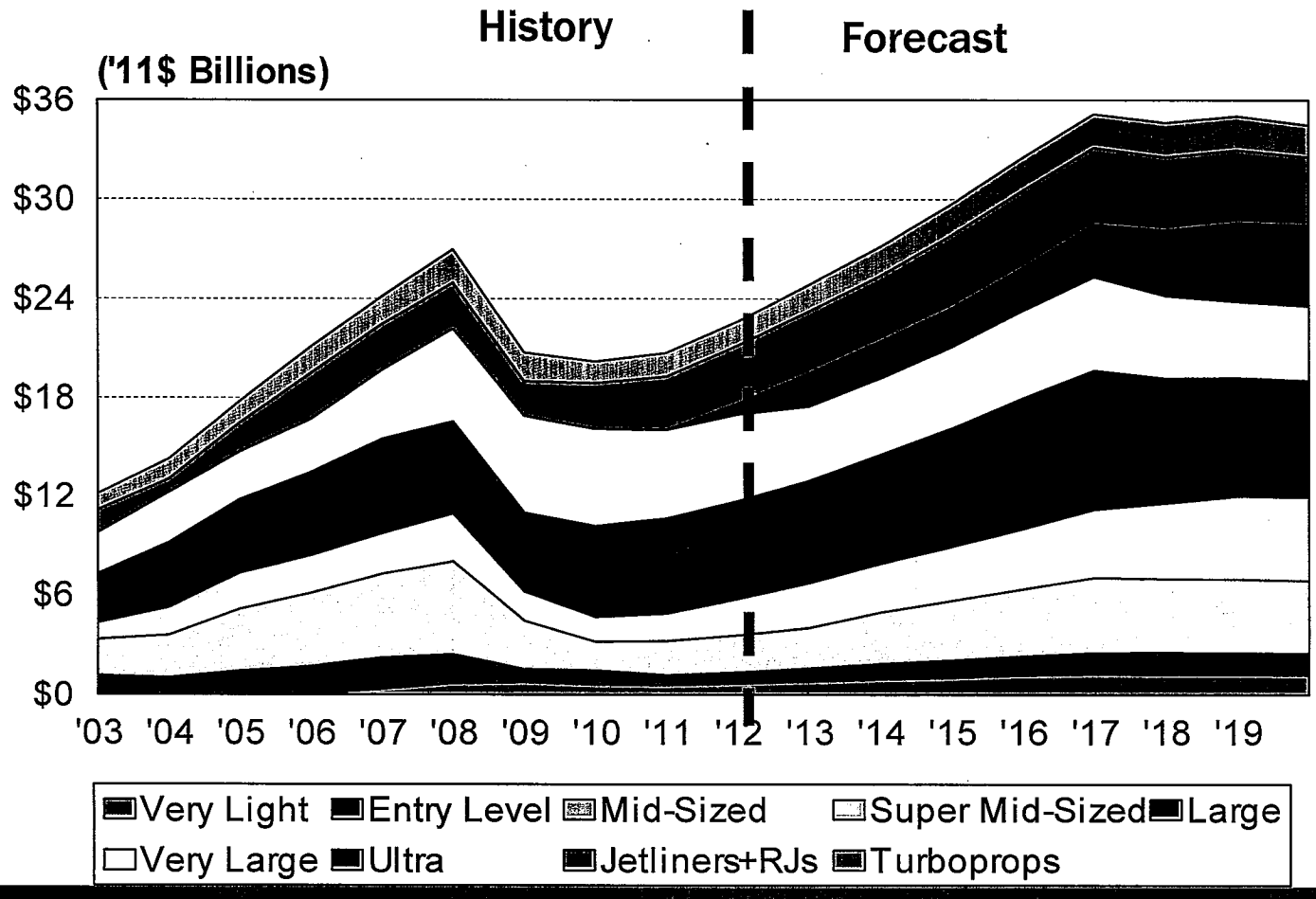
10,313 Units

Competition is growing globally

Sources: Teal

Industry Review and Outlook

Business Aircraft Market By Class



Business Aircraft should begin gradual return post 2011

Source: *Teal Group 2011*

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, Beechcraft and Airbus (Engineering) along with large tier I airframe supplier Spirit AeroSystems
  - Kansas aviation companies deliver over **50% of all GA aircraft** employing **20%** of all Kansas manufacturing employees
  - Each Kansas taxpayer saves approximately **$525** in taxes paid in Kansas as a result of the aviation industry
  - Each aviation job generates an additional **3.1** jobs

Output, employment and earnings multiply

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

Kansas Aviation Industry Investment

THIS IS A GLOBAL COMPETITION !

