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

- Hundreds of Thousands of Jobs

Keeping America Competitive around the Globe

- Billions in Defense Exports

Competitive Compensation

- Production Workers: Average Hourly Earnings (08$)
  - Leisure & Hospitality: 11
  - Trade, Transport & Utilities: 16
  - Manufacturing: 18
  - Education & Health: 19
  - Financial Activities: 20
  - Professional & Business Services: 21
  - Construction: 22
  - Aerospace: 30

- 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)

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%

Defense Investment Implications – Industry Consolidation

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)

40 Year Career Span – Multi Starts
Multi Program Experience
6+ Program Experience
1-2 Program Experience
1 Program Experience
Very Few
Close to Retirement
Retired

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 Staff
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
Create and Deliver Superior Products Through Innovative Minds

Solutions

Missions

Technology

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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: 38%
- Over 50: 39%

Workforce Eligible to Retire by 2013

- Engineering: 15%
- Research & Development: 20%
- Manufacturing: 25%
- Program Management: 30%

New Science & Engineering Talent

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

Declining Popularity of Science and Engineering Among Undergraduates


(Aviation Week)