

CHINA'S ENERGY STRATEGY

The Impact on Beijing's Maritime Policies

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EDITED BY

GABRIEL B. COLLINS, ANDREW S. ERICKSON,
LYLE J. GOLDSTEIN, AND WILLIAM S. MURRAY

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China's Energy Strategy

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*edited by Gabriel B. Collins, Andrew S. Erickson,
Lyle J. Goldstein, and William S. Murray*



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Gabriel B. Collins and Andrew S. Erickson

Chinese Efforts to Create a National Tanker Fleet

CHINESE SHIPPING FIRMS are aggressively expanding their oil tanker fleets. Although China's state energy firms support national energy security goals in their rhetoric, and China's state shipbuilders are striving to lead global production, commercial forces will almost certainly determine how these ships are employed. China's internal energy politics are complex. National, provincial, and commercial actors often pursue their interests in ways that support their own objectives, sometimes at the expense of Beijing's. And, given China's unwieldy bureaucracy and lack of an energy ministry, it is unclear to what extent larger objectives are conclusively defined and coherently enforced. Energy security considerations may have some influence in determining China's naval force structure, however. The Chinese navy's ability to protect energy transport routes is currently embryonic, at best. China's present naval buildup seems focused on Taiwan and other claimed territorial areas, and its tanker fleet buildup is best explained as pursuit of commercial gain. Yet the majority of new tankers being built for Chinese shipping firms will fly China's flag, which arguably helps to set a legal basis for militarily protecting these vessels. As Chinese naval power and oil import dependency rise, security-minded factions in China's leadership may

use the country's resource needs to justify further pursuit of blue water naval capabilities. At this critical crossroads in its naval development, China's leaders would do well to understand that the security of their nation's maritime oil transport lies in the inherent difficulties facing any force trying to disrupt it, rather than on any other single factor.

China's Evolving Energy Situation

The global oil shipping system transports oil from some of the world's most unstable areas. It has functioned through wars, hurricanes, embargoes, and canal closures. While commercial tanker operators engage in apolitical pursuit of profit, however, the U.S. Navy's maintenance of the freedom of navigation that makes their operations possible is subject to complex geopolitical conditions. The People's Republic of China (PRC)'s rise as a commercial and military power over the past three decades is drawing renewed attention to a system that governments and private consumers around the world have long taken for granted.

Maritime oil transport will be increasingly important to China in coming decades. China became a net oil importer in 1993 and a decade later was the second-largest-consuming and third-largest-importing nation.¹ In 2006 China imported 40 percent of its oil, or 2.9 million barrels per day (bpd). China currently imports roughly 45 percent of its oil supply. China's rising motor vehicle ownership, its plans to double the size of its road network, and its domestic firms' huge fixed investments in steel, petrochemicals, and other energy-intensive basic industries could drive oil imports to as much as 60 percent of total oil demand by 2016. China is on track to become the world's second largest net oil importer by 2015. The International Energy Agency estimates that by 2020 China could import around 7 million bpd of crude oil, or double today's imports.² Over the next fifteen years China's share of world oil consumption will more than double, with imports possibly rising to 80 percent by 2025.³ Despite new domestic fields, a highly touted pipeline from Kazakhstan, and planned lines from Russia, Chinese oil demand growth will likely overwhelm increases in nonmaritime oil supplies. Much of the new demand, therefore, will be met by seaborne oil shipments.

Inspired by growing concerns about oil insecurity, interested Chinese parties advocate the construction of a state-flagged and, to a large extent, domestically constructed fleet of oil tankers capable of hauling up to three-quarters of Chinese oil imports by 2020.⁴ Although PRC-owned tankers can currently transport less than 20 percent of China's oil imports, Chinese ship-

yards and shipping companies, driven by a combination of commercial and political concerns, are assembling a fleet of state-flagged very large crude carriers (VLCCs) that could carry upwards of 50 percent of Chinese oil imports by 2016.⁵ In practical terms, this means that more than fifty Chinese-flagged VLCCs could be plying the seas a decade from now.

Official Concern

China's explosive post-1993 oil import growth surprised analysts and officials. Indeed, Beijing disbanded its Energy Ministry in 1993 because the leadership expected China to remain energy self-sufficient.⁶ By 2003 the combination of the Iraq War, exploding domestic oil demand, and a leadership increasingly wary of reliance on the U.S.-led international economic system made oil security a central concern in China's energy debate.

Under President Hu Jintao China is taking multiple steps to secure its oil supply. It is continuing to support the "go out" policy in which Chinese national oil companies aggressively seek overseas oil fields. Beijing is encouraging state oil companies to build joint venture refineries in China that will be fed with earmarked oil supplies from Saudi Arabia and Kuwait, thus providing guaranteed crude streams because oil exporters would not likely cut off oil to their own refineries. China is simultaneously enhancing downstream security by building a strategic petroleum reserve, expanding its internal and external pipeline networks, and boosting its refining capacity and ability to handle a wider range of crude oil grades.

Chinese shipping companies and shipyards are constructing a tanker fleet capable of hauling a substantial portion of Chinese oil imports. While efforts to ensure upstream security by defending overseas oil fields are precluded by China's inability to project power overseas, a larger tanker fleet will help to develop what China—like many nations—regards as a critical, strategic industry and may help enhance the security of seaborne oil imports.

A large, state-flagged tanker fleet may help to ensure the security of China's oil imports because it could deter a future adversary from interdicting China-bound tankers to pressure China's leadership. This would be particularly true in crisis situations short of a shooting war. State flagging of tankers can be a legal prerequisite for military protection and raises the stakes for a potential blockader, who might otherwise see a distant blockade as a way to pressure China in such a crisis situation. The possibility also exists, however, that Chinese tanker operators may, in effect, be manipulating Beijing's oil insecurity for commercial gain. The key variable is the relationship between

China's government and its national oil companies, which, if left to their own devices, typically put profits before politics.

Some observers characterize China's tanker buildup as a centrally driven plan. This remains a point of contention. The authors' interviews with Chinese scholars familiar with the central government's current energy policies suggest that Beijing has no coherent plan at present for the creation of a national tanker fleet. However, articles from state-controlled Xinhua News Agency and *China Daily* feature analyst Luo Ping from the National Development and Reform Commission (NDRC)-affiliated Institute of Comprehensive Transportation calling for at least 60 percent of oil imports to be carried by Chinese shipping companies, which are now rapidly expanding their tanker fleets.⁷ According to *China Daily*, Peng Cuihong, a senior official at the Ministry of Communications' Water Transport Department, has stated that China will build additional oil tankers to reduce reliance on foreign tankers.⁸

Perhaps most significantly, a *China Daily* editorial (which would not appear without at least some form of tacit official sanction) echoes Luo's call:

As the world's second largest oil importer, our overseas supplies are vulnerable. Inadequate ocean shipping capacity is a weakness that could prove fatal. We have cause for worry with around 85 percent of our entire oil imports transported by foreign-flag vessels. This is acceptable when business is just business. But we are not in a perfect world. The best way to minimize our vulnerability is to increase our preparedness for less than normal times. It is well within our reach to have more than 60 percent of our oil imports carried by Chinese-flag tankers, if that is what we need for oil security. The government should not economize on this strategic national interest. It has the financial resources to make it happen. The subsequent shipbuilding orders will in turn be a major boost to home shipyards. The authorities' idea to encourage more domestic shipping companies to enter the ocean-faring business is a good one. . . . We can also handle the technology. Several domestic shipyards have been building large crude oil carriers for years. We applaud the Ministry of Communications' determination to upgrade our self-reliance in ocean shipping. It is an insightful decision that will help guarantee a more comfortable position in the kind of special times we hope will never come.⁹

Despite its increasing economic influence and growing presence in energy-rich areas around the world, China's lack of an energy ministry, and hence a lack of a clear centralized policy process, makes it difficult for outsiders to understand the formation and content of its energy policies. This is particularly true when dealing with maritime energy transport security,

which includes both economic and military concerns. Some Chinese scholars state that Beijing's energy policy is largely determined and articulated by NDRC, a branch of China's State Council. Premier Wen Jiabao reportedly devotes substantial time to energy issues as head of the State Council's Energy Leading Group, which solicits NDRC's inputs.¹⁰ NDRC documents tend to focus on general aspects of national energy consumption and conservation, however, not maritime or military issues. A variety of institutions in China's People's Liberation Army Navy (PLAN)¹¹ focuses on the security aspects of Chinese energy and likely influences PLAN energy strategy but is not easily accessible to foreign scholars.¹²

Analyzing China's energy transport industry will elucidate the larger, sometimes competing considerations that inform Beijing's quest for reliable energy supplies. China's oil tanker buildup appears to be driven primarily by commercial factors at present. The geopolitical implications of China's growing maritime trade and oil demand, however, necessitate careful examination of the impetus behind China's desire to increase its presence in the world tanker market.¹³ According to one PLAN researcher, China's maritime trade could equal \$1 trillion by 2020, nearly four times the 2006 figure of \$270 million (10 percent of China's gross domestic product).¹⁴ Because much of China's growing oil demand must be met with seaborne imports, Beijing's evolving oil transport practices may have significant maritime commercial and security repercussions in East Asia and beyond.

