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China 'Power' Over Metals for Smart Bombs Prompts U.S. Hearing  
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By Peter Robison and Gopal Ratnam

April 15 (Bloomberg) -- U.S. lawmakers called for a hearing after a government report exposed potential "vulnerabilities" for the American military because of its extensive use of Chinese metals in smart bombs, night-vision goggles and radar.

China controls 97 percent of production of materials known as rare earth oxides, giving it "market power" over the U.S., the Government Accountability Office said in the report obtained by Bloomberg News before its public release on April 14.

U.S. Representative Ike Skelton, chairman of the House Armed Services Committee, told reporters in Washington he would call for an inquiry to discuss the report. California Representative Howard McKeon, the top Republican on the panel, backed Skelton's call.

"We are aware of China's attempt to monopolize this type of material but there are alternatives to that," Skelton, a Missouri Democrat, said April 14 without elaborating.

The materials -- found in General Dynamics Corp.'s M1A2 Abrams tank and Aegis SPY-1 radar made by Lockheed Martin Corp. -- are so irreplaceable that suppliers to military equipment makers could be buying from China for years to come, the GAO said.

The Pentagon is studying how to increase domestic availability of rare earth elements "through developing new sources, re-energizing previous domestic sources" and adding the material to the national stockpile program, Defense Department spokesman Colonel David Lapan said April 14 in an e-mail. The department's report on the issue will be completed by September and will examine "how to better prepare for future vulnerabilities."

#### Report Released

A spokesman for Lockheed, based in Bethesda, Maryland, didn't respond to requests to comment on the study, which was posted on the GAO's Web site April 14 after Bloomberg News reported on the findings. A spokesman for General Dynamics of Falls Church, Virginia, said he couldn't immediately comment.

The issue gained attention last year when China's Ministry of Industry and Information Technology said supplies were running short of two rare earth elements, also in demand for wind turbines and hybrid cars. The ministry's press office didn't respond to faxed questions asking for comment.

"China is a rapidly rising military and economic power and the fact is that they cornered the market on these rare earth metals that are essential for a lot of our advanced weapons systems as well as a lot of manufacturing in the United States," Representative Mike Coffman, a Colorado Republican, who asked for the GAO report, said April 14 in an interview on Bloomberg Television. "We need to move aggressively on this issue now before it's too late."

## China Quotas

China established domestic production quotas on rare earth materials and decreased export quotas, increasing prices, the GAO report said. The nation also increased export taxes to a range of 15 percent to 25 percent, raising prices for non-Chinese competitors, it said.

Shortages of some elements "already caused some kind of weapon system production delay," the GAO said, citing a 2009 National Defense Stockpile report.

The term "rare earths" refers to a group of 17 chemically similar metallic elements, including lanthanum, cerium, neodymium, europium and yttrium. While they're actually relatively abundant in the earth's crust, finding deposits significant enough to mine is less common, the U.S. Geological Survey says.

China, the countries that made up the former Soviet Union and the U.S. have the largest reserves.

## California Mine

A U.S. mine in Mountain Pass, California, owned by Molycorp Minerals LLC, was once the world's dominant producer. It closed a separation plant in 1998 after regulatory scrutiny of its wastewater line and suspended mining in 2002, the GAO said.

As mining lapsed, so did companies that turned the ore into metals found throughout U.S. weapons systems, the GAO said. Magnequench International Inc., a maker of neodymium magnets, closed an Indiana plant in 2003 and moved equipment to China.

By the end of 2005, magnet makers in Kentucky and Michigan also closed.

"Government and industry officials told us that where rare earth materials are used in defense systems, the materials are responsible for the functionality of the component and would be difficult to replace without losing performance," the GAO report said.

It cited several specific weapons systems, including the M1A2 Abrams tank, which has a navigation system that uses samarium cobalt magnets with samarium metal from China; neodymium magnets from China in the Hybrid Electric Drive propulsion on the DDG-51 Navy destroyers built by Northrop Grumman Corp. and General Dynamics; and Lockheed Martin's Aegis SPY-1 radar, also on DDG-51 destroyers, containing samarium cobalt magnets that will need to be replaced during its 35-year lifetime.

## Rare Earths Study

Coffman, a former U.S. Marine who serves on the House Armed Services Committee, inserted an amendment into the fiscal 2010 defense spending bill requesting the study. The GAO was required to determine which defense systems are dependent on rare earth metals. The report was due by April 1.

Molycorp, based in Coffman's home state in Greenwood Village, Colorado, and backed by shareholders including Resource Capital Funds, Pegasus Capital Advisors LP and Traxys North America, plans to raise \$450 million to \$500 million to resume mining by 2012.

Even if it does, the U.S. would still lack companies to process the metals, the GAO said. It may take two to five years to develop a pilot plant to refine oxides to metal, and foreign companies own

patents over neodymium magnets that don't expire until 2014, the report said.

### Rebuilding U.S. Supply

Rebuilding a U.S. rare earth supply chain may take up to 15 years, the GAO said, citing industry estimates. That is dependent on infrastructure investment, developing new technologies and acquiring patents, it said.

Developing new U.S. sources of the metals may take "enormous investment and time," Dan Slane, chairman of the Washington-based U.S.-China Economic and Security Review Commission, said April 14 in a telephone interview. "Time is of the essence because the situation is going to get worse" as China's domestic consumption of the material rises, he said.

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