Trends & Challenges

- Declining Support for Defense Spending
- Defense Budgets - Product Implications
- Globalization of the Supplier Base
- Aversion to Risk
- Future Shortage of Skilled Workers?

Dynamic industry requires dynamic response
A&D Economic Contributions

Providing Quality Employment

Keeping America Competitive around the Globe

Hundreds of Thousands of Jobs

Military Aerospace Exports M ($B)

Billions in Defense Exports

Competitive Compensation

- Aerospace R&D Investment 13.3% of Sales Versus 2.9% Industry Average
- Average Aerospace Compensation $38K per year with A&D at $62K per year
- Significant Pressure for Global Suppliers Fueled by Many Factors, Wages Being One

(AIA, Bureau of Labor Statistics, National Science Foundation)
Defense Investment as a Percentage of Total Federal Budget

DoD Budget as % of Total Federal Budget 1940-2011 (DOD)

Average %
- Korea: 35.3
- Vietnam: 46.2
- Cold War: 38.9
- GWOT: 18.3

Defense Investment as a Percentage of Gross Domestic Product

DoD Budget as % of GDP 1940-2009 (DOD)

Average %
- Korea: 6.7%
- Vietnam: 8.3%
- Cold War: 7.4%
- GWOT: 3.8%

Reduced Demand - Reshaped the Primes
A&D Industry Make-Up

- Typically primes perform 30% of work content
- Critical systems and materials suppliers
- Companies in all 50 states & worldwide
- Includes small, disadvantaged and minority-owned businesses
- Experience base across industry being lost at an alarming rate
- Cost concerns have reduced capability

Globalization Has Significantly Changed Supplier Landscape
# The Challenge of People

Declining Experience Levels in Military Aircraft Programs  
(Vertical Bars: Military Aircraft Programs Starts, Horizontal Bars: Typical 40 Year Career Span)

<table>
<thead>
<tr>
<th>40 Year Career Span – Multi Starts</th>
<th>Retired</th>
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<tbody>
<tr>
<td>Multi Program Experience</td>
<td>Retired</td>
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<tr>
<td>6+ Program Experience</td>
<td>Retired</td>
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<tr>
<td>1-2 Program Experience</td>
<td>Close to Retirement</td>
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<tr>
<td>1 Program Experience</td>
<td>Very Few</td>
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<tr>
<td>The Next Gen Engineer</td>
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*The Next Gen Engineer*
LM Aero Engineering Workforce

Age Distribution

Chief Eng
Test Labs
Flight Ops
Signature Tech
Airframe Design
Avionics
Air Vehicle Science
Software Engr
Systems Engr
Process & Tools
Engr Integ Stff
Engr VP

Eligible for Retirement: 15.2% and Growing
Average mathematics scale scores on the long-term trend National Assessment of Education Progress (NAEP), by age

Scores of High School Graduates in Math Have Remained Relatively Flat

Source: U.S. Depart. of Education
Back up
A&D Workforce Dilemma

A Shrinking Pool of Skilled Labor?

As the A&D Workforce is Expected to Decline

Workforce Age Distribution

- Under 35: 23%
- 35-49: 39%
- Over 50: 38%

Workforce Eligible to Retire by 2013

- Engineering: 16%
- Research & Development: 19%
- Manufacturing: 13%
- Program Management: 18%

New Science & Engineering Talent

Science and Engineering as % of Total U.S. Undergraduate Degrees

Declining Popularity of Science and Engineering Among Undergraduates

(Aviation Week)