

Heritage Lectures

No. 948

Delivered May 23, 2006



Published by The Heritage Foundation

June 22, 2006

Risks and Opportunities of a Rising China

Larry M. Wortzel, Ph.D.

In the international arena, China poses a challenge to the United States from a diplomatic, economic, and military standpoint. Beijing has adopted a strategy that focuses on the accumulation of strategic resources and the development of a productive capacity that attracts vast amounts of foreign capital, modernizes its industry, leaps China's technological base forward, and strengthens its military. China's diplomacy, especially around Asia, but also in Africa, Latin America, and Europe, has been a counterweight to American influence. Being a member of the Permanent Five of the United Nations Security Council gives China's economic and diplomatic efforts extra leverage.

For corporations, doing business in China means navigating the challenges posed by a climate of cronyism, nepotism, political patronage, counterfeiting, organized crime, the effect of a dominant, authoritarian political party with its own internal rules of discipline, and a legal system that depends on who you know rather than the rule of law. Sometimes, due diligence means figuring out which Communist Party official can deliver land and electrical power in return for an American college education for her son.

The State Security Apparatus

For people used to the rule of law and open, transparent government, operating in China can be a daunting experience. In addition to these other problems, the security professional has to contend with seven or more state-controlled intelligence and secu-

Talking Points

- Operating in China can be a daunting experience. The security professional has to contend with seven or more state-controlled intelligence and security services that can gather information for the state-owned industrial sector.
- Foreign companies face continuous pressure to disclose or introduce new technology into China, often as a condition of doing business. When local employees move to other companies or open their own businesses, they often take acquired trade secrets with them.
- For those who do business in China, it is often difficult to know whether you are seeing state-directed espionage, corporate industrial espionage, or just some entrepreneur out to make money.
- Another increasingly serious economic and security challenge to the United States is resource competition. China's efforts to achieve the direct control of energy resources could lead to disruptions in world markets and even direct conflict.

This paper, in its entirety, can be found at:
www.heritage.org/research/asiaandthepacific/hl948.cfm

Produced by the Asian Studies Center

Published by The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002-4999
(202) 546-4400 • heritage.org

Nothing written here is to be construed as necessarily reflecting the views of The Heritage Foundation or as an attempt to aid or hinder the passage of any bill before Congress.

rity services that can gather information for the state-owned industrial sector. These include:

- The Ministry of State Security and its local or regional state security bureaus;
- The Public Security Bureau;
- The intelligence department of the People's Liberation Army, or Second Department;
- The PLA's Third, or electronic warfare, Department;
- A PLA Fourth Department that focuses on information warfare;
- The technical intelligence collectors of the military industrial sector and the Commission of Science, Technology and Industry for National Defense; and
- The Communist Party or PLA Political Liaison Department.

How China Industrialized

Some historical perspective on the way that China industrialized will help explain the entrepreneurial approach that China's businesses, military, and intelligence services sometimes take in acquiring new technology.

Beginning in 1840, British trade officials and Qing Dynasty imperial administrators disagreed about free trade. British merchants wanted to sell opium in large quantities in China, and a Chinese official destroyed three million pounds of raw opium.

When the Chinese government refused to compensate British merchants, Admiral George Elliott, the British negotiator, arrived off Canton with 16 warships and 4,000 troops. He blockaded the main ports along the Chinese coast. Diplomatic disputes and military engagements continued through 1842. By June of that year, British forces captured the ports of Xiamen, opposite Taiwan, Ningbo, and Zhoushan. The British also took Shanghai and severed all of China's main river and canal links from north to south.

On August 29, 1842, the Chinese signed the Treaty of Nanjing. It opened five Chinese cities for residence by British subjects, who enjoyed extraterritorial protection for their property and persons. Those cities were Guangzhou, Fuzhou, Xiamen,

Ningbo, and Shanghai. The Chinese emperor also ceded Hong Kong to Britain.