Existing Global Aviation Clusters:

- South Central Kansas
- Dallas-Fort Worth
- Montreal
- Puget Sound / Seattle
- Toulouse

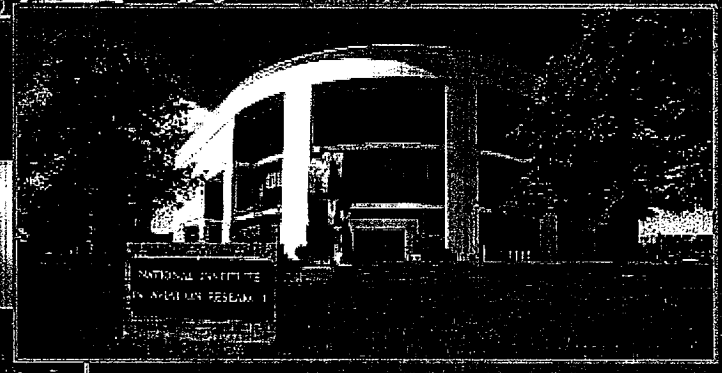
Other Global Competitors:

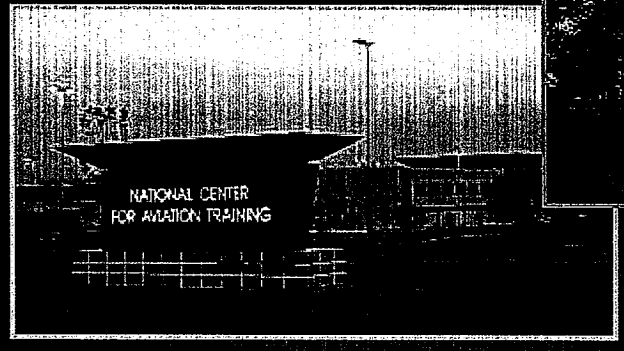
- Brazil
- Mexico
- European Union
- Russia
- Japan
- China
- Canada

"It is difficult to build an aviation cluster, but easy to destroy one." - Richard Aboulafia, Teal Group

Sustaining our Competitive Advantage

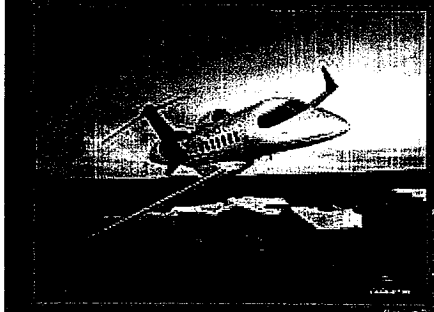
- Increase Technology Integration / Research
- Grow and Maintain a Skilled Motivated Workforce
- Invest in Research & Training for the future
  - NIAR
  - NCAT