Beyond Taiwan

China's future tanker fleet could have significant geopolitical effects if China makes protecting oil and other resource shipments a major priority. China needs secure seaborne oil imports to sustain economic development. At the same time, at least some Chinese officials fear that the United States might seek to interrupt Chinese oil imports in a future conflict.¹⁵ In a speech to PLAN officers attending a Communist Party meeting on 27 December 2006, President Hu Jintao bluntly stated that China needs a "powerful . . . blue water" navy prepared to uphold national interests "at any time."¹⁶ This may entail creating a long-distance sea line of communication (SLOC) protection capacity.

Not surprisingly, China's 2006 defense white paper reiterates President Hu's assertions. This official appraisal of China's strategic environment and the proper responses thereto states that, "the impact of economic globalization is spreading into the political, security, and social fields. . . . Security

issues related to energy, resources, finance, information, and international shipping routes are mounting.”¹⁷ Many Chinese naval analysts’ writings echo the need to protect Chinese commerce far from Chinese shores.¹⁸ Yet to date, China’s naval modernization efforts appear to have been oriented almost exclusively to defense of China’s maritime periphery, and to solving the “Taiwan problem.” Protecting maritime resource supply lines may be a key driver of PLAN development for contingencies “beyond Taiwan.”

Some Chinese analysts advocate strengthening the PLAN so that it can intervene in trouble spots such as the Strait of Malacca.¹⁹ Wu Lei, a prominent Chinese energy scholar from Shanghai International Studies University, explains that “fear that the U.S might cut [energy shipments] off as a result of the deterioration of Sino–U.S. relations over the Taiwan issue drives much of Beijing’s modernization of its navy and air forces.”²⁰ Identifying and analyzing the strategic rationale behind China’s tanker-fleet expansion may help to illuminate China’s maritime development strategy.

Why an Expanded Tanker Fleet?

Despite likely future increases in oil imported overland, China will have to continue to rely on maritime transport for the majority of its increasing oil imports. This is partly for reasons of geography: 76 percent of Chinese oil imports in 2006 came from the Middle East and Africa.²¹ A new pipeline from Kazakhstan will likely carry up to 200,000 bpd within the next year and up to 400,000 bpd by 2011. A similar pipeline to supply China with 200,000 bpd of Russian oil will come fully online some time in 2009–10, adding as much as 500,000 bpd of total new overland supply.²² A major new oil field discovered in the Bohai Gulf by PetroChina could deliver up to 200,000 bpd within three years, for a total of ~700,000 bpd of additional nonmaritime oil supply by 2010.²³ Yet even assuming a conservative 8 percent growth in annual demand (as compared to 14.5 percent in 2006), Chinese oil demand would increase by more than 1 million bpd during that same three year period. Moreover, as table 1 indicates, seaborne oil imports are Beijing’s most cost-effective option. Thus, for the foreseeable future, China’s seaborne oil imports will continue to increase and to represent the dominant share of overall oil imports. In 2006, over 85 percent of oil entering China came by sea.

Table 1. Sample Oil Transport Costs to China

Transport Mode	Route	Distance	Total Cost (\$/barrel)	Cost/barrel/1,000 km
Tanker*	Ras Tanura-Ningbo	7,000 km	\$1.14	\$0.163
Pipeline**	Angarsk-Skovorodino	2,700 km	\$2.14	\$0.793
Train***	Angarsk-Manzhouli	1,000 km	\$7.19	\$7.19

* VLCC at \$65K/day, 2 million barrels cargo

** based on Russian Transneft tariff of 58¢/ton/100 km

*** based on weighted average of Russian Railway’s oil tariffs to Zabaikalsk and Naushki

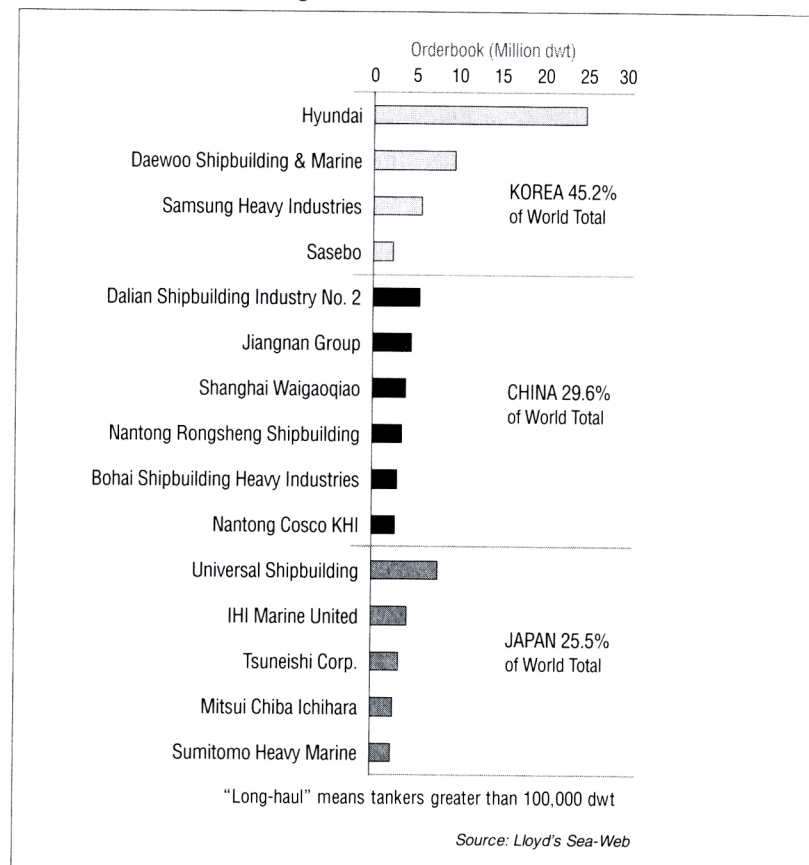
Perhaps driven by fear that major naval powers could sever China’s maritime oil supply lines, a growing contingent of Chinese analysts and policy-makers advocates major tanker fleet development. In August 2003, China’s government reportedly established a “Tanker Working Group,”²⁴ though this assertion that has been disputed by at least one prominent Chinese scholar.²⁵ By 2010, one source reports, Beijing intends to transport 40–50 percent of its oil imports in PRC-flagged tankers. By 2020, it hopes to carry 60–70 percent.²⁶ Chinese analysts predict that their country will need more than forty VLCCs by 2010, each of which will be able to carry upwards of 1.5 million barrels of oil in order to meet these goals.²⁷ For an explanation of various tanker designations, which are based on hauling capacity, see table 2.

