Titanium Industry Representative ITA Panel

Moderator:
Dawne Hickton, RTI International Metals, Inc

SPEAKERS:
Larry Lasoff, Kelley Drye & Warren
"Embracing supply chain security: securing the strategic material supply chain"

Kevin Horgan, DeKieffer & Horgan
"Titanium’s role in counterfeits and trade issues"

Jeff Green, J.A. Green & Company
"Shift from “Buy American” to an embrace of supply chain security"
Embracing Supply Chain Security: Securing the Strategic Material Supply Chain

Larry Lasoff
Kelley Drye & Warren, LLP
Statement of the Problem

• Securing the defense supply chain has become a focal point of the “industrial policy” debate.

• Industry and government have fundamental disagreements on how best to achieve that objective.

• DoD supply chain management has been severely criticized in the past. Indeed, supply chain management has been on GAO's list of high-risk federal government programs since 1990.
Statement of the Problem (cont.)

• Key weaknesses, according to GAO, have included:
  • Ineffective management
  • Problems in accurately predicting demand for materials and spare parts; and
  • Lack of a comprehensive, integrated strategy for addressing and resolving supply chain management problems.
Other dimensions to the problem include:

- Inordinate focus on downstream items (e.g. weapons systems) to the exclusion of upstream components or material suppliers.
- Inadequate analysis of upstream sectors
- General tension between the Department and the upstream supply chain on policy issues. Tensions have exacerbated as cost pressures increase.
Specialty Metals Industry Approach to the Problem

• Domestic Sourcing Requirement -- Specialty Metals Amendment

• Research & Development: Consortium Approach (opportunities for partnership with U.S. Government)

• New Investment in the U.S. (Titanium sector as a model).
Government Approach to Supply Chain Security

- Globalization of the supply chain (unrestricted access to raw materials, notwithstanding reliability of the source)
- Limitations on the use of domestic sourcing requirements. Continued conflicts between DoD and specialty metals sector on implementation (e.g. definition of “produced”)
- Shift to commercial item/COTS sourcing practices
Tools to Safeguard the Supply Chain: Title I of the Defense Production Act

• Title I of the Defense Production Act of 1950 authorizes the President to require preferential treatment in the sourcing of national defense programs.

• Title I is implemented through the establishment of the Defense Priorities and Allocations System (DPAS), which assures timely availability of industrial resources to meet current national defense or emergency prepared needs, through the rated order program.
Tools to Safeguard the Supply Chain: Title III of the Defense Production Act

- Title III of Defense Production Act is intended to "create assured, affordable, and commercially viable production capabilities and capacities for items essential for national defense."
- Increase the supply, improve the quality, and reduce the cost of advanced materials and technologies needed for national defense;
- Title III activities serve to lower defense acquisition and life-cycle costs and to increase defense system readiness and performance through the use of higher quality, lower cost, technologically superior materials and technologies.
- Beryllium Model. Is this viable for titanium?
Tools to Safeguard the Material Supply Chain: National Defense Stockpile

- National Defense Stockpile is an area that holds out great potential for addressing supply chain concerns, particularly in the metals sector.

- DoD is revisiting some of the basic assumptions underlying the stockpile program, including what materials to store, what form, and where and how to store them.
Tools to Safeguard the Material Supply Chain: Controls on Export of Technology

• Emphasis on controlling the exports of products as opposed to technology is misplaced.

• Are the interests of the supply chain best served by allowing U.S. companies to transfer technology in an effort to gain access to foreign markets or to reduce costs.
Tools to Safeguard the Material Supply Chain: Analytical Requirements

• Annual Report to Congress on Industrial Capabilities. (10 USC 2504). Identification of each program designed to sustain specific essential technological and industrial capabilities and processes of the national technology and industrial base.”

• Strategic Material Protection Board (10 USC 187). Purpose is to determine the need to provide a long term secure supply of materials designated as critical to national defense.

• Sector by Sector/Tier by Tier (S2/T2). Ongoing
Looking Ahead

• Congress will be involved and may prescribe new approaches (e.g. rare earths)

• Revisit existing legislative authority: Is it adequate? (e.g. stockpile, Defense Production Act). Are we only preparing for war?