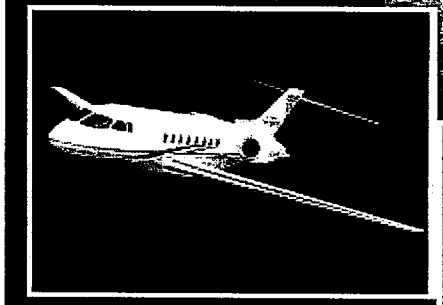


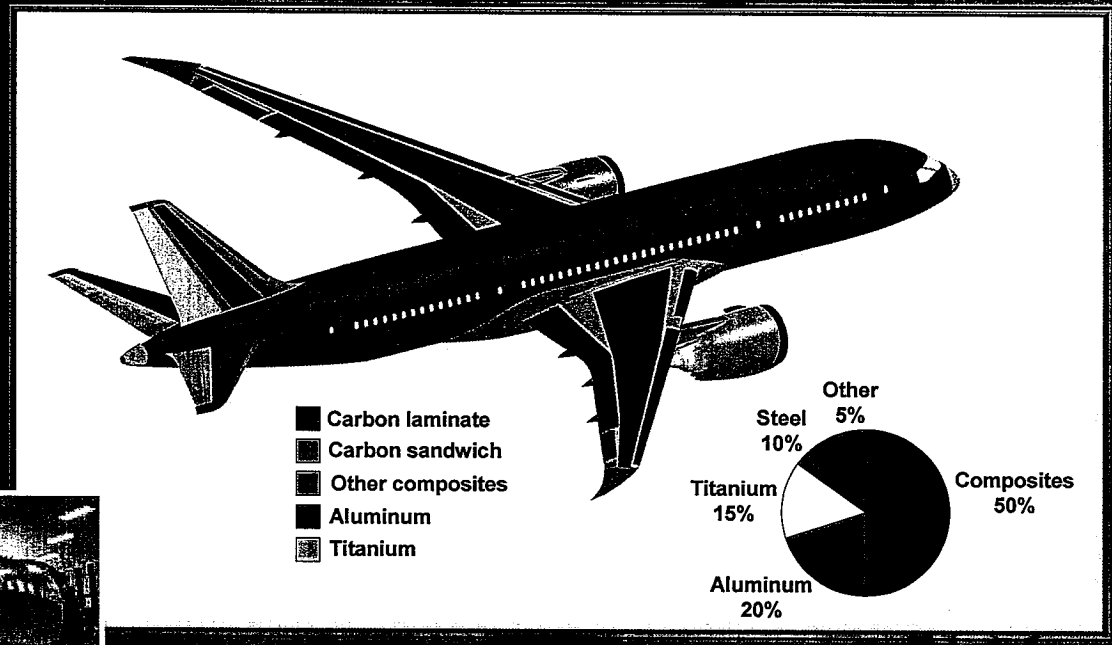


Industry Need for Future Technology Investment

Airplane design and construction is changing rapidly



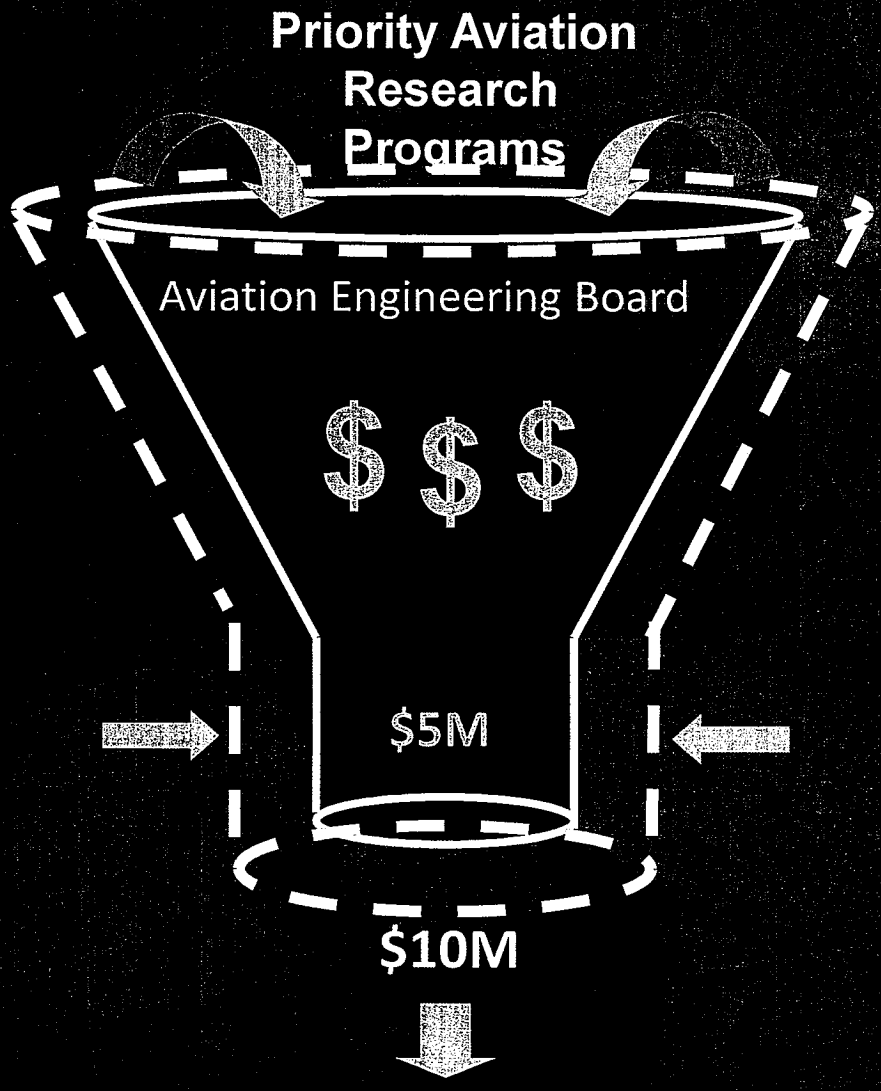




To maintain the leadership position and grow this market, we must invest.