Table 2. Tanker Size Guide

Panamax	50,000–80,000 dwt of capacity (1 ton = 7.33 barrels of oil)
Aframax	80,000–120,000 dwt
Suezmax	120,000–180,000 dwt
Very Large Crude Carrier (VLCC)	200,000–300,000 dwt
Ultra-large Crude Carrier (ULCC)	300,000–550,000 dwt

Beijing considers shipbuilding to be a strategic sector.²⁸ Although security concerns are, to some extent, driving China's tanker fleet buildup, its biggest short-term effects will probably be commercial. Japan and South Korea, in particular, face major competition from Chinese tanker builders. According to China State Shipbuilding Corporation's plan, by 2015 China will overtake Japan and South Korea to become the world's largest shipbuilder.²⁹ Figure 1 shows those tanker builders with total orders exceeding 2 million deadweight tons' (dwt) worth of shipping. It also depicts these firms' home countries' total share of new construction for long-haul tankers. With nearly 30 percent of global tanker orders, China has already displaced Japan as the world's second largest builder of long-haul tankers.

Figure 1. Main Global Long-Haul Tanker Builders



The Malacca Dilemma

More than 85 percent of Chinese oil and oil-product imports pass through the Strait of Malacca.³⁰ Some Chinese analysts fear that Malacca and other bottlenecks such as the Strait of Hormuz could easily be closed by terrorism, piracy, or the navies of the United States or regional powers in the event of a conflict over Taiwan or some other serious Sino-American crisis. They write that whoever controls Malacca also controls China's oil security, and that China's inability to secure Malacca would be "disastrous" for national security.³¹

To some Chinese analysts, the U.S. Navy is not the only threat to China's maritime energy supply lines. They worry that the rapidly modernizing Indian navy could use its superiority vis-à-vis China's PLAN in the Indian Ocean to gain strategic leverage.³² Beijing also distrusts Tokyo and worries about the capabilities of the Japanese Maritime Self-Defense Force due to historical enmity; because Japan competes with China for energy resources in Russia and the East China Sea; and because Japan is a major ally of the United States and cooperates closely on many strategic issues with India.

China will continue to rely on maritime oil shipments because there are simply no economically viable alternative means of shipping oil from most remote sources to China's refineries. For sources overseas, tankers are the only option. These maritime shipments, moreover, will likely pass through the Strait of Malacca for the foreseeable future. Despite its geographical funneling and the limited risks posed by terrorists and pirates, Malacca will remain a primary oil shipping route simply because of the cost (in additional time, fuel, and ships) of using alternative maritime routes such as the Lombok Strait, or even circumnavigating Australia.³³ Beijing will have to find a way to work within these realities.

Commercial Factors

Beijing's relationship with tanker operators is best characterized as "the government builds the stage and the companies play." The government sets certain ground rules, but the companies enjoy substantial freedom to pursue their own commercial objectives within understood limits. This relationship and understanding probably extends to building national oil transport capability as well.

Managers of shipping companies appear generally content to let the central government promote the shipbuilding/shipping industry at the broad

policy level. In fact a Chinese energy expert has told one of the authors the idea of a Chinese national oil tanker fleet, while widely discussed in various forums, is a “rhetorical device for China’s shipbuilding industry to justify more central government interest.”³⁴ Yet, like state oil companies, Chinese shipping companies may resist government interference in their daily operations. If chartering tankers to national and private operators worldwide on an individual basis is more profitable than serving Chinese national oil companies in accordance with central policy directives, shippers will favor the more profitable approach. Similarly, if national energy companies find it more cost-effective to have foreign tanker operators haul their oil, they may oppose a forced marriage with Chinese oil shipping firms. Observers will be able to learn more about these relationships once Chinese state-owned shipping firms such as China Ocean Shipping Corporation start taking large-scale VLCC deliveries, perhaps as early as late 2007 and early 2008. To better understand how Chinese shipping companies and national oil companies will interact, analysts will need access to significant chartering data spanning at least a year.

At present an estimated 90 percent of China’s oil shipping capacity serves foreign clients.³⁵ Reassigning these vessels to domestic firms would not help China’s long-distance oil transport situation. According to *Lloyd’s Sea Web*, only eighteen of these ships are VLCCs suitable for economically transporting crude oil from the Middle East, Africa, and other distant suppliers. The bulk of China’s current fleet consists of smaller Aframax, Panamax, and Handysize vessels designed for short-haul oil trading. China will need more than forty VLCCs to meet its goal of carrying 50 percent of imports on Chinese tankers by 2010.

Attempting to control maritime oil transport will likely cost more than outsourcing oil transport to private shippers. When the major Western oil companies (“Seven Sisters”) dominated the global oil market in the 1960s, they ran large maritime divisions with tankers dedicated to hauling their production, which for most roughly equaled their refinery throughputs. Oil companies trimmed their tanker fleets after the Organization of Petroleum Exporting Countries renationalized the majors’ Middle East production. Hiring private tankers to carry oil imports may be more cost effective than acquiring and maintaining a large tanker fleet. Although tanker rates have been strong over the past several years, the oil shipping business is highly cyclical, and when shipping rates fall, companies that paid high prices when rates were elevated will lose money. Like other modern oil companies, China’s national oil companies rely primarily on independent tanker opera-

tors to haul their oil. In 2006, Sinopec chartered two-thirds as many VLCC spot voyages as did ExxonMobil (103 to 149). In 2007, it may out-charter ExxonMobil.³⁶

If Beijing hopes to foster long-term strategic cooperation between domestic oil shippers and the national oil companies (some of which are among the world’s leading VLCC charterers), it may have to offer tax breaks and other financial incentives. Otherwise, the shipping firms will likely utilize their ships based almost exclusively on “nationality-blind” commercial criteria.

Financing

As table 3 indicates, several Chinese shipping firms that specialize in energy shipping, or have substantial positions in the business, have held initial public offerings of stock since 2005.³⁷ This is another indicator of the fundamentally commercial character of Chinese firms’ energy shipping operations. Because Chinese firms (particularly state-owned enterprises) are major employers and generate large tax revenues, it is unlikely that Beijing will permit them to sell controlling shares. Foreign and domestic investors are nevertheless likely to pursue these limited options because of restricted access to other investment opportunities within China’s energy sector and Beijing’s skillful linking of investment, technology transfer, and market access. A senior Chinese energy official has told one of the authors that China is constructing oil tankers not as part of a security-focused central government policy, but rather to gain economic benefits, particularly by reducing tanker financing rates.³⁸

Table 3. Chinese Energy Shipping IPOs

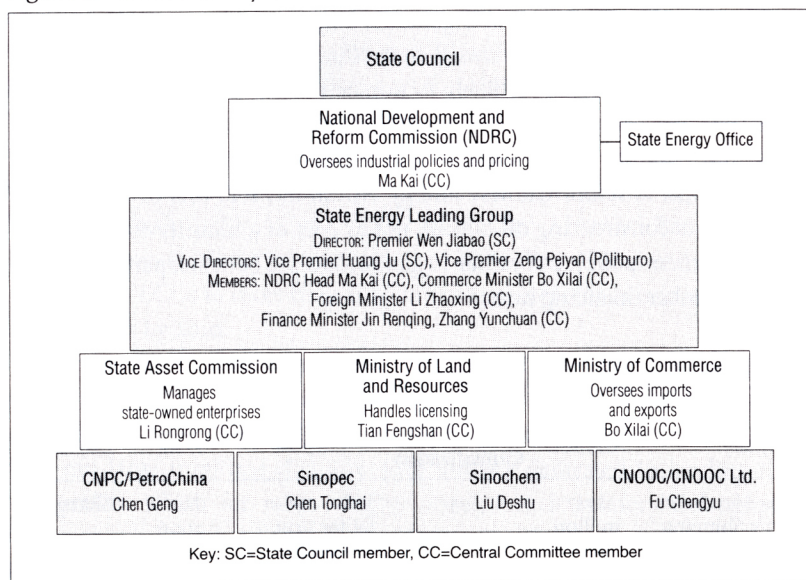
Company	Amount	% of Total Capitalization	Purpose	Date	Exchange
China Merchants Energy Shipping	\$727 million	35	Raise capital for fleet expansion	Nov. 2006	Shanghai
COSCO Holdings	\$1.22 billion	29	Boost international profile, raise capital	June 2005	Hong Kong

Sources: *Lloyd’s List*, *International Herald Tribune*, Nelson’s Public Company profiles

Shipping Sector Parallels with Oil Company–Central Government Relations

The relationships between China's national energy companies and central government may foreshadow how those between tanker operators and the central government will unfold. China's main oil producing and importing companies are China National Petroleum Corporation (CNPC), China National Offshore Oil Corporation (CNOOC), Sinopec, and Sinochem. Between 2000 and 2002, CNPC, Sinopec, and CNOOC all sold minority stakes to outside investors. CNPC and CNOOC made the publicly held portions of their firms into subsidiaries, PetroChina and CNOOC Limited. These share sales (typically around 20 percent) allowed the companies to raise operating cash and boost their international profile while retaining clear state control. Figure 2 illustrates Chinese oil companies' links to the central government.