• Continued evolution in the procurement system.
COUNTERFEIT PARTS IN THE SUPPLY CHAIN

J. Kevin Horgan

deKieffer & Horgan
The Problem

• In 2010, the Department of Commerce’s Bureau of Industry and Security published a report finding that 39 percent of the surveyed companies encountered counterfeit electronics over the 2005-2008 survey reporting period. (Source B)
• The F.B.I. and the Pentagon “Operation Cisco Raider” led to 15 criminal cases and the discovery of over 3,500 counterfeit Cisco network components, involving products purchased by military agencies and contractors, as well as electric companies. (Source C.)
• Counterfeit electronics can be fabricated to include an electronic Trojan horse with hidden circuitry that allows entry to gain entry or extract data from a system, or contain a hidden “kill-switch” to disable an electronic system. Suspicion that F-35 fighter jet data was siphoned from the Pentagon in a recent incident (Source C).
The Problem Continued….

• The Counterfeit parts issue is magnified with the outsourcing trend.

• Complex equipment, such as airplanes, require coordination among thousands of suppliers to complete final assembly.

• Controlling and maintaining quality has become extremely complicated as the supply chain becomes more “clouded” far down the supply chain (Source C)
What is a Counterfeit

• “...a product produced or altered to resemble a product without authority or right to do so, with the intent to mislead or defraud by presenting the imitation as original or genuine.” (Source A) -- AIA

• Broad enough to include parts falsely certified to meet required specifications.
Why Act?

• Suppliers who knowingly misrepresent the identity or quality of parts have the ability to “seriously disrupt the Department of Defense supply chain, delay missions and affect the integrity of weapons systems.” Id.
• Valuable Department of Defense (DoD) data, or a company’s trade secrets, could become compromised.
• The U.S. Chamber of Commerce has estimated that the counterfeiting problem costs the global economy over $600 billion per year, accounting for over 7% of global merchandise trade. (Source C 1)
• Unlike counterfeit electronic parts, survey data on mechanical parts and materials in the aerospace and defense industry is sorely lacking. This is an issue of grave concern, given unique conditions that make aerospace and defense products susceptible to counterfeiting. (Source A 7)
Aerospace and Defense Products’ Susceptibility to Counterfeiting

• Aerospace and defense products are usually designed for a long life cycle. For example, the B-52 went into service in 1955 with an anticipated retirement date of 2040. (Source A 7)

• Because the technology that goes into these products changes rapidly, supporting these products throughout their lifecycles often requires the use of parts that may no longer be available from the OCM or other authorized channels. These parts must then be procured through independent distributors or brokers. (Source A 7)

• Since brokers and independent distributors often have a wide range of sources, they are often the victims of counterfeit components, which they may unwittingly transfer to DoD and its equipment manufacturers. (Source C 5)

• Implementing Countermeasures can be difficult. Although counterfeit parts may pose the greatest risk to aerospace and defense programs in cost, safety and mission success, the aerospace and defense industry is not necessarily the largest consumer of these parts. This lack of leverage can make the task of mitigating risks difficult and expensive (Source A8)
So…..

- Mitigating the aforementioned risk will require a concerted effort among OCMs, OEMs, brokers and the Government.

- Each level of the supply change should take steps to **detect, remove and destroy** counterfeit/defective goods.
What Original Equipment Manufacturers Can Do (Source C 4)

• Potential suppliers should be assessed for the risk of providing counterfeit parts,
• A list of approved suppliers should be maintained. (Source A 11).
• Companies need to “flow down” authentication requirements to their subcontractors to better ensure that they have appropriate controls and security in place.
• Retain photographs of authentic parts and x-ray patterns they use for comparison of incoming inspection.
• Avoid Desperation Purchases - Monitor inventory positions and market conditions, so that extra inventory can be bought in time to avoid buying it from “riskier” sources
What Original Equipment Manufacturers Can Do Cont’d (Source C 4)

• Develop a component quality plan that assures detection of counterfeit parts, including minimum inspection and test requirements. (Source A 18)

• Have a documented process to report suspected counterfeit product to customers, internal organizations and government reporting organizations such as GIDEP. (Source A 19).

• Work with the government to find means of disposing of counterfeit parts other than from returning them to the source, such as having a government agency collect and destroy them. (Source A 15-16)
What Original Component Manufacturers Can Do

- Provide customers with information that can assist them in verifying authenticity of a component, including authentic date codes, lot codes, serial numbers, accepted part markings.

- Develop and conduct training for employees in the areas of procurement, detection, reporting and disposition of counterfeit parts. A web-based training course, CLL032, is available at the Defense Acquisition University website.

- Have adequate controls for scrap material.
  - This is extremely important, as there have been many documented cases of rejected parts making their way out of factories and into the gray market. (Source C 4)
What Can Distributors and Brokers Do?
(Source C 5)

• Train all personnel that handle the parts to identify suspect product.

• Review industry comments on suppliers and set up appropriate precautions.

• Maintain an approved supplier list, preferably including a risk ranking process.

• Review information about past problems on GIDEP.

• Maintain a database of items that have been identified as counterfeit to ensure problems aren’t repeated.
What the Government Can Do

• Develop a comprehensive Qualified Suppliers List for Distributors (QSLD) (Source A 12).

• Disseminate reports of counterfeit parts.

• Develop a process that establishes intellectual property vaults, administered by an independent third party, and that contains the data required to produce components that have become obsolete. This data would be available for use by U.S. manufacturers that have been identified as “trusted sources” for these components.
What the Government Can Do Cont’d

• Expand the Customs-Trade Partnership Against Terrorism (C-TPAT) program to include a “Trusted Importer Program”.

• Create an independent “counterfeit repository” to collect, store and destroy counterfeit goods.

• Support changes to the U.S. Federal Acquisition Regulations, which currently encourages government agencies to award contracts to the company who offers the lowest price and does not look at other parameters such as quality performance, source selection, and supply chain traceability.
What Everyone Can Do: Use GIDEP

- The Government Industry Data Exchange Program (GIDEP).
- A database where member companies and the government can store, access, and share information about suppliers and components.
- GIDEP contains information on equipment, parts, and assemblies which are suspected to be counterfeit.
- GIDEP members provide fact-based reports on items received which, after visual inspections and, in many cases, extensive testing and analysis, are suspected to be counterfeit.
- GIDEP reports allow participating companies and agencies to actively screen their inventories for items which have been identified as counterfeit.
GIDEP Success Story

- NASA JOHN C. STENNIS SPACE CENTER - FAA UNAPPROVED PARTS NOTIFICATION, NON-CONFORMING MS AND NAS O-RINGS SOLD WITH ALTERED MATERIAL CERTIFICATIONS.

- Culled discrepant o-rings avoiding a potential loss estimated at $120,000 had this corrective action not been implemented.
Success Story = Failure Experience

- Failure is the Best Teacher.
- Even Better to Learn from Someone Else’s Failure.
- Data Exchange.
Sources

- **Source A:** Aerospace Industries Association, Counterfeit Parts-Integrated Project Team (AIACPT). Aerospace Indus. Ass’n, Counterfeit Parts: Increasing Awareness and Developing Countermeasures 10 (2011).


Sources Cont’d


Jeff Green, J.A. Green & Company
Focus on “Buy American”

• Buy American Act enacted as an effort to protect American industry

• Most recent amendment to Buy American:  

  **American Recovery and Reinvestment Act of 2009**

  **BUY AMERICAN CLAUSE:**

  “None of the funds appropriated or otherwise made available by this Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States.”
Historic Focus on “Buy American”

• Specialty Metals Clause added in 1973

• Recent modifications
  – FY07 NDAA – 10 U.S.C. 2533a/2533b
    • Textiles and specialty metals split
    • 100% compliance required
  – FY08 NDAA – Compromise
    • Market basket/co-mingling allowed
    • COTS exception
    • 2% de minimis exception
    • National security exception
  – FY11 NDAA
    • Review of definition of “production” required
Supply-Chain Security Beyond Specialty Metals

- FY07 National Defense Authorization Act
  Establishment of Strategic Materials Protection Board

- FY10 National Defense Authorization Act
  Call for report on rare earth materials in the domestic supply chain

- FY11 National Defense Authorization Act
  Required the SecDef to determine which rare earth materials are critical to national security and develop a plan to establish a domestic supply chain for those by the end of 2015
Supply-Chain Security Beyond Specialty Metals

Strategic Materials Protection Board (“SMPB”)

- 2008 SMPB - Specialty metals, as defined in 10 U.S.C. 2533b, are not ‘materials critical to national security’ for which only a U.S. source should be used; and there is no national security reason for the Department to take action to ensure a long term domestic supply of these specialty metals.

- FY11 NDAA (2010) redefines “materials critical to national security” as materials upon which production/sustainment of military equipment depends and supply of which could be restricted by events outside the control of the US Government

- 2010 SMPB not yet convened
Supply-Chain Security Beyond Specialty Metals


Sec. 835 RARE EARTH MATERIAL INVENTORY PLAN  
“develop a plan to establish an inventory of rare earth materials needed to ensure the long-term availability of such materials.”

- FY 12 Defense Appropriations Act (H.R. 2219)

RARE EARTH MATERIALS - “The Committee urges the Secretary of Defense to rebuild a rare earth materials supply chain within the United States that includes the production of rare earth minerals, oxides, metals, alloys, and permanent magnets.”
Supply-Chain Security Beyond Specialty Metals

Views of Defense Logistics Agency Strategic Materials (DLA-SM), formerly the Defense National Stockpile Center
# Metal Prices Recently Skyrocketed

## Peak price increases since January 2003

<table>
<thead>
<tr>
<th>Electronics</th>
<th>Structure</th>
<th>Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>Aluminum</td>
<td>Nickel</td>
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<tr>
<td>Tungsten</td>
<td>Titanium</td>
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<td>Manganese</td>
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<td>300%</td>
<td>&gt; 700%</td>
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Top Ten Shortage Materials Are Essential for the Production and Performance of Most Systems

The list includes materials other than rare earths and titanium!

## “Top Ten” Shortfall Materials

<table>
<thead>
<tr>
<th>Strategic Material</th>
<th>Important Defense Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Oxide</td>
<td>Abrasives</td>
</tr>
<tr>
<td>Antimony</td>
<td>Flame retardants; batteries</td>
</tr>
<tr>
<td>Bauxite, Refractory Grade</td>
<td>High temperature applications</td>
</tr>
<tr>
<td>Fluorspar, Acid Grade</td>
<td>Hydrofluoric acid</td>
</tr>
<tr>
<td>Manganese Metal</td>
<td>Wireless communications equipment</td>
</tr>
<tr>
<td>Neodymium</td>
<td>Magnets, lasers</td>
</tr>
<tr>
<td>Tantalum</td>
<td>Capacitors; super alloys</td>
</tr>
<tr>
<td>Tin</td>
<td>Solder, alloys</td>
</tr>
<tr>
<td>Tungsten</td>
<td>Cutting tools; super alloys</td>
</tr>
<tr>
<td>Yttrium</td>
<td>Displays and lighting</td>
</tr>
</tbody>
</table>

112th Congress Responds With Broad View of Strategic and Critical Materials

- **H.R. 6160** Rare Earths and Critical Materials Revitalization Act
- **H.R. 1388** RESTART Act of 2011
- **S. 1113** Critical Minerals Policy Act of 2011
- **S. 383** Critical Minerals and Materials Promotion Act of 2011
An Evolution in Risk Management and the Government Response

- From Buy American to the Specialty Metals Clause
- Globalization Changes the Market and its Rules
- Congress and Industry Respond from 2007-2010
- Strategic and Critical Materials Recognized as Key Issue – 2007 - present
- Congress, Industry and Executive Branch Grappling with Realization of Supply Chain Risk
- Titanium Industry Remains Vibrant in the U.S.
Questions?