It is safe to say that this experience left a lasting impression on China's imperial family. There was 20 years of internal unrest in China. Ultimately, only foreign assistance and Western mercenaries helped the Manchu Dynasty control the unrest. By 1864, China embarked on a "Self-Strengthening Movement" designed to industrialize the country and to develop modern arsenals, shipyards, and a strong military.

Senior Chinese officials sent young engineers and technicians abroad to study industrial processes, acquire sets of machine tools, and buy modern weapons. For about two decades, between 1865 and 1885, Chinese armies and navies bought the best they could from the international market and then copied what they were able to in newly built arsenals. The first ship from the movement was the *Tian Zhi*, a steam-powered paddle wheeler that depended on foreign-made engines and propulsion systems. Its guns came from Britain, Germany, and the United States. Within two decades, however, Chinese arsenals and shipyards reverse engineered some of the most modern rifles, cannons, and guns and produced them domestically.

This all came to a crashing halt between 1884 and 1894. First, in the Franco–Chinese War, in 1884, eight French warships sank the entire southern Chinese fleet at Ma Wei, opposite the city of Fuzhou. A disagreement over trading rights in Vietnam, then a Chinese suzerainty, fueled that dispute. A decade later, in the Sino–Japanese War, the Japanese Navy and four infantry divisions put an end to the Self-Strengthening Movement. They destroyed the Chinese northern fleet, massacred some 60,000 Chinese soldiers and civilians at what is now the city of Dalian, and took over all of the Shandong and Liaodong Peninsulas. Japan also took control of the Korean Peninsula and Taiwan in the settlement of that war.

Three Lessons to Be Learned

I hope you will take three lessons from this short historical account.

First, the Chinese populace and government

came away from the experience extremely sensitive to China's sovereignty and to giving foreign firms property and open commercial rights. To this day, the educational system in China imparts a big, symbolic cultural chip on the shoulders of Chinese students about foreign exploitation.

Second, there is a long record in China of sending government-directed missions overseas to buy or shamelessly steal the best civil and military technology available, reverse engineer it, and build an industrial complex that supports the growth of China as a commercial and military power.

Finally, if Chinese industry failed to reverse engineer all the components of high-technology goods, they simply added foreign components to Chinese-produced items.

One can see vestiges of this climate of the theft of intellectual property and sensitivity to foreign influence in the newspapers every day. In the political sphere, the dispute between the Vatican and Beijing is about state control of ideology and the relationship between belief systems and politics.

If one follows the arguments in Congress on how to respond to China's valuation of the Renminbi, the reluctance to label China a currency manipulator by Treasury Secretary John Snow is a reaction to the historical chip on the shoulders of Chinese officials. Snow believes that they will react better if they are not under direct pressure by a foreign power. In the economic sphere, the insistence that foreign companies transfer technology to China is a reflection of this history.

The 863 Program

The same methodical, centrally directed approach to acquiring foreign technology used in the Self-Strengthening Movement guides China's programs to gather industrial and military technology from abroad today. In March 1986, the PRC launched a national high-technology research and development program with the specific goal of benefiting China's long-term high technology development. This centralized program, known as the "863 Program" (or Torch Program), allocates money to experts in China to acquire and develop biotechnology, space technology, information technology,

laser technology, automation technology, energy technology, and advanced materials. The "863" name comes from the month and the year that the program was proposed.

A few of China's top scientists proposed the 863 Program as an effort to speed concurrent civil and military technology development. Like the 19th century Self-Strengthening Movement, the program sends thousands of students and scientists abroad to pursue critical civil and military dual-use technologies.

In 1988, not long after the 863 Program began, a fellow military attaché and I visited a state-owned electronics plant in Shandong Province. The plant manager eagerly took us to the "research lab" to show off the newest product developed by the factory, a cellular telephone. The lab consisted of several technicians carefully dismantling Nokia and Motorola cellular phones and then diagramming and cataloging their parts and design. There was no sense that industrial designs were being stolen or that copyrights were being violated. Moving forward to today, CISCO and the Chinese electronics company Huawei are in a dispute about whether Huawei copied CISCO routers.