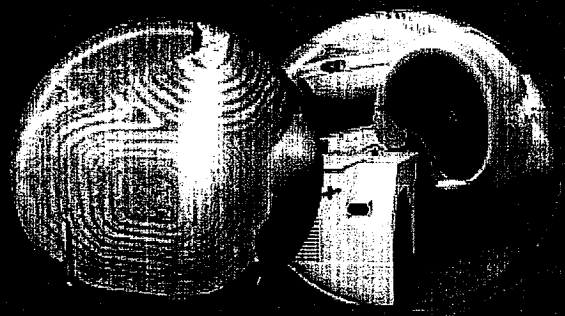
Research Program Overview

- Over the past five years, $5 million/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 cycle, it is crucial that our research and technology be expanded to protect our market share.***

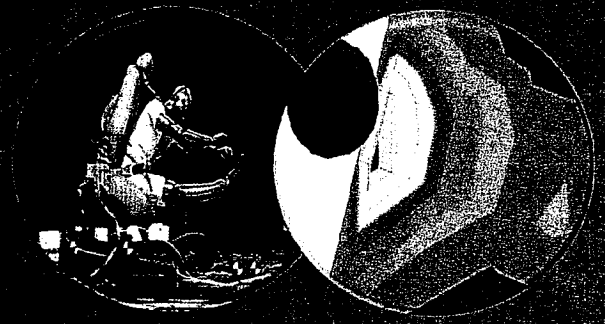


Research Funding Distribution: 2012 - 2013

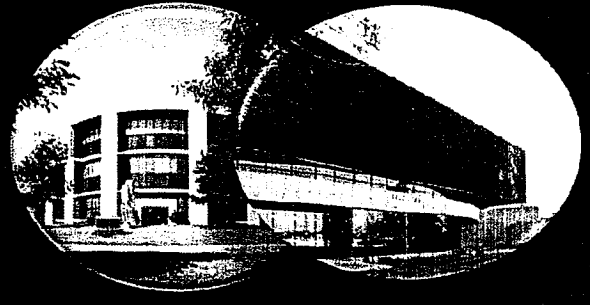
Aircraft Airframe Characterization 41.4%



Composite & Advanced Materials Research 11.0%

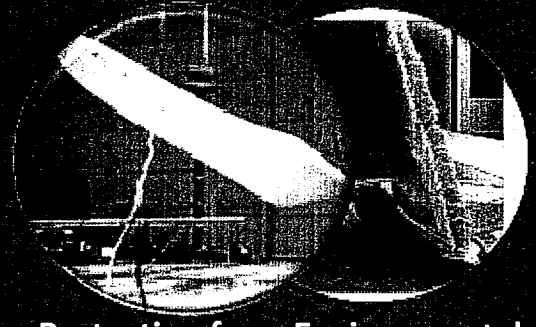


Crashworthiness 4.6%

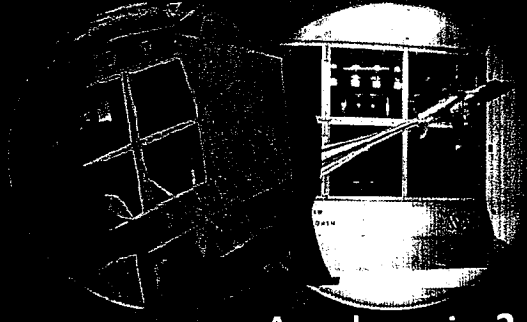


Infrastructure 17.8%

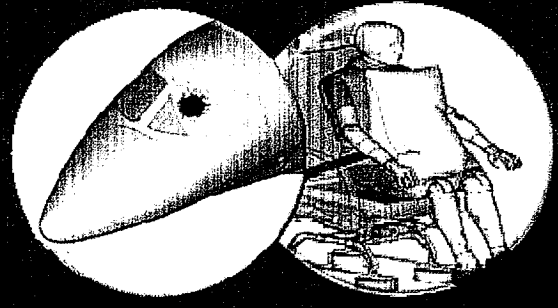
NIAR
National Institute for Aviation Research
Wichita State University