Figure 2. China's Oil Pyramid



Although Chinese energy companies are state-controlled, their corporate interests frequently influence high-level energy policy decisions.³⁹ It is widely believed, for instance, that much of the initial impetus behind China's "go out" oil field acquisition push actually came from CNPC.⁴⁰

Over the past decade, Chinese national oil companies have adhered to a business model unlike that of Western firms. They are often criticized for subverting the market by offering "package deals" backed by state banks' soft loans and other enticements. Chinese state-owned companies are willing to "overpay" for deals and often accept lower rates of return than private oil companies. These tendencies stem from a combination of relative inexperience in international energy deal-making, access to subsidized financing from Chinese state banks, low accountability to shareholders, and nonbusiness incentives created by top executives' dual company and Party roles.

That said, Chinese oil companies appear to be placing increased emphasis on profitability. For example, PetroChina oil marketers have stated that transporting back to China oil produced in distant fields is too expensive.⁴¹ In accordance with sound business principles, they favor selling local production locally and acquiring crude oil for Chinese use closer to home.

Had CNOOC successfully acquired American producer Union Oil Company of California (UNOCAL) in summer 2005, it would probably have continued to sell UNOCAL's Gulf of Mexico production on the U.S. market because it made greater economic sense to do so. Likewise, CNPC often sells a substantial portion of its Sudanese production on the world market rather than shipping it back to China.⁴² This suggests that despite the "go out" policy's political overtones, Chinese producers' crude oil shipping decisions tend to be driven by economic rather than strategic concerns.

The shipping industry's incentives for expansion appear similar to those of most Chinese oil and gas producers. The "national oil, nationally carried" oil transport concept parallels the "go out" oil acquisition policy. Both approaches involve commercial interests pursuing profits under the banner of enhancing national energy security.

Aggressively seeking deals overseas allows Chinese oil companies to expand production while casting themselves as "servants of the Chinese nation" by generating tax revenue and increasing the import share of Chinese-produced oil. State energy companies generate more than 20 percent of all tax revenue produced by state-owned enterprises.⁴³ Such contributions please the Communist Party, which can influence oil executives' future prospects. Many top executives have occupied, and in some cases continue to occupy, high-level political positions in conjunction with their business roles. For example, CNPC president Jiang Jiemin has served as governor of Qinghai province, and Sinochem vice president Zhang Zhiyin is a delegate to the 10th National People's Congress. In addition, there exists an informal "revolving door" by which good performance at the helm of an oil company

can greatly advance an official's career. Wei Liucheng successfully managed CNOOC Limited's initial public offering in 2001 and was rewarded with governorship of Hainan upon leaving CNOOC in 2003.⁴⁴

Some shipping industry executives also have political careers. Dr. Qin Xiao, chairman of China Merchants Group, is a member of the 10th Chinese People's Political Consultative Conference and served as a deputy to the 9th National People's Congress.⁴⁵ Generally, however, successful shipping executives do not yet seem to enjoy as many plum positions as do their oil industry counterparts. Nonetheless, China's shipping industry is acquiring the aggregate financial clout to justify an important political role. As it continues to grow, its location along China's populous, politically influential east coast, growing ranks of workers, and contribution to national and local coffers may give it more political influence. Thus, if China's shipping industry generates sufficient profits and tax revenue, political rewards for shipping managers will likely resemble those currently enjoyed by successful oil executives.

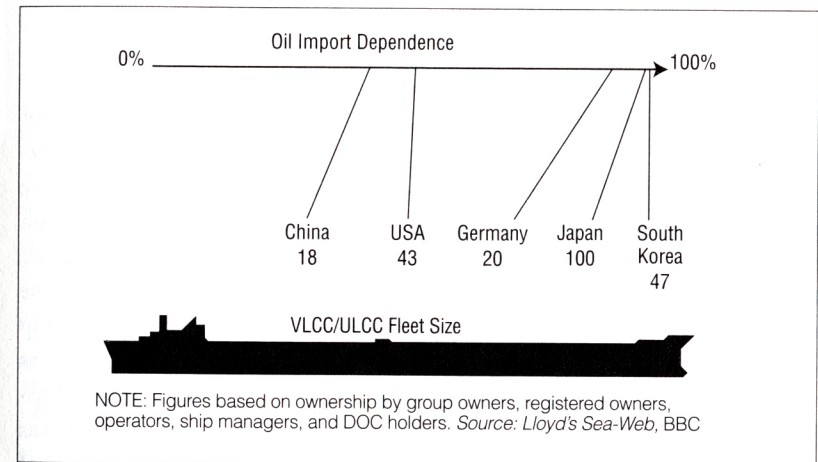
On the whole, China's state shipyards and shipping companies appear to be broadly following the model of the state oil and gas companies. In peacetime, state-controlled oil carriers will attempt to influence government policies in ways beneficial to their business but, when the government wants something in return, will ultimately put profit before politics. In a crisis scenario, by contrast, state-owned vessels would stand ready to be pressed into service, Chinese analysts write.⁴⁶ Having a state tanker fleet is not an oil security panacea, however. Potential flaws in China's emerging approach will be discussed shortly.

China's Shipbuilding Industry

Beijing has powerful economic incentives to bolster its shipbuilding sector. Shipbuilding strengthens the entire industrial chain, including the steel industry, the metallurgical and machine-tool sectors, and others. VLCCs recently built in Chinese yards have required approximately 884,000 man-hours to complete.⁴⁷ Chinese sources calculate that, in general, every 10,000 dwt built can create 100,000–200,000 man-hours of employment for Chinese workers.⁴⁸ Thus, direct shipyard labor accounts for only about 15–20 percent of the entire amount of employment generated by building a ship. At present, China's shipbuilding industry directly employs more than 275,000 workers.⁴⁹ Thus, on the basis of job creation alone, China's government has good reason to support its shipbuilders.

As mentioned earlier, Chinese ship owners and operators presently control eighteen VLCCs. Roughly half of the vessels (by hulls, not tonnage) in China's fleet are small, old tankers better suited for the coastal and short haul trades than for international oil transport. Meng Qinglin, a senior manager of Dalian Ocean Shipping Company, estimates that Chinese tankers are 30 percent older than the international norm.⁵⁰ The ships' average carrying capacity is also better suited to medium-distance oil carriage, rather than the long trip from Africa or the Persian Gulf, as Chinese crude oil tankers average 116,000 dwt (as opposed to the Japanese fleet's average of nearly 200,000 dwt per vessel). Figure 3 compares China's current VLCC fleet with those of other major oil importers.

Figure 3. Oil Import Dependency vs. Tanker Fleet Size



While China's VLCC fleet is smaller than those of more oil-reliant nations, this is changing rapidly as a combination of government policies, domestic commercial interests, and sizeable commercial advantages in building tankers drive increasing tanker construction in Chinese yards. Tankers form a major portion of Chinese yards' output and will continue to do so, as shown in figure 4. It should be noted that the majority of Chinese yards' long-haul tanker orders are actually being built for foreign buyers.

