



# DEFENSE LOGISTICS AGENCY

AMERICA'S COMBAT SUPPORT LOGISTICS AGENCY



## Supporting Warfighters and U.S. Defense Sustainability with Strategic and Critical Materials

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# Report Documentation Page

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# Why the Interest in Strategic and Critical Materials?



# Metal Prices Recently Skyrocketed



<i>Electronics</i>	
Copper	> 500%
Tungsten	300%
Germanium	300%
Indium	300%

<i>Structure</i>	
Aluminum	250%
Titanium	600%
Chromium	500%
Manganese	350%

<i>Engine</i>	
Nickel	> 700%
Cobalt	325%
Molybdenum	500%
Rhenium	> 1000%

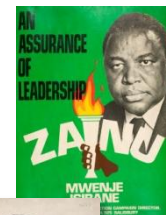
*Peak price increases since January 2003*



# Major Raw Material Supply Disruptions Have Occurred in the Recent Past

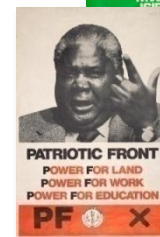
## 1966 through 1971

Embargo of chromium imports from Rhodesia



## 1969

Nickel workers strike in Canada



## 1978

Panic buying of cobalt due to political instability in Zaire and Zambia



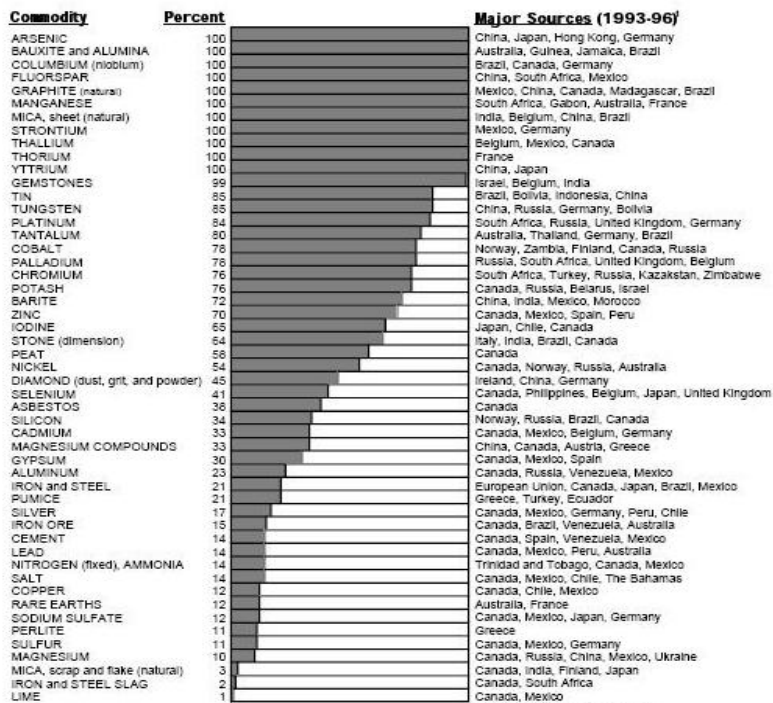
## Present

Unrest in the Congo causing concern with respect to metal supplies such as cobalt



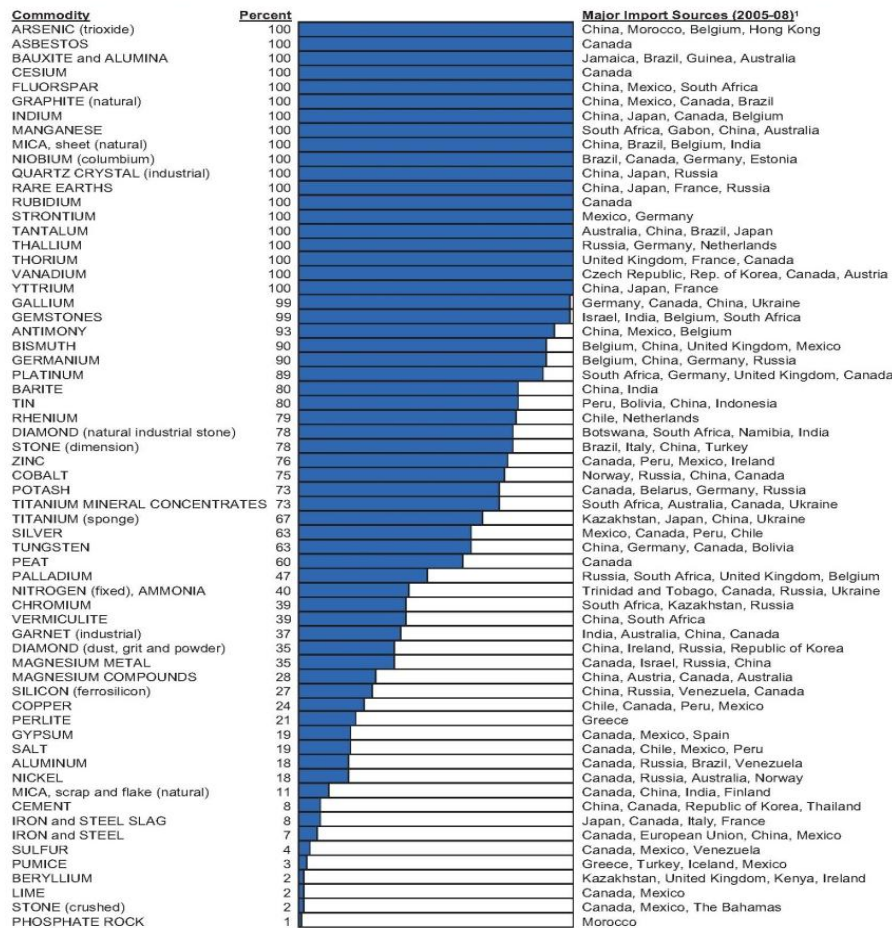
# US Reliance on Imports is Expanding at an Accelerated Rate