Protection from Environmental Effects 17.0%



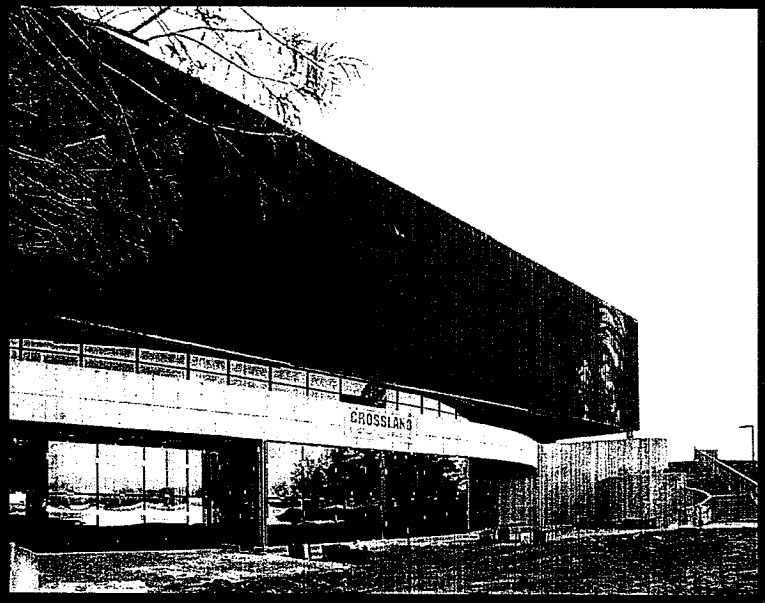
Aerodynamics 2.4%



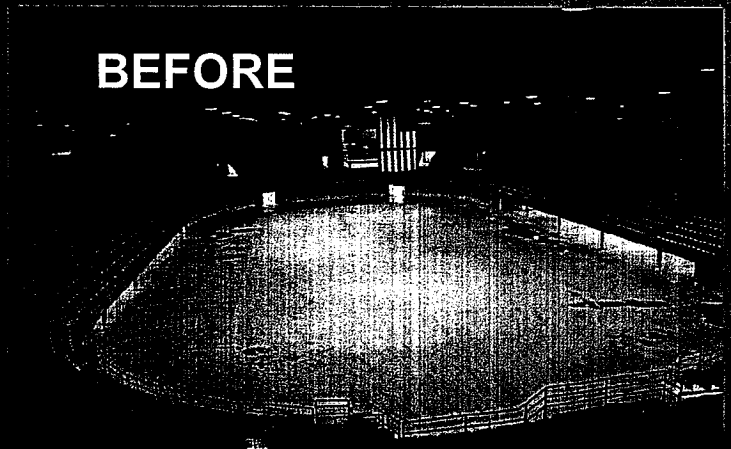
Simulation & Modeling 7.0 %

NEW Aircraft Structural Test & Evaluation Center

This investment has allowed us to plan for a future in which we will continue to be the world leader in aviation research