Figure 4. PRC Shipbuilding Production by Deadweight 1989–2009

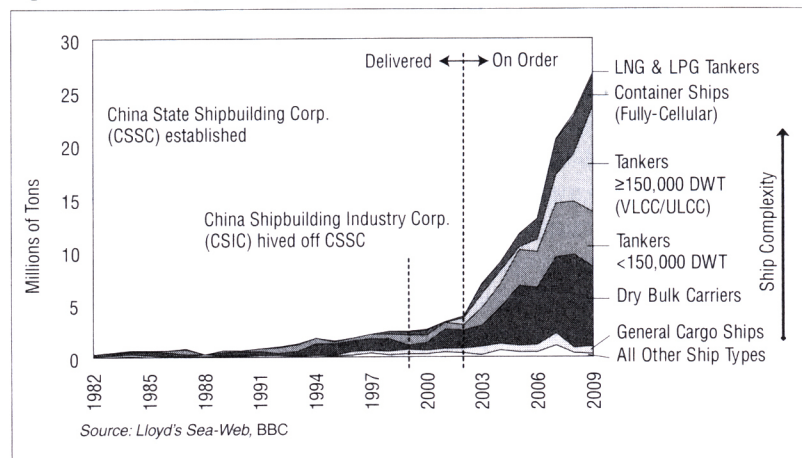


Figure 4 demonstrates the success of Chinese firms in winning orders for new tankers. According to *Lloyd's Sea Web*, of the 21 million dwt of Suezmaxes and VLCCs currently on order or under construction in Chinese yards, roughly 13 million dwt are being built for foreign operators. Although China lags Japan and Korea in technology and yard management practices, the large number of foreign tanker orders seems to endorse the Chinese shipbuilding industry's increasing quality at unbeatable prices. Western ship owners interviewed by the authors indicate that Chinese yards' low prices as well as a desire to establish relationships with rapidly growing Chinese shipbuilders drive their current orders.⁵¹ Chinese ship quality, which recently was suspect, is rapidly improving, even if it has not yet reached the high level of South Korean- and Japanese-built vessels. Recognizing this increase in quality, foreign buyers are considering ordering chemical tankers and other more complex ships, in addition to the tankers and bulk carriers that have thus far dominated their orders.⁵²

While two of China's large state-run shipyards (Shanghai Waigaoqiao and Dalian No. 2) are considered to be among the world's top ten, other yards still experience regular delays and quality control problems. China's entire ship subcomponents industry remains weak, creating a situation in which Chinese yards are excellent at hull fabrication but must import many key internal parts. Indeed, South Korean builders have even begun to construct hull blocks in China and barge them back to South Korea for final assembly. To boost the subcomponents industry, Chinese yards often force ship buyers

to source engines and other subcomponents in China when they order vessels. Otherwise, ship buyers interviewed by the authors indicate, both they and the ship operators would favor Korean- and Japanese-made engines and other internal parts.⁵³ In sum, China's low labor costs and large land areas for yard expansion give it a distinct edge in building bulk carriers, tankers, and other less complex "commodity" ships. Chinese yards' current order books indicate a continued focus on building tankers and bulk carriers over the next two to three years. Table 4 summarizes Chinese shipbuilders' strengths and weaknesses relative to those of their primary competitors.

Table 4. Chinese Shipbuilding Industry vs. Main Competitors

PRC	Japan/South Korea
Bulk of ships built are of low complexity.	More proficient at high-value ship construction.
Lower prices.	Higher prices.
Gaining technological proficiency, but still behind state-of-the-art.	Main yards are technologically state-of-the-art.
Relatively weak domestic innovation capacity.	High domestic innovation capacity.
Willing to customize ships.	Emphasize series production, little customization.
Lower labor costs.	High labor costs, but partially offset by higher technical proficiency.
Has significant land area for physical expansion.	Must build yards overseas and outsource, since space for expansion is scarce.
Extensive co-siting of commercial and military shipbuilding.	Commercial and military shipbuilding separated. Much less military shipbuilding activity at present.
Quality control problems.	Excellent quality control.
Problems with on-time delivery.	Timely delivery.
Weak marine equipment industry (only 40% of ship equipment is domestic).	Japan has strong marine equipment industry (95% of ship equipment is domestic); 85% of South Korea ship equipment is domestic.
Lower degree of integration between shipbuilding and supporting industries such as steel and marine equipment.	Higher integration due to old industrial groupings (<i>keiretsu</i> and <i>chaebols</i>).

Shipbuilding seen as a "pillar industry" in all three countries. The idea is that the industry can promote wider industrial development.

Broader Effect on the Tanker Market?

Some Chinese observers worry that China's aggressive tanker-building program, which is occurring amid record high tanker chartering rates and profits, could outstrip demand and depress tanker rates.⁵⁴ Some advocate acquiring secondhand tankers as an antidote. Building tankers without close regard for what the ship market can absorb might depress freight rates, however, and could create a situation in which Chinese shipyards profit while shipping companies suffer losses. Many tankers under construction today will enter the market in 2008–9. Continuing strong oil demand growth in the developing world (particularly Asia) will have to be met primarily with long-haul crude imports from the Middle East and could help underpin the VLCC market. Russia's delays in bringing East Siberian crude onto the Asian market may also uphold demand for VLCCs to carry Middle East and African crude. Long-haul product exports from the Middle East will also create incremental VLCC demand in coming years.

Changes to the market for new ships may also increase China's shipbuilding market share without causing undue depression of shipping rates. For example, shipping industry personnel interviewed by the authors indicate that Japanese heavy industrial firms are considering making a gradual exit from shipbuilding. This would open market share for Chinese shipyards, possibly allowing them to accelerate construction efforts without overbuilding.

Benefits for Oil Import Infrastructure

In 2005 only three ports—Qingdao, Zhoushan, and Shuidong—could directly berth tankers displacing 200,000 dwt or more, such as the VLCCs that deliver crude from Africa and the Middle East. Consequently, China is rapidly preparing specialized facilities at Ningbo, Quanzhou, and Maoming on China's southeast coast to handle 200,000–250,000 dwt oil tankers.⁵⁵

Connecting oil ports with users throughout the country has become a major priority. Chinese analysts recommend rapidly upgrading China's oil transport system (e.g., pipelines, harbors, ships, shipyards, and oil transport lines), along with governing laws and regulations.⁵⁶ In particular, improving China's domestic oil pipeline network would enhance energy security. Robust capacity to shift oil supplies rapidly between major demand and import areas would introduce a degree of redundancy in case an incident closed one or more major VLCC-capable ports. An improved pipeline network would also bolster the effectiveness of China's growing strategic petroleum reserve by

allowing rapid infusion of supplies into an integrated market in the event of a crisis. By 2010, Chinese companies plan to expand the country's pipeline network for oil, gas, and other products from 40,000 to 65,000 km.⁵⁷

Can a Larger Tanker Fleet Ensure Oil Security?

Chinese analysts fear that the U.S. Navy, and even allied navies, might blockade energy shipments to China in a showdown over Taiwan or some other crisis.⁵⁸ Chinese “hawks” such as Zhang Wenmu believe that China's Navy must modernize because its ability to secure SLOC and ensure the safety of China-bound shipments seriously lags behind China's growing import demand.⁵⁹ In their view, a national tanker fleet would bolster the security of the nation's oil supply only if PLAN units had the capability to escort Chinese tankers in a crisis.

China may also be concerned that an outside power could exert financial and diplomatic pressure on the home countries of major tanker operators (e.g., Greece or the Bahamas) to force them to cease carrying oil to China. Chinese analysts emphasize that the United States in particular has demonstrated a robust capability to bring comprehensive financial, military, and diplomatic pressure to bear on adversaries. Having the capacity to haul a majority of Chinese oil imports on vessels owned by Chinese state and private shipping companies would ensure that an opponent could not use such a tactic to pressure China in a situation short of war.

Some Chinese analysts claim that using Chinese-flagged and -operated tankers would help secure oil shipments from unstable areas such as Africa and the Middle East.⁶⁰ To be sure, a national tanker fleet cannot protect oil importers from the internal security problems endemic to many oil-exporting countries. Civil war, terrorism, and many other factors could prevent supplies from ever reaching Chinese tankers. Yet while the internal instability of supplier countries may be unavoidable, an importer with its own tanker fleet and a blue water navy enjoys greater ability to ensure energy security once the oil leaves the exporting country. Protecting tankers and downstream infrastructure (e.g., refineries and distribution networks) is usually simpler than trying to protect oil fields in distant countries jealous of their sovereignty. Protecting an “upstream” oil or gas field thousands of miles away would entail a large, rapid joint military deployment that is beyond the capability of nearly all oil importers other than the United States. And even if an importer boasted substantial force projection ability, its response would likely come too late

to prevent a supply cutoff. It is unclear to what extent some of China's more hawkish and mercantilist analysts have considered these realities.