1997 U.S. NET IMPORT RELIANCE FOR SELECTED NONFUEL MINERAL MATERIALS



6

2009 U.S. NET IMPORT RELIANCE FOR SELECTED NONFUEL MINERAL MATERIALS



Additional commodities for which there is some import dependency but data are withheld or are insufficient to determine import-reliance levels:

Antimony	China, Mexico, Bolivia, South Africa	Mercury	Russia, Canada, Spain, Kyrgyzstan
Bismuth	Mexico, Belgium, China, United Kingdom, Canada	Rhenium	Chile, Germany, Netherlands, United Kingdom, Russia
Gallium	France, Russia, Canada, Germany, Hungary	Rutile	Australia, South Africa, Sierra Leone
Germanium	Russia, United Kingdom, China, Belgium, Ukraine	Titanium (sponge)	Russia, Japan, China, Kazakhstan
Iridium	South Africa, Australia, Canada	Vanadium (ferrovanadium)	Russia, Canada, Belgium, Austria
Indium	Canada, Russia, France, Italy, China	Vermiculite	South Africa, China
Kyanite	South Africa	Zirconium	Australia, South Africa

from USGS Mineral Commodity Summaries



# Review of Current Stockpile

- **National Defense Stockpile (NDS) History**
  - NDS Program established in 1939
  - **Purpose:** to preclude dependence on foreign sources of supply in time of national emergency
  - Most of the NDS commodities were declared excess to Defense needs and subsequently sold beginning 1994
    - Since 1994, commodity sales have totaled approx \$7 billion
    - Current market value of remaining inventory is \$1.2 billion
  - Reviews of U.S. stockpiling strategies began in 2006
    - A working group was convened in Jan. 2008 by Deputy Undersecretary of Defense for Industrial Policy.
    - Working group included representation from each of the military services, Department of Commerce, U.S. Geological Survey, and Defense Contract Management Agency.



# Recommended Program Enhancements

- Reshape the National Defense Stockpile to improve access to strategic & critical materials needed for defense and national security needs
  - Reconfigure as a Strategic Materials Security Program (SMSP)
- Enhance authority to acquire and release materials
- Develop mechanisms for timely acquisition of materials for weapons platforms and systems
- Use supply chain management techniques such as:
  - Long term contracts or agreements
  - Contingency contracts for surge capacity
  - Partnerships with foreign countries





# Strategic Materials Security Program

- Constant surveillance of global marketplace
- Assess ever-changing material needs
- Evaluate material requirements
  - Military conflict scenarios
  - Peacetime scenarios
- Maintain dynamic list of material needs
- Assess Country reliability
  - Willingness and/or ability to sell to US
- Use risk mitigation strategies to ensure material availability



## Primary SMSP Benefits

- Improve ability to project material needs
- Improve response to emergent material needs
- Leverage buying power of the Department
- Enable planners to take advantage of world market conditions
- Use of mitigation tools to ensure timely availability of materials at a predictable cost
- Improve Department access to material demand and supply information by issuing “Alerts”



# SMSP and the Defense Department

- SMSP interface within Department of Defense
  - USD(AT&L)
    - Establish policies and procedures
    - Validate SMSP acquisitions, sales and risk mitigation plans
    - Issue data call to Military Services/DoD agencies
    - Negotiate agreements with foreign nations
  - Military Services/DoD Agencies
    - Identify weapons systems, material concerns and future systems critical to national Defense
    - Provide material types and quantities for requirements determination
    - Identify new materials and Research and Development efforts



## On-going Actions

- Several initiatives are under way using existing resources
  - Suspension/Curtailment of material sales
  - Issuing Market “alerts” and reports
  - Developing Management Information System
  - Further study and analysis of approx 40 materials
  - Decomposing weapons systems
  - Initiating combined procurement actions (Example 1)
  - Assisting with Buffer contracts (Example 2)
  - Participating in Recovery, Recycle, & Reuse Project (Example 3)