BEFORE



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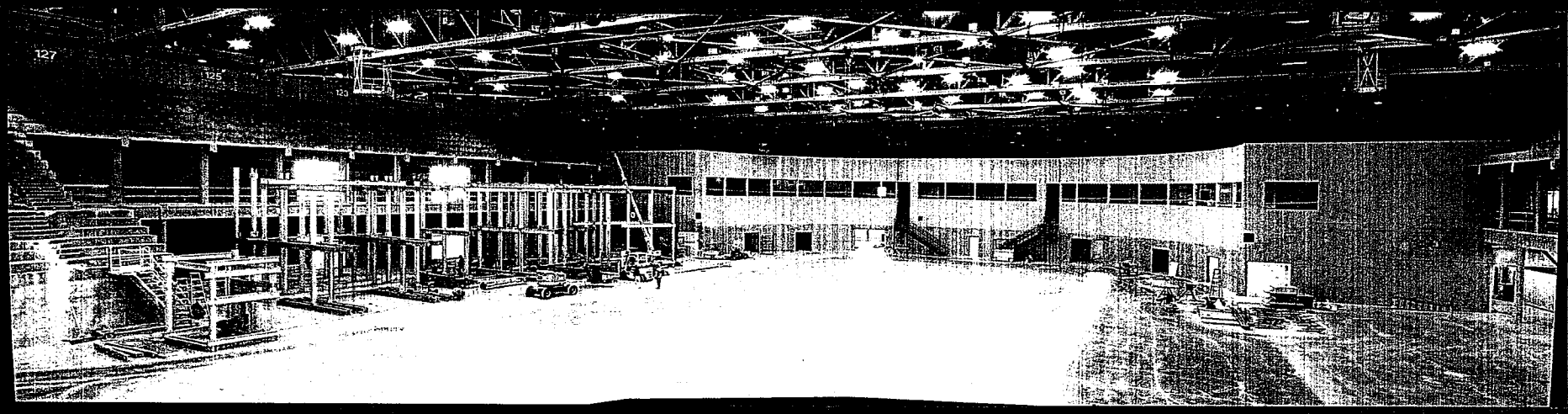
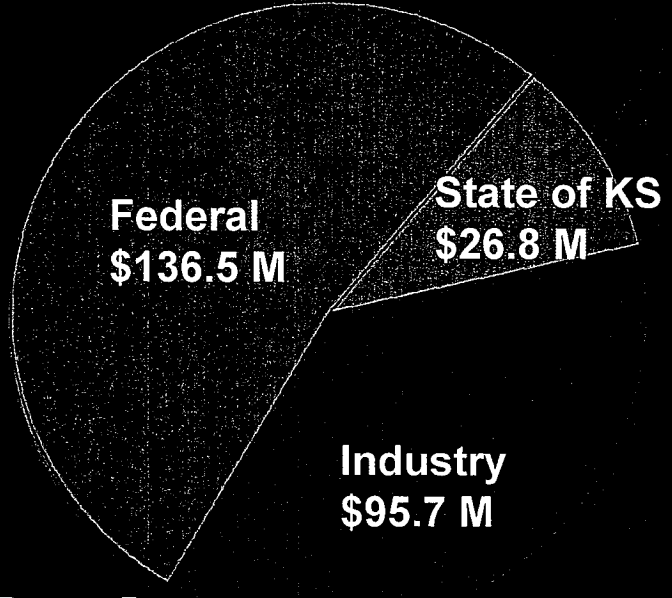


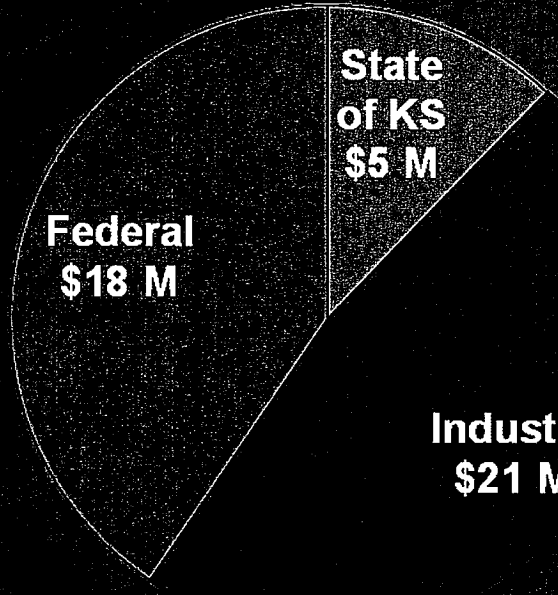
NIAR Investments and Leverage

The State's investment has allowed us to leverage significant federal and industry funding into Kansas

Research Investments
2003-2012
$304 million



Research Investments
FY12
$45.5 million



9:1

return on investment

We need to continue to invest in technology development for future products.

