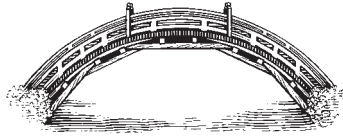


ROUNDTABLE

Sizing the Chinese Military



*Andrew Scobell & Roy Kamphausen*

*Ellis Joffe*

*Michael R. Chambers*

*David M. Finkelstein*

*Cortez A. Cooper III*

*Dennis J. Blasko*

*Bernard D. Cole*

*Michael McDevitt*

*Phillip C. Saunders & Erik Quam*

*Larry Wortzel*

## Introduction

*Andrew Scobell & Roy Kamphausen*

China is the emerging power with “the greatest potential to compete militarily with the United States,” according to the 2006 *Quadrennial Defense Review Report*. Issued by the U.S. Department of Defense, the report contends that China has significant potential to “field disruptive military technologies that could over time offset traditional U.S. military advantages absent U.S. counter strategies.”<sup>1</sup> Given that China’s defense spending and military modernization has grown at a constant pace without interruption for well over a decade, the entire international community is questioning the purpose of this sustained build-up.

How big could China’s military become? How capable could the People’s Liberation Army (PLA) become? Why the build-up?<sup>2</sup> To answer these questions, the National Bureau of Asian Research (NBR) and the U.S. Army War College Strategic Studies Institute (SSI) convened scholars and analysts for the 2006 PLA conference “Exploring the ‘Right Size’ for China’s Military: PLA Missions, Functions, and Organization” at Carlisle Barracks, Pennsylvania. A year earlier, Secretary of State Condoleezza Rice observed in an interview that China’s “military buildup looks outsized for their regional concerns.”<sup>3</sup> The above questions and Secretary Rice’s comment beg the question: what would a “right-sized” PLA look like? What might an armed forces consistent with Beijing’s legitimate self-defense requirements look like—in terms of China’s

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<sup>1</sup> U.S. Department of Defense, *Quadrennial Defense Review Report*, February 6, 2006, 29 ~ <http://www.defenselink.mil/pubs/pdfs/QDR20060203.pdf>.

<sup>2</sup> Former secretary of defense Donald Rumsfeld raised similar questions during a June 2005 speech in Singapore. He asked: “Since no nation threatens China, one must wonder: Why this growing investment [in defense]? Why these continuing large and expanded arms purchases? Why these continued deployments?” Donald Rumsfeld, (speech at 6th International Institute for Strategic Studies (IISS) Shangri-la Dialogue, Singapore, June 4, 2005) ~ <http://www.iiss.org/conferences/the-shangri-la-dialogue/shangri-la-dialogue-2005/2005-speeches/first-plenary-session-the-hon-donald-rumsfeld>.

<sup>3</sup> Condoleezza Rice, “Interview with the CBS News Editorial Board,” New York City, September 12, 2005 ~ <http://www.state.gov/secretary/rm/2005/53033.htm>.

national security strategy, regional and global requirements and expectations, and domestic drivers? To address these questions, the PLA conference presenters worked to provide insight into future Chinese defense planning, China's strategic intentions, and potential PLA missions.

A volume edited by Kamphausen and Scobell, *Right Sizing the People's Liberation Army: Exploring the Contours of China's Military* (Army War College Press, forthcoming), will reproduce the complete set of conference papers. This edited volume—the culmination of research and discussion from the 2006 PLA Conference—will consider the force structure of the PLA as well as the latest training, doctrinal, and procurement efforts across the arms and services of China's military forces. Organized on a service-by-service basis this assessment will provide new insights into the drivers behind the size, posture, and arming of the Chinese military. China's military intentions have long been shrouded in a veil of secrecy; the papers in this upcoming edited volume draw vital information from a diverse assortment of Chinese and U.S. sources to illuminate these hidden contours, offering perspectives and conclusions with far-reaching implications for policymakers and defense leaders in the United States and worldwide.

The *Asia Policy* roundtable that follows reproduces in condensed form nine of the papers presented at the 2006 PLA conference. These short essays highlight three key themes with implications for policymakers that emerged from the conference. A first theme is that a considerable amount of information is available about the drivers, scope, and direction of China's military modernization drive. A diligent mining of significant primary sources can provide a remarkably clear and coherent picture of the capabilities and intentions of Beijing's overall defense planning and programs. Although it would be highly desirable for China to increase the degree of transparency in its defense establishment, many other countries can nevertheless utilize the existing sources and expert analyses to answer many of the questions and concerns policymakers have voiced about Beijing's defense policy. Informed by this data, policymakers can make better decisions; moreover, armed with the results of this careful research, officials and scholars are better positioned to engage their Chinese counterparts in fruitful discussions on matters of defense and security.

A second key theme emerging from this study is that, as far as modernization is concerned, the PLA is by no means monolithic. A service-by-service analysis reveals that although PLA doctrines may be aligned under the rubric of a broad national military strategy, some armed service programs have larger handicