

Rare Earth Magnet Industry in the USA: Current Status and Future Trends



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Spontaneous Materials

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United States of America

WAR
DEPARTMENT

ARMY SERVICE FORCES ~ CORPS OF ENGINEERS

Manhattan District

This is to Certify that

RICHARD C. TROUT

E. I. duPont de Nemours & Co., Inc.

has participated in work essential to the production of the Atomic Bomb, thereby contributing to the successful conclusion of World War II. This certificate is awarded in appreciation of effective service.

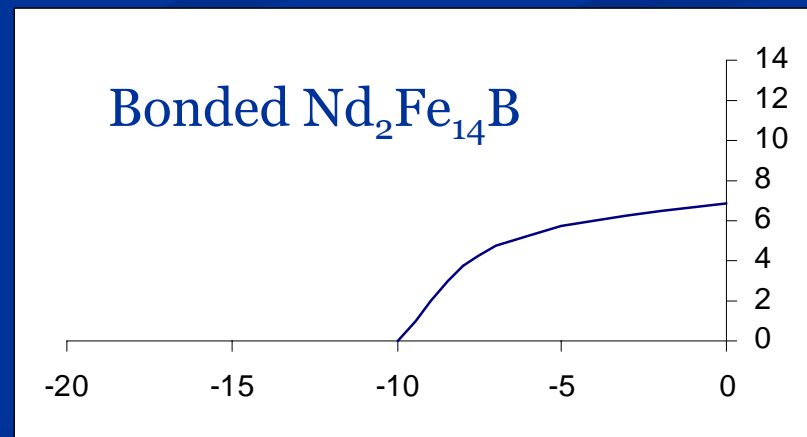
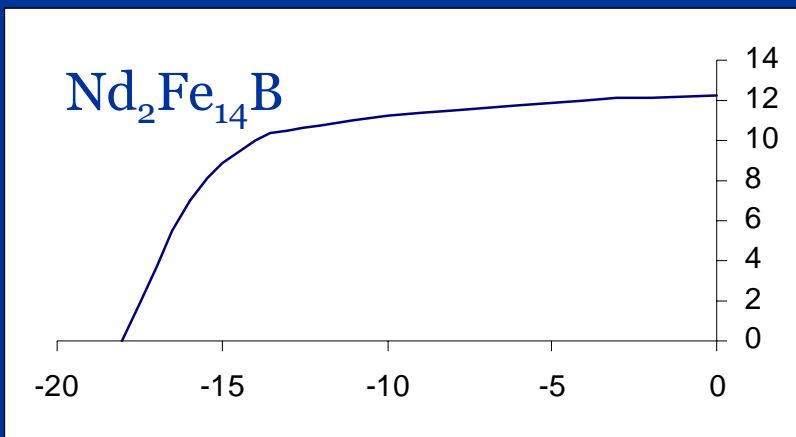
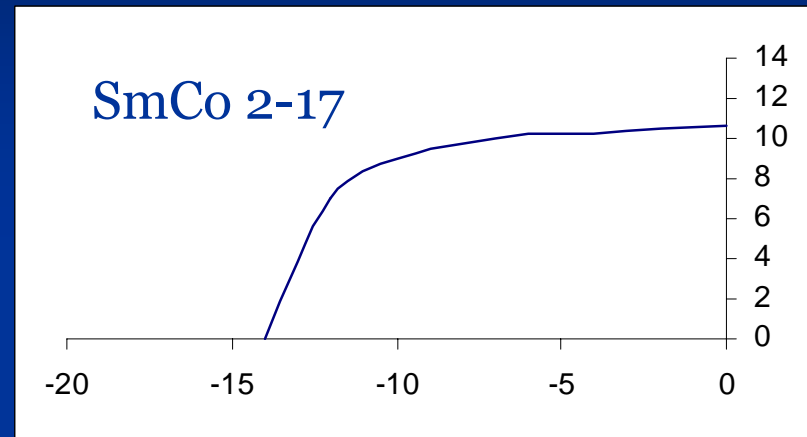
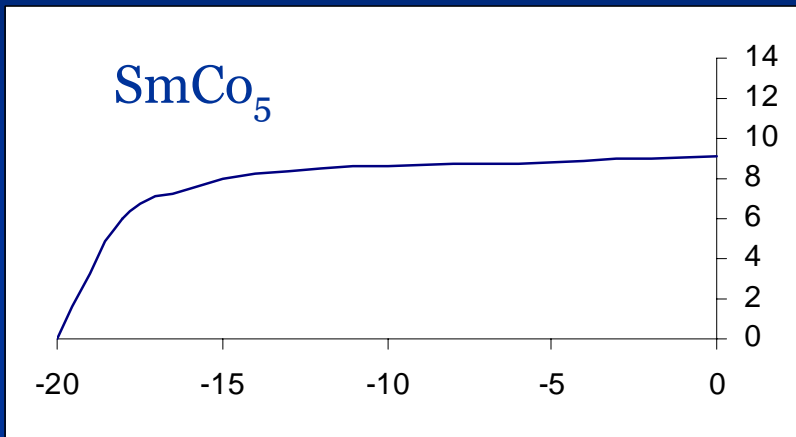
6 August 1945



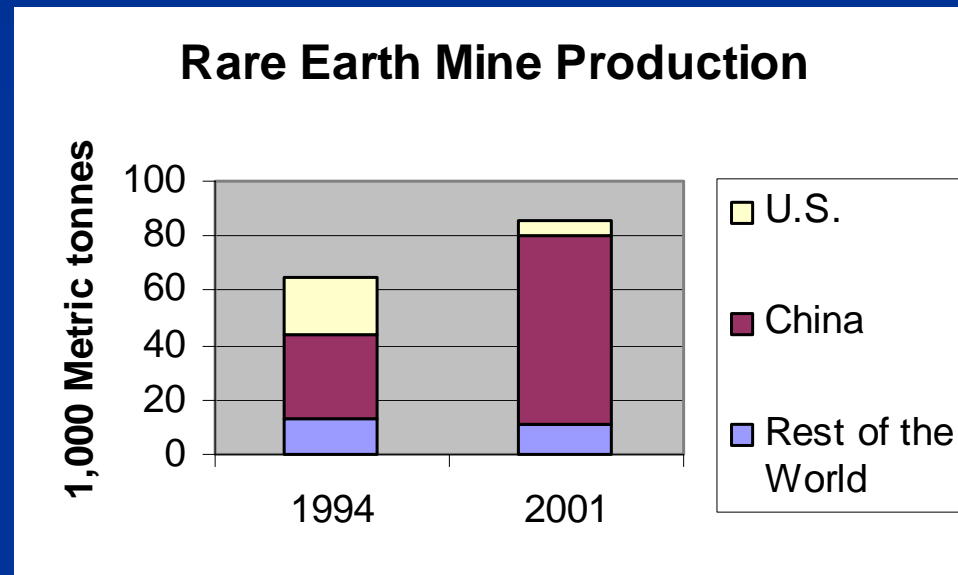
Henry L. Stimson
Secretary of War

Washington, D. C.

Graphical History

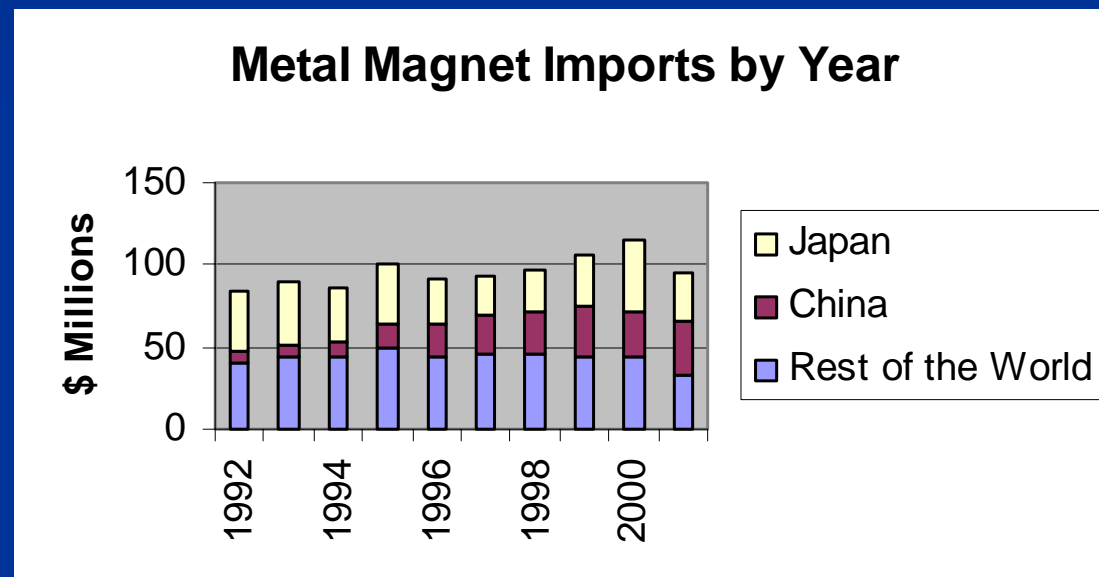


Raw Material Sources



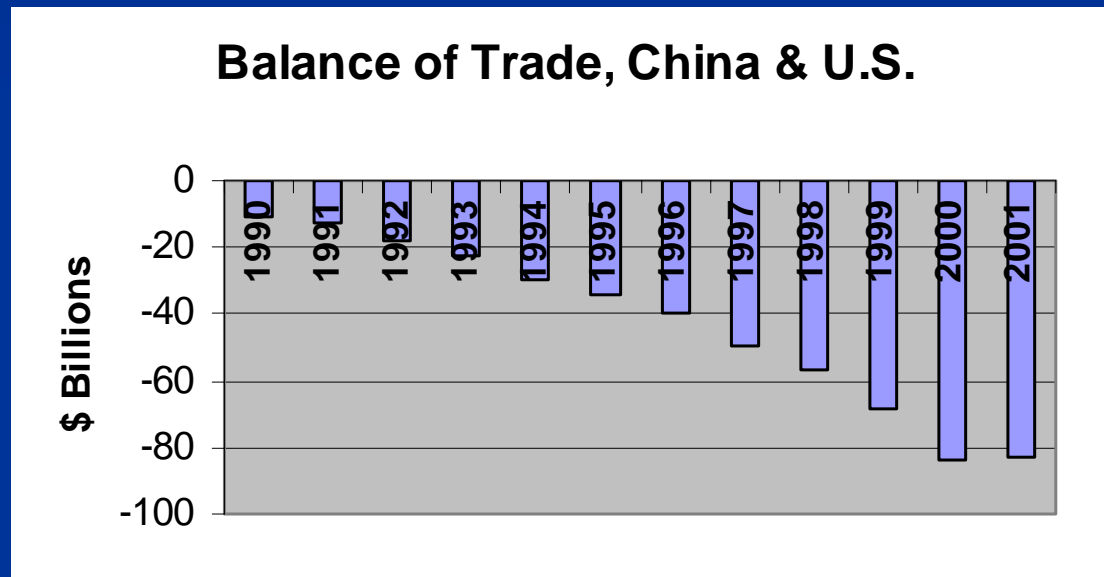
Source: U.S. Geological Survey

Sources of Magnet Imports



Source: Data Decisions

Total U.S. Trade with China



Source: U.S. Census Bureau

A Weaker Dollar in 2002

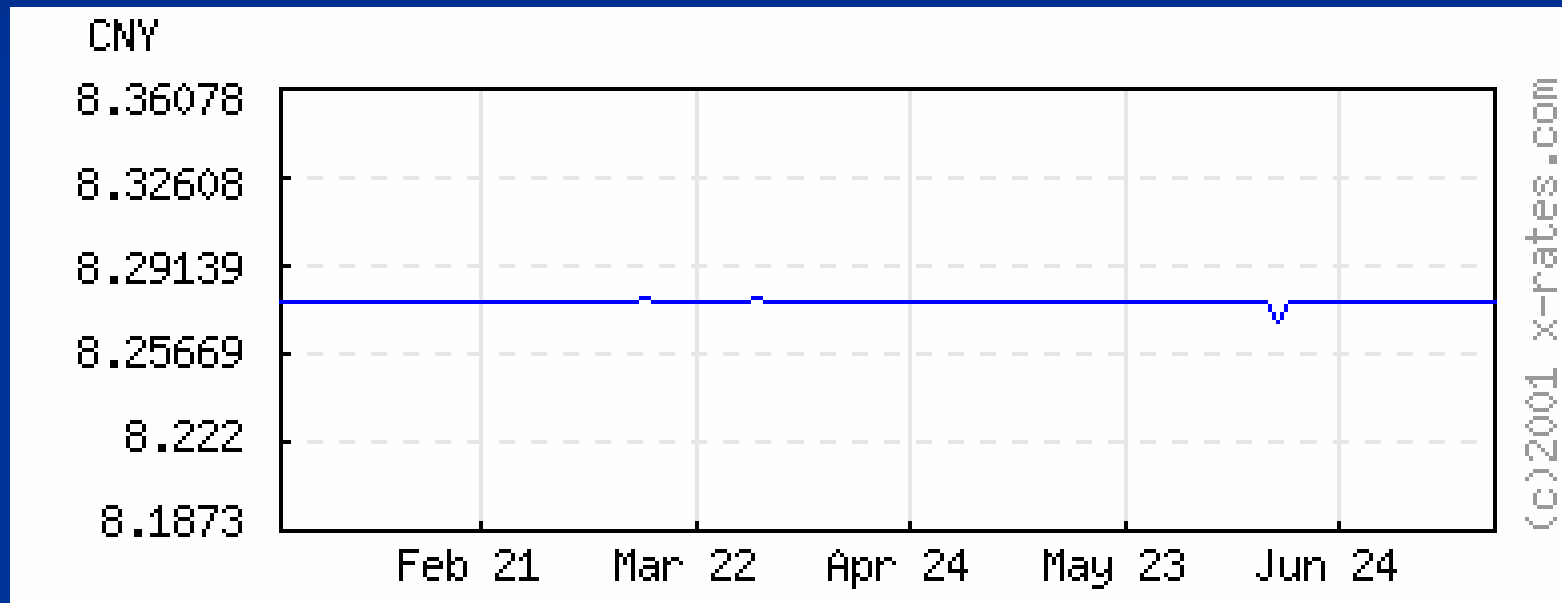


Yen



Euro

But not against the Yuan



The Future

The future, it ain't what it used to be.

Yogi Berra

Possible scenarios

- Trade war, tariffs
- Military or defense requirements
- Economic or political collapse in China
- A new breakthrough material
- Production consolidation in the U.S.

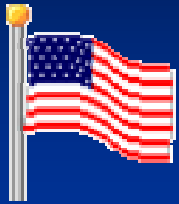
What's the limit?

	$4\pi M_s$ [kG]	$(4\pi M_s)^2/4$ [MGOe]
$\text{Nd}_2\text{Fe}_{14}\text{B}$	16	64
Fe	21.5	115
FeCo	24	144

Possible scenarios

- Trade war, tariffs
- Military or defense requirements
- Economic or political collapse in China
- A new breakthrough material
- Production consolidation in the U.S.
 - Involuntary
 - Voluntary

Conclusion



You can always rely on America to do the right thing, once it has exhausted the alternatives.

Winston Churchill