NIAR Investments and Leverage

Aeronautical R&D Expenditures FY10

According to the National Science Foundation's National Center for Science and Engineering Statistics

1. Georgia Institute of Technology *	$55 million
2. Utah State University	$53 million
3. Wichita State University	$41 million
4. University of Colorado	$41 million
5. Texas A&M University	$20 million
6. University of Maryland, College Park	$20 million
7. Massachusetts Institute of Technology	$20 million
8. The University of Alabama-Huntsville	$17 million
9. Pennsylvania State University	
10. Princeton University	

**The Johns Hopkins University is listed as #1 with $99 million, but this includes Applied Physics Laboratory expenditures.*

The State's investment has allowed WSU/NIAR to become a national leader in aviation research

WSU/NIAR also leads the nation in the percentage of industry funding it receives for R&D

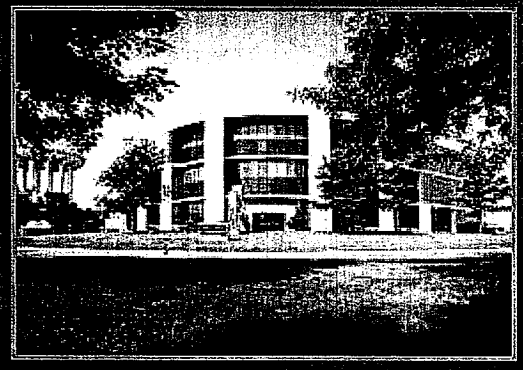
Percentage of Industry Funding

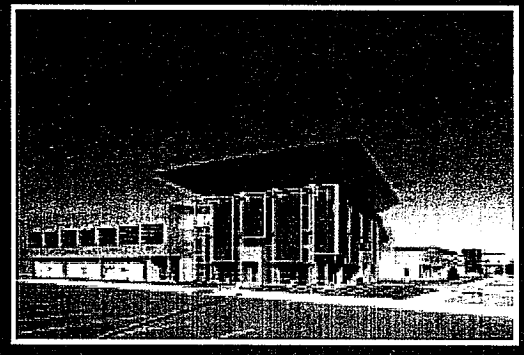
According to the National Science Foundation's National Center for Science and Engineering Statistics FY2010

1. Milwaukee School of Engineering	48%
2. Wichita State University	44%
3. Columbia University Teachers College	43%
4. Albany College of Pharmacy	39%
5. Weber State University	39%
6. Jacksonville State University	38%
7. University of Tulsa	36%
8. University of the Pacific	33%
9. New Mexico Highlands University	33%
10. Medgar Evars College, New York	32%

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

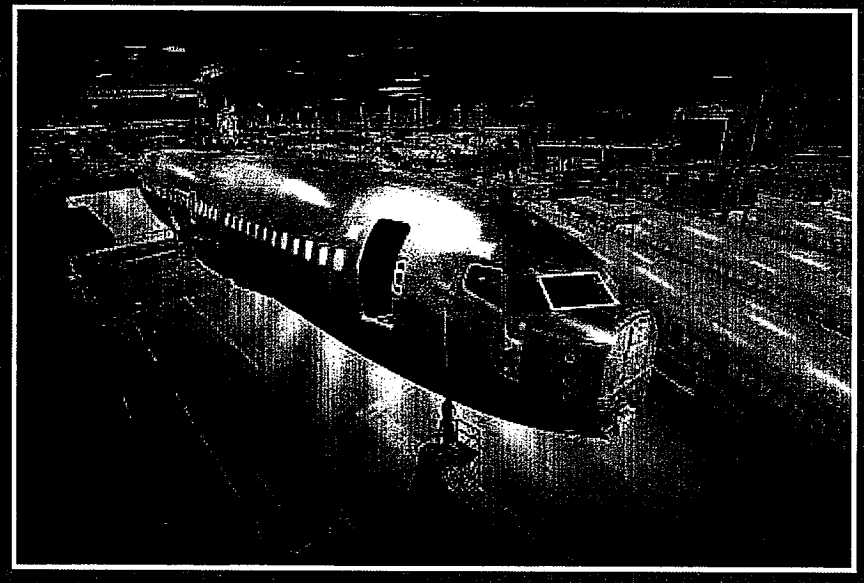




Kansas Aviation Jewel
What's it Worth?

Jobs:

- 119,000 incl. indirect



Wages:

- $73,224 avg.
- $2.357B total
- $5.2B incl. indirect

Corporate/Employee:

- $5.3M to United Way = 35%
- 10,000's of volunteer hours

~20% of Kansas economy

Sources: U.S. Bureau of Labor Statistics
W.S.U. CEDBR

Sustaining our Competitive Advantage

Protect the Kansas aviation jewel