Tanker Protection Options

Tankers can be protected with escorts and by convoying. Shippers resist convoy operations because it hinders their flexibility and adds costs. Naval officers likewise tend to dislike escort missions, which cede the initiative almost entirely to the enemy. Convoying is also highly asset-intensive, particularly when facing aerial, surface, and subsurface threats. Assuming that two VLCCs per day would be needed to meet Chinese oil demand, the logistics of implementing such a convoy system would overwhelm today's PLAN. A weekly group of fourteen VLCCs would require roundtrip steaming time of thirty-three days from the Persian Gulf to China, plus a two-day turnaround period to take on supplies and cargo. This thirty-five-day cycle, repeated weekly, would likely correspond to a need for more than twenty-five escorting surface warships and support vessels. Logistics ships would be necessary to refuel the escorts on both the inbound and outbound legs of the voyage (since PLAN-escorted VLCCs would be vulnerable to attack when transiting the Indian Ocean after offloading in China). Additional ships would likely be required to perform maintenance and repair on the escorts.⁶¹

This rough calculation gives a basic idea of the tremendous number of surface warships required to escort convoys. Even if China's navy acquired sufficient surface combatants in the coming years to perform sustained convoy operations, China's leadership would still be forced to choose between escorting tankers and keeping sufficient forces in the main theater of conflict to win the fight that triggered the blockade. Recognizing this reality, a number of Chinese analysts write that it will be some time before China can realistically defend distant energy SLOC.⁶²

The second strategy for protecting shipping entails taking the fight to the enemy, attacking his bases, and driving him from the area. A Chinese doctrinal textbook notes that in order to avoid continually fighting at a time and place of the enemy's choosing, protective forces would have to work aggressively and "attack the enemy force immediately after locating it." The authors also emphasize that "covering forces should attack the enemy first in an effort to destroy the attacking enemy before it unfolds or uses weapons."⁶³ To accomplish these objectives, however, Chinese forces would need to achieve sea and air control at a specific time and place (i.e., where the ships being

escorted are at any particular moment), a capability that China has yet to demonstrate far from its shores.

Implications of Further Chinese Naval Development

The pattern of Chinese naval acquisitions in recent years suggests that Beijing is not seeking to directly escort tankers, at least for now. To be sure, China has a growing modern submarine force (including roughly fifty-eight attack submarines, albeit at varying levels of readiness), new land-attack cruise missiles, long-range strike aircraft, and a formidable ballistic-missile force with which it could attack the bases of any country that imposed a blockade or lent its support to the blockading power. China's navy also has approximately seventy-two major surface combatants, fifty medium and heavy amphibious lift vessels, and forty-one coastal missile patrol craft.⁶⁴ At present, China is simultaneously building two classes of attack submarine (Yuan and Type 093) and purchasing one (the Kilo) from Russia. These submarines could eventually launch land-attack cruise missiles such as Russia's 300 km range Klub or China's Dong Hai-10, the latter reportedly having been test-fired and designed to strike targets 1,500 km away.⁶⁵ These missiles might have a maritime strike mission.⁶⁶ Finally, the PLA's 2nd Artillery commands a force of more than nine hundred short- and medium-range ballistic missiles.⁶⁷

Most of the naval platforms that China is currently developing, however, with the exception of its Type 094 SSBNs and Type 071 landing platform docks, seem to have been acquired with a clear focus on a Taiwan contingency, rather than on escorting oil tankers over long ranges. Some of China's more modern ships and aircraft do have the necessary endurance and weapons to project combat power slightly farther, into the South China Sea, and to a limited extent, into parts of the Western Pacific. The PLAN's limited number of oilers, tenders, and other replenishment vessels severely constrains China's long-distance operational capability, however. China's burgeoning shipbuilding industry has the wherewithal to produce large numbers of these, but shipbuilders have so far focused on commercial vessels.

Nevertheless, China's rapidly increasing defense budget (officially \$45 billion in 2007⁶⁸ and estimated by the U.S. Defense Intelligence Agency to be as high as \$85 billion to \$125 billion for that same year⁶⁹) may allow for an ambitious building program. In fifteen to twenty years, China could acquire the capability to execute long-distance SLOC protection missions. Already, for instance, China's new J-10, SU 27, J-11, and SU-30 aircraft, and the weapons they can carry, represent a major improvement over their predecessors.

Of course, Chinese forces still must master aerial refueling in order to make these aircraft relevant in a distant SLOC defense campaign. In their studies of Operation El Dorado Canyon (the U.S. attack on Libya in 1986) and other U.S. aerial campaigns, Chinese analysts note that aerial refueling can give tactical aircraft (such as the SU-30 or J-10) strategic strike range.⁷⁰

China is also developing significant missile capabilities that would be useful in a SLOC protection campaign. China's formidable SS-N-22 Sunburn supersonic antiship cruise missile (ASCM) can be fired from its four Russian-made Sovremennyy-class cruisers. Every surface warship launched by China in the past decade (with the possible exception of the new landing platform dock) carries sophisticated, long-range YJ-series ASCMs, which compare well with foreign systems. It is important to recall that a single Chinese-made C-802, which is likely less capable than China's newer ASCMs, nearly sank an Israeli Haanit-class frigate during the summer 2006 war between Israel and Hezbollah.⁷¹ China is also thought to be in the process of developing antiship homing warheads for its ballistic missiles, which would be extraordinarily difficult to defend against.⁷²

Surface vessels operating far from their home ports would also require strong organic air defense capabilities. Rapid improvements in air defense and surface warfare are already evident in the PLAN's three most recent classes of surface combatants, all of which mount sophisticated air search and missile guidance radars, and long-ranged vertically launched surface to air missiles (SAMs). China's Luyang II destroyers (hulls 170 and 171) carry the HHQ-9 SAMs, its two Luzhou-class destroyers have a marinized SA-20, and its four or five Jiangkai II frigates under construction in early 2007 have vertical launch cells and phased array and guidance radars that suggest a similar capability.

These measures will gradually enhance China's power projection options. "The long-range SAM systems [that the Luzhou and Luyang II destroyers] possess will provide Chinese surface combatants with an area air defense capability as they operate farther from shore and outside of the protection of land-based air defense assets," states Scott Bray, deputy senior intelligence officer for China in the U.S. Navy's Office of Naval Intelligence. "Under the protection afforded by these advanced area air defense destroyers, which are also equipped with long-range ASCMs, the Chinese Navy can operate combatants such as two recently acquired Sovremennyy II [destroyers]. These long-range engagement and air defense capabilities now being fielded by the PLA(N) give China a significantly improved capacity for operations beyond the littoral in support of SLOC protection."⁷³

Improved destroyers and air defenses will not alone afford China SLOC defense capabilities, however. China's navy presently lacks a robust antisubmarine warfare (ASW) capability. As such, PLAN ships engaged in distant SLOC protection would be highly vulnerable to an adversary's attack submarines and mines.⁷⁴ Although the PLAN's newer large surface combatants can carry ASW helicopters, most appear to lack modern hull-mounted or towed sonars.⁷⁵ There is also little evidence that China is in the process of acquiring truly long-range maritime patrol aircraft, which are essential for ASW missions.