The allegations against Chen Jin, of Jiaotong University in Shanghai, are an example of the entrepreneurial approach people take toward industrial espionage and intellectual property theft in China. Chen returned to China after earning a Ph.D. at the University of Texas at Austin. In 2003, China treated Chen like a national hero for inventing China's first signal processing microchip. Last week, Jiaotong University dismissed him, and Chen stands accused of hiring flocks of migrant workers with good manual dexterity and great eyesight to scratch the name "Motorola" off chips and etch in the name of Chen's company, "Hanxin."

In 2004, the Business Software Alliance estimated that the U.S. software industry lost \$1.47 billion due to piracy in China. Piracy rates in China remain somewhere between 66 percent and 90 percent across all copyright industries. General Motors is suing a Chinese automaker for illegally copying the design of one of its models.

Local governments are also taking an active role in gathering technology as they build their own economies. Many provinces and municipalities operate high-technology zones or “incubator parks” specifically designed to attract foreign businesses. They also give incentives to bring back Chinese nationals who have studied or worked overseas in critical high-technology areas. When entrepreneurs return to China with the targeted skills, they get free office space, loans, start-up capital, and administrative help in setting up a business designed to bring in foreign investment and technology.

The challenge that foreign companies face is a continuous pressure to disclose or introduce new technology into China, often as a condition of doing business. Security professionals have an even greater challenge because of the weak legal infrastructure and climate of low regard for intellectual property rights in China. When local employees move to other companies or open their own businesses, they often take acquired trade secrets with them.

The efforts of the 863 Program have largely been successful. China’s economy has grown at double-digit rates for the past 15 years. In the same period, the military budget has increased by an even greater rate than that of economic growth. The growth in the military budget often reached 17 percent.

Surprising the U.S. Intelligence Community

When Beijing fielded two new classes of submarine last year, the U.S. intelligence community was surprised. The sophistication of the design was something of a technical surprise, and the speed of the production process was a strategic surprise. One of the subs is the nuclear-powered attack Type 094. The other class of submarine is a nuclear-powered ballistic missile submarine, Type 093. In addition to these new submarines, today China has deployed a *Xia*-class ballistic missile sub, four Kilo attack submarines bought from Russia, five Han attack subs, seven Songs, 18 Mings, and 22 Romeos. The last three classes are all diesel attack submarines.

For a number of reasons, the U.S. Navy is having a very difficult time tracking Chinese subs, making their deployment more serious in the Asian defense calculus. The undersea terrain and ocean characteristics in the Pacific are different from the Atlantic, making the anti-submarine warfare climate different in that region from what it was against the Soviets during the Cold War. In addition, the United States lacks the extensive undersea listening arrays in the Western Pacific that it had in the Northern Atlantic. Finally, the Western Pacific is crowded with other ships, creating a lot of noise that confounds submarine detection.

There are a few other areas where China now excels in producing military hardware. Besides Russia, only China can arm its combat ships and aircraft with a hypersonic, nuclear-tipped cruise missile. China has now fielded a target acquisition and sensor architecture that will permit cooperative target engagement by multiple land-, air- and sea-based weapon systems.

Some of this depended on foreign technical purchases, but China’s defense industries excel in certain areas. These include cruise missile and ballistic missile production, missile propellants, and radar signals processing. China has an active anti-satellite warfare research program going on. Beijing is working on directed energy weapons like lasers and millimeter wave weapons as well as advanced kinetic energy weapons. In the past decade, China has fielded many new surface warfare ships and combat aircraft.