# Example 1 – Titanium

- **DNSC contracted to procure titanium:**
  - Navy Requirement: 53,490 lbs in 2009
  - Army Requirement: 148,200 lbs in 2009
  - Total awarded \$3.95M
  - Combined procurement for Army/Navy resulted in approximately \$1.3M cost avoidance
  - Solicitation included provisions for Army to receive a “credit” for the offal material provided as feedstock and “right to recover” opportunity
- **Collaborating with the services to expand the procurement to a much larger scale**





# Example 2 – Buffer Contract

- Latrobe Steel - September 2008
- Material vendor-to-vendor and vendor managed
- \$5 million
- War/peace time surge

## Strategic Metal Project (SMP)

The SMP, formerly the Strategic Metal Buffer Pilot (SMBP), has awarded a contract to Latrobe Specialty Steel Company (Latrobe), a United States domestic mill, to provide 300M and M50 grades of specialty steel. The material is available for vendor-to-vendor releases. This material is not Government Furnished Material (GFM) and all warranties and title transfer to the vendor from Latrobe per Latrobe's sales policy or the vendor's contract with Latrobe.

### Material Available

The material is available to Department of Defense (DoD) manufacturers with valid DoD contracts requiring expedited delivery. Specific products (shapes, forms, sizes) are produced from established intermediate products (ingots and billets) and are shipped within the maximum lead-time. Lead-time may be less depending on the final product required. The listed application is for reference and material may be released for other applications.

Material Type	Maximum Lead-time	Applications	Specifications
300M	10 weeks	Landing Gear	AMS 6257, AMS 6417, AMS 6419, BMS 7-26, C05-1190, CE-0896, CPS 4911, DMS 1935, GM 1012, IGQ 41-11, LAT 1.9042, MIL-S-83135, MIL-S-8844, MTL 1201, S155, ZFN 9207
300M (BAE additional testing)	18 Weeks	Torsion Bars	AMS 6257, AMS 6417, AMS 6419, BMS 7-26, C05-1190, CE-0896, CPS 4911, DMS 1935, GM 1012, IGQ 41-11, LAT 1.9042, MIL-S-83135, MIL-S-8844, MTL 1201, S155, ZFN 9207
M50 (2.76 - 8" Diameter)	14 Weeks	Bearings	AMS 6491, CFR 5200, CPW 378, D1198, DMD 119-20, EMS 52491, GE C50TF56, KBM250, MSRR 6083, PWA 725, PWA 793 and others
M50 (0.5 -2.75" Diameter)	14 Weeks	Bearings	

### Terms

Material pricing is per your existing contract(s) with Latrobe. If you do not have an existing contract, request a quote to determine applicable pricing. All material releases are on a Latrobe-to-vendor basis and are not GFM.

### Release Procedures

Vendors may request a release through the Government Buffer Manager (GBM) by submitting requests via email to [gbm@latrobe.com](mailto:gbm@latrobe.com). Mr. Ralph Ellison, Primary Government Buffer Manager, can be reached at (703) 747-5455 and Mr. Bryan Harden, Alternate Government Buffer Manager, can be reached at (703) 747-5483.

1. Obtain a quote or existing order number from Latrobe Specialty Steel Company
2. Provide GBM with the following:
  - a. Recurring list to 6-months of scheduled releases) or one-time release
  - b. Release Quantity
  - c. Requested release dates
  - d. Supporting Government Contract and Contract Line Item Number (CLIN)
  - e. Part number(s) and Quantity (to be produced from release quantity)
  - f. If proprietary, indicate in request
3. The GBM will review, match against buffer capability, and notify vendor of release approval (typically within 3-business days). If a variance in delivery is required, the GBM may discuss options with the vendor.
4. Vendor receives material and report receipt to GBM via email. If cancellation of a release is required, the vendor notifies the GBM via email.

<sup>1</sup> Contact Government Buffer Manager for other bearing manufacturer specifications are required.

Material Type	Maximum Lead-time <sup>1</sup>	Typical Applications	Specifications
300M Billets	10 - weeks	Landing Gear	AMS 6257, AMS 6417, AMS 6419, BMS 7-26, C05-1190, CE-0896, CPS 4911, DMS 1935, GM 1012, IGQ 41-11, LAT 1.9042, MIL-S-83135, MIL-S-8844, MTL 1201, S155, ZFN 9207
300M (Round bar – BAE added testing)	18 - weeks	Torsion Bars	
M50 (2.76 - 8" Diameter)	14 - weeks	Bearings	
M50 (0.5 -2.75" Diameter)	14 - weeks	Bearings	



## Example 3 – Recovery, Recycle & Reuse

- **DNSC is participating in program to help recycle/reuse Department of Energy (DOE) scrap metal and equipment**
  - A collaborative interagency program
  - **Goal:** To match Department of Defense strategic metal needs with DOE excess materials and scrap metal
  - **Benefits include:**
    - Assisting DoE reduce cost of maintaining and disposing of reusable waste materials
    - Acquisition cost reduction to DoD
  - **Status:**
    - Inventory process is ongoing
    - Initial transfers to DoD completed resulting in \$75K in acquisition savings
    - Near term recycle projects identified for titanium sponge, tantalum, Zirconium, Tellurium, copper and scrap metal



# QUESTIONS?

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