China's growing retaliatory capacity would help to insulate it from coercive pressure short of war. In the event of hostilities, China might be able to deny outside forces access to its maritime periphery, or launch retaliatory attacks against enemy forces in portions of SLOC nearest to China. But while China has made substantial qualitative improvements in its navy over the past decade, thereby avoiding the block obsolescence of several platforms, it does not yet possess the overall force structure to support multiple missions to defend contested SLOC. "At present," the U.S. Department of Defense judged in 2007, "China can neither protect its foreign energy supplies nor the routes on which they travel, including the Straits of Malacca."⁷⁶

Should China develop significant SLOC defense capabilities in coming years, several indicators will be apparent to foreign analysts. First, China would have to purchase or produce a substantial contingent of long-range oilers, tenders, and other replenishment vessels. Such prioritization of naval construction might require the establishment of shipyards dedicated to military ship production. Second, China would have to acquire reliable overseas bases (e.g., in the Indian Ocean). As James Mulvenon has emphasized in his chapter, this would seem to represent a significant departure from Chinese foreign policy post-1949, a central tenet of which has been commitment to forego the permanent basing of military forces in other nations.⁷⁷ Third, in order to achieve viable, lethal ASW capabilities, a substantial force of PLAN nuclear attack submarines would need to go on frequent extended deployments. Such a force has proved enormously difficult and expensive for the U.S.S.R., and even the United States, to acquire. In order to increase its power projection capabilities, China might also develop some form of deck aviation (e.g., one or more aircraft or helicopter carriers), or even hospital ships. Finally, to achieve high levels of presence and readiness, China's navy would have to deploy a substantial portion of its forces at all times. To support this increased operational tempo the PLAN would need to develop the ability to conduct sophisticated repairs to ships remotely—either through

tenders or overseas repair facilities. This would also require the maturation of advanced levels of doctrine, training, and human capacity, none of which are currently obviously present in China's navy, but all of which are well within the capability of China to develop.⁷⁸

Calling an Opponent's Bluff

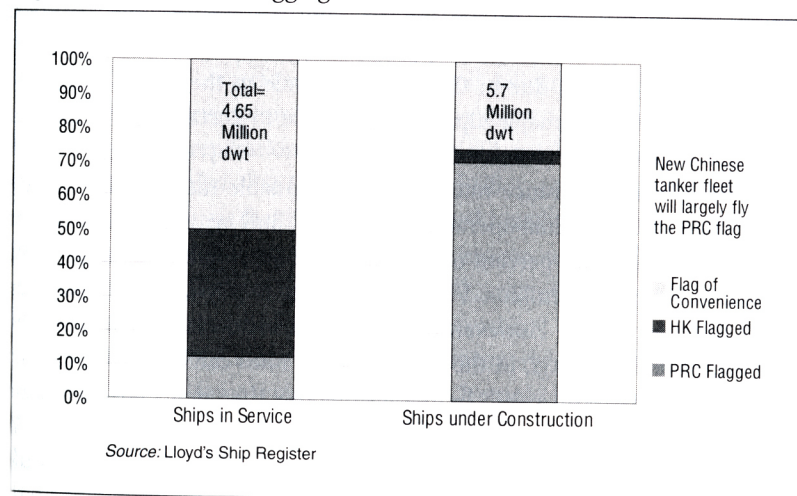
Unless China's navy can attain outright naval and air superiority in a given sea zone, carrying oil in Chinese-flagged tankers during wartime might render Beijing *more* vulnerable to interdiction of its energy supply because—at least in theory—foreign navies could easily determine which tankers were bound for China. It might seem, then, that absent a substantial blue water naval capability—which may be decades away—China is making itself a target by constructing a state-controlled, Chinese-flagged tanker fleet.

If so, Beijing's best option might be to rely on private third-party tanker operators, whose deliveries could be effectively stopped only by a close blockade of Chinese ports—in turn exposing the blockading state's naval forces to a wide range of military threats and almost certainly sparking a larger conflict whose repercussions would presumably exceed any likely political gains for that state. Alternatively, reflagging Chinese-owned tankers to Liberia, Panama, or another flag-of-convenience state would force an interdicting navy to go to much greater lengths to identify a tanker's ownership and ultimate destination.

Nonetheless, because of international legal norms, having a Chinese-flagged tanker fleet import oil for the government might indeed help to ensure China's energy security during crises short of war. It is likely not lost on China that embargoes and other forms of economic coercion are a key nonkinetic instrument that major powers may use to pressure a foe. Under international law, a PRC-flagged tanker in government service would enjoy the substantial protection of China's flag. If an outside power interdicted such a vessel, China would have grounds to claim that its sovereignty had been breached sufficiently to threaten its national well-being, thereby justifying a serious armed response. The escalatory barrier created by putting state-flagged vessels into government service would thus deter adversaries from interdicting PRC oil shipments unless hostilities were either imminent or already underway. While legal norms are sometimes disputed, sidestepped, or even ignored in wartime, it is difficult to imagine a scenario short of major war in which an adversary would risk triggering escalatory behavior by Beijing.

PRC-flagged tankers hauling oil for any of the state-controlled Chinese producers may be deemed by some states to meet the criteria for sovereign immune status. During a crisis, moreover, oil carried on Chinese-flagged tankers not already being shipped on behalf of PRC state-owned oil companies could rapidly be resold at sea to any number of PRC government entities, thus creating the necessary legal conditions to assert sovereign immune status for the tanker.⁷⁹ Based on *Lloyd's Sea Web* data, thirty-one of the forty-two VLCCs currently on order in Chinese yards for Chinese shipping companies are slated to fly the PRC flag (of the other eleven, five will be Panamanian-flagged and six will fly the Hong Kong S.A.R.'s flag). Figure 5 depicts China's increasing propensity to place its VLCCs, which would be the primary vessels hauling oil through the Indian Ocean and other potentially vulnerable SLOC, under Chinese flag.

Figure 5. PRC Tanker Flagging



Even without state flagging, normal commercial factors would make a distant oil blockade of China extremely difficult to implement, even during full-scale hostilities. Several factors make interdicting private tankers at sea difficult in practice. The oil shipping sector is highly globalized (e.g., with tankers perhaps owned by a Norwegian company registered in the Bahamas, commanded by a Dutch captain, flagged in Panama, crewed by Pakistanis and Filipinos, carrying oil originating in Saudi Arabia to Japanese buyers).

This national diversity makes it extremely difficult to determine a tanker's ultimate destination.

At any given time, a tanker's bill of lading might not accurately reflect the true end destination of its oil cargo. The oil market is also highly liquid, allowing oil cargoes to be bought and sold at sea. In normal commerce, cargoes may be bought and sold dozens of times while still on the high seas; some may change hands thirty times between time of loading in the Persian Gulf or West Africa and arrival at the final destination in East Asia or Europe. Additionally, supertankers often carry "parceled out" cargoes (i.e., 500,000 barrels may be bound for Singapore, 500,000 barrels for South Korea, and 1,000,000 barrels for Japan or China). Bills of lading can also easily be falsified, a technique regularly used by smugglers, to pass through a distant blockade set up in the Malacca Strait or another chokepoint far from the Chinese coast.⁸⁰ Finally, unless the blockading power were willing to risk environmental disaster by disabling or sinking uncooperative tankers, it would likely lack sufficient military assets to board and take control of such ships, as fifty-two oil tankers per day pass through the Malacca Strait alone.⁸¹ Compounding matters, due to China's crucial role in the global economy, blockaders would face major diplomatic pressure to curtail their operation and allow normal trade to resume.

Seeking lower insurance rates is another possible rationale for a state tanker fleet. Under normal operating conditions, hull insurance for a tanker is between 2.5 and 3.75 percent of ship value on an annualized basis. Thus, the operator of a \$130 million VLCC can expect to pay \$8,900–13,300 per day in insurance costs. However, if insurance firms declare an area a War Risk Exclusion Zone (e.g., in the Persian Gulf), rates can climb to 7.5 to 10 percent of ship value on a *daily* basis, meaning that the same VLCC operator would now have to pay between \$8.9 and \$13.3 million per day to insure his or her ship while it was in the danger zone. Assuming three days in the Gulf each time the vessel loaded oil, the operator would have to pay from \$26.7 to \$39.9 million per trip. Even in the best of markets, VLCCs rarely command more than \$100,000 per day. Yet to pay off the projected war risk insurance costs, a VLCC making the thirty-three-day trip from the Gulf to East Asia would have to earn more than \$1 million per day—an unrealistic sum.

Commercial ship owners would only operate under such conditions if an outside power either paid them such rates or offered insurance and a guaranteed profit payment as part of an oil transport deal. State-owned ships could conceivably self-insure and forego paying insurance premiums in order to maintain continued oil delivery service to the home country. For all these

reasons, a domestically flagged tanker fleet makes some strategic sense, at least from Beijing's security-focused perspective.