With foreign help, the PLA has mastered air-to-air refueling and has fielded airborne early warning radars. The PLA excels in electronic warfare and has excellent air defense systems. China has managed to field a large number of nuclear-capable, mobile short-range missiles and new classes of intercontinental ballistic missiles with multiple warheads and maneuvering reentry vehicles.

In some warfare areas, the PLA is having real trouble. China’s military industries cannot master the “hot sections” of aircraft engines. For some reason, they cannot get down the metallurgy of jet turbine-engine fan blades. China cannot produce adequate diesel or gas turbine automotive power

trains, so the PLA needs German or Russian engines for many tanks, missile transporter-erector-launchers, and armored vehicles. China's shipyards have excelled in "platform" design and production, but as in the Self-Strengthening Movement in the 19th century, China still needs foreign naval engines and propulsion systems, ship electronics, and fire control systems. They get a lot of this technology from Europe and Russia.

The picture I have painted for you here is leading to an explanation of why you can expect to see licensing restrictions on exports of many defense-related technologies to China. The tendency in corporations to increase market share in China and introduce new technology there will pull at security professionals because of the reticence by the Pentagon and the U.S. government to permit technology with military application into China. Congressman Henry Hyde, chairman of the House International Relations Committee, introduced legislation last year to restrict European companies from participating in U.S. defense research if those companies transferred related defense technology to China. This only postponed the lifting of the European arms embargo on sales to China, and I expect to see the issue come up again this fall.

Export Controls in Perspective

China's foreign minister has charged that if the United States wants to reduce the trade imbalance with China, it should lift restrictions on high-tech exports.

According to the March 29, 2006, Revisions of Export and Reexport Controls by the Department of Commerce, in 2005, United States companies exported \$39 billion worth of items to the People's Republic of China. About \$3 billion of these exports were subject to licensing. That is a rate of roughly 7.7 percent subject to export licenses. Of the \$3 billion that Commerce reviewed for licenses, the department approved \$2.4 billion worth of goods for export and denied the export of \$12.5 million worth of goods. The Commerce Department returned the remaining license applications without action. That means export licensing stopped only 1.5 percent of the value of exports to China. Export controls are not keeping our bilateral trade out of balance.

Still, in the Code of Federal Regulations (15 CFR 742.4), "there is a presumption of denial for items that would make a material contribution to the military capabilities of the People's Republic of China." Among the more sensitive of the items subject to review are sensors and lasers, marine propellers and underwater noise reduction software, propulsion systems, and space vehicles.

Of course, it does not help the case for increasing high-technology exports to China when its leaders threaten war against democratic Taiwan. When China's military leaders threaten to use nuclear weapons on the United States or on American aircraft carrier battle groups if the U.S. assists Taiwan, it also reinforces the feeling in Congress that America needs to retain its own military strength as a potential hedge against China.

Espionage and Counterespionage

With respect to espionage and counterespionage, consider two recent cases related to China. In the Mak case in California, several members of the same family were arrested and charged with conspiracy to export defense articles and unlawful attempts to export defense articles. This technology theft ring focused on acquiring corporate proprietary information and embargoed defense technology related to the propulsion and electrical systems of U.S. warships. These included *Virginia*-class submarines, quiet electric drive systems for warships, and electromagnetic catapults for aircraft carrier launch systems.

The espionage effort appears to have been directed by a Chinese academic at a research institute for Southeast Asian affairs at Zhongshan University in Guangzhou, China. The Moks encrypted the information into a computer disk that also contained television and sound broadcasts. This effort has all of the earmarks of professional tradecraft and state-directed espionage, but it could have been industrial espionage out of a university research institute.

In another case, in Florida, the FBI arrested a Lockheed employee for trying to export an F-16 engine and air-to-air missiles to China.

For those who do business in China, it is often difficult to know whether you are seeing state-

directed espionage, corporate industrial espionage, or just some entrepreneur out to make a load of money.

The Deputy Undersecretary of Defense for Technology Security has testified that there are between 2,000 and 3,000 Chinese front companies operating in the United States to gather secret or proprietary information. The deputy director of the Federal Bureau of Investigation for counterintelligence recently put the number of Chinese front companies in the U.S. at over 3,200. Many of these front companies are the spawn of the military proprietary companies packed with the families of China's military leaders.

The nature of the Chinese state complicates the problem of knowing what the large numbers of travelers and students from China are actually doing. China is an authoritarian state led by the Chinese Communist Party. I have already listed the pervasive intelligence and security apparatus. The Chinese government is able to identify potential collectors of information and, if necessary, coerce them to carry out missions on behalf of the government because of the lack of civil liberties in China.

When it comes to corporate industrial espionage, the government owes American companies a good legal infrastructure to protect trademarks, patents, and copyrights; a system of education on industrial security; and a strong effort to ensure that China meets its own World Trade Organization obligations. The goal should be to create a legal system that protects ownership rights and intellectual property. However, I do not believe that American intelligence or security agencies should focus on forms of economic espionage that do not involve national security information.

Resource Competition

Another area that is becoming an increasingly serious economic and security challenge to the United States is resource competition. The economic growth in China and its industrial output has created a huge need for natural resources there. In areas like energy reserves, raw wood products, and the magnetite used for computer disks, China is willing to pay a premium to achieve resource security by controlling assets at the point of origin.

This is how 19th century mercantilist states functioned. For the most part, the Chinese companies involved in this effort are state-owned. Thus, when they act, they are agents of the state.

China's efforts to achieve the direct control of energy resources could lead to disruptions in world markets and even direct conflict. It is one thing to have a private company acquire energy or resource rights and then to sell those resources in the international marketplace. This kind of action can drive up prices. However, it is still a market-based mechanism. When states take such actions, those resources are often withdrawn from the market.

China's actions in the oil and gas arena have already led to diplomatic friction between Beijing and Washington. China National Petroleum Corporation invested heavily in Sudan and takes 50 percent of Sudan's oil exports. Washington has labeled Sudan a terrorist state. In what appears to be reciprocity for the oil deal, China blocked the United Nations Security Council from taking action to stop Sudan's genocidal practices.

Sinopec, another Chinese oil company, took a 50 percent stake in a major oil field in Iran and signed a \$70 billion deal to buy Iran's oil and gas over three decades. Meanwhile, in the U.N. Security Council, China is blocking international efforts to pressure Iran to accept safeguards on its nuclear program. Of course, we also worry about China's arms sales to unsavory governments.

China also has made inroads into Venezuela, a major oil supplier to the United States. The Chinese purchase of these assets and of future production without consideration for human rights or proliferation has increased Beijing's political influence all around the world. More seriously, should Beijing ever seek to use its military to back up its mercantilist acquisitions, it could lead to serious international conflict.

Conclusion

Our nation faces serious challenges from China. We have taken a course with China that is far different from the isolation and confrontational approach we took with the Soviet Union. Of course, circumstances are different also. China

takes strong positions in the international arena in support of its own interests. Unlike the Soviet Union, though, it does not seek to overthrow democratic systems and impose socialist or communist governments by force.

In a number of areas, our economic and political relations with China are a success story. China and the United States share similar interests in open trade, but the challenge is to ensure that there is an agreed set of rules that each nation follows. China and the U.S. also share common interests in ensuring a peaceful international system, but we have very different approaches to how individual human beings are treated in that system.

Finally, we have different approaches to territory and sovereignty, which requires that the United States still hedge its bets and maintain a strong military.

—Larry M. Wortzel, Ph.D., is a former Visiting Fellow in the Kathryn and Shelby Cullom Davis Institute for International Studies, and a former Vice President and Director of the Davis Institute, at The Heritage Foundation. These remarks were delivered at a conference on “The Asian Century for Business: A Security Challenge,” sponsored by ASIS International and the Center for Strategic and International Studies and held in Washington, D.C., on May 23, 2006.