Security Implications

Not all contingencies threatening Chinese energy security involve an armed conflict. A terrorist attack on a Saudi export terminal that suddenly tightened world oil markets, for example, might be sufficient to trigger a government "call" on state-run tankers.⁸² It might prove difficult for Beijing to press PRC-flagged tankers into state service during a crisis, however. Assuming that PRC tanker operators followed normal peacetime operating principles, their VLCCs could be chartered out to shippers in places as far afield as Nigeria, Venezuela, or northwest Europe. Given the distances involved, it might take thirty days or more for these vessels to reach Chinese ports, even if they immediately broke contracts and headed for China.

If it had advance warning, China's central government might notify tanker operators ahead of time, pay contract termination penalties, and reposition state-owned tankers for crisis oil deliveries. However, numerous commercial observers carefully track tanker movements, meaning that even covert Chinese preparations would be noticed quickly. Other major powers would rapidly realize that China was marshalling assets and might interpret such actions as a sign that Beijing anticipated hostilities. Rather than helping to ensure national security, therefore, a decision to call on PRC-flagged tankers during times of major tension could well cause other actors to assume the worst—thereby precipitating a more serious crisis.

The security of China's maritime oil transport lies in the inherent difficulties facing any force trying to disrupt it. It would be very difficult to interdict private tankers bound for Chinese ports. The global oil market is highly fungible; ship destinations are unclear because cargoes are often resold at sea; and oil can be transshipped to China through third ports in the region. In addition, the number of tankers transiting key chokepoints would likely far exceed any potential blockading navy's physical ability to take control of uncooperative ships, unless it were willing to accept the diplomatic, environmental, and military consequences of using disabling fire.⁸³ These factors, in addition to the legal considerations mentioned earlier, explain both Chinese preoccupation with acquiring state-flagged tankers and why during peacetime Beijing can allow Chinese shipping companies to operate them under normal commercial principles.

Conclusion

Anxiety over the security of maritime oil supply is one factor shaping decision making as interested actors promote the development of a large Chinese tanker fleet and Beijing contemplates the construction of a blue water navy. For the foreseeable future, particularly during peacetime, Chinese tanker operators will work almost exclusively within the framework of the existing global tanker market. Circumventing this system by forcing Chinese shippers to serve Chinese oil producers at any cost would be economically unsound. Energy subsidies are a parallel case in point. China already pays its state oil companies billions of dollars in subsidies annually to compensate them for losses they incur by purchasing oil at market prices and selling products made from that oil at government-capped rates within China. Already pressures are mounting for Beijing to reduce these and other energy subsidies, which have recently resulted in supply shortages.⁸⁴

Tanker operations driven by economic opportunity are likely to be more profitable than those driven by state directives. Moreover, commercial deals with foreign tanker operators will tend to further integrate Chinese shipping and shipbuilding firms into the global oil shipping sector. The precedent set by China's national energy companies in emphasizing profit over politics whenever possible (e.g., in equity oil sales to the international market rather than to China) also favors the adoption of a largely commercial approach to tanker fleet operation. Although China has spent billions of dollars on overseas equity oil acquisitions, the flagship state firm CNPC sells a sizeable portion of its equity oil on the international market.⁸⁵

Given the Chinese leadership's current bias toward state-led oil security policies, Beijing likely hopes that Chinese shippers will come to haul a large percentage of China's oil imports. However, the final outcome will likely depend much more heavily on shipping economics than it does on politics. In essence, if a Chinese VLCC working for a Chinese oil company is making \$50,000 per day, but could generate \$60,000 per day on a different route serving an international oil company, absent substantial incentives or compulsion from China's government, it will choose the more profitable route. China's central government faces an uphill fight in coordinating energy policy in general, let alone oil transportation policy. Indeed, in recent discussions, a well-placed Chinese energy policy expert indicated that the process of establishing an Energy Ministry has been arduous and that the plan could fail.⁸⁶

Chinese state and private companies seek to profit from shipbuilding and tanker operation during peacetime while the government likely believes that

it is hedging its bets against future threats to oil shipments by supporting a large tanker buildup. Security concerns are probably shaping Beijing's desire and efforts to have Chinese tankers haul Chinese crude imports. To date, China has been "free riding" on the U.S. Navy's global SLOC security guarantee. Yet China's rising maritime energy interests and naval power could lead it to seek a much more active SLOC security role. A steady and secure supply of oil and other imported resources fuels the economic growth that helps the Chinese Communist Party maintain its hold on power. Thus, anything that disrupts this flow would represent a grave threat to regime survival and Beijing could be expected to react strongly. Over the longer term, as China develops greater international interests, increasing comprehensive national power and confidence vis-à-vis Taiwan's status may finally allow China's navy to cast its strategic sights on blue waters and develop power projection capabilities sufficient to protect Chinese tankers progressively farther afield.

As such, in coming years, China's growing oil and gas import needs, together with the actions Beijing is taking to secure those supplies, have the potential to become a serious international maritime security issue. As the PLAN continues to modernize, outside observers should bear in mind that nations' intentions and desires often grow in parallel with expanding capabilities. Energy and resource supply security may thus become a powerful "beyond Taiwan" driver of Chinese blue water naval development.

As the next Five Year Plan takes shape, China's leaders will make crucial decisions concerning the extent to which China's navy should expand its power projection ability, a factor closely related to China's energy strategy. These decisions, in turn, will shape strategic perceptions, doctrine, and force structures for the next ten to twenty years. Identifying and analyzing the strategic rationale behind China's apparent intent to create a state-led tanker fleet expansion can help inform U.S. strategy and policies concerning China, particularly as Washington clarifies and implements its own maritime strategy.

Washington should use this window of opportunity to make the case to Beijing that, for the time being, the world oil market is a far better guarantor of energy security than a state tanker fleet protected by a blue water navy. While these are clearly sensitive topics in which both sides have great strategic stakes, judicious use of U.S.-China navy-to-navy exchanges and bilateral consultations may help the world's two largest energy consumers achieve sustainable, if competitive, coexistence.

Notes

An earlier version of this essay appeared as Andrew Erickson and Gabriel Collins, "Beijing's Energy Security Strategy: The Significance of a Chinese State-Owned Tanker Fleet," *Orbis* 51, no. 4 (2007): 665–84.

- The data in this paragraph are derived primarily from the U.S. Department of Energy's Energy Information Administration, <http://www.eia.doe.gov/emeu/cabs/China/Background.html>; and Sinopec's 2006 Annual Chinese Oil Import and Export Situation Analysis.
- The U.S. currently imports between 10–12 million bpd of oil and products.
- Office of the Secretary of Defense, *Military Power of the People's Republic of China 2007*, Annual Report to Congress, 8.
- 乔恩言 [Qiao Enyan], "石油企业在国家石油安全战略中的作用" ["Petroleum Enterprises and Their Use in National Oil Security Strategy"], *现代化工 [Modern Chemical Industry]* (2005): S1, 9–12.
- By comparison, Japanese tankers can haul over 90 percent of the energy consumed by that nation.
- Erica Downs, *Brookings Foreign Policy Studies Energy Security Series: China* (Washington, D.C.: Brookings Institution, 2006), 6.
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- "More Oil Tankers Taking to the Sea."
- "Oil Security at Sea," *China Daily*, Opinion/Commentary, 14 June 2007, p. 10, available at www.chinadaily.com.cn/opinion/2007-06/14/content_894050.htm.
- Interviews in Beijing, December 2006; NDRC website, www.eri.org.cn.
- These include the Naval Research Institute in Beijing, the Command and Staff College in Nanjing, and the Naval Submarine Academy in Qingdao.
- Authors' interviews with Chinese scholars, 2007.
- Japan and Vietnam also appear highly interested in creating state flagged tanker fleets to protect oil shipments.
- 徐起 [Xu Qi], "21世纪初海上地缘战略与中国海军的发展" ["Maritime Geostrategy and the Development of the Chinese Navy in the Early 21st Century"], *中国军事科学 [China Military Science]* 17, no. 4 (2004): 75–81. Translation by Andrew Erickson and Lyle Goldstein published in *Naval War College Review* 59, no. 4 (Autumn 2006): 46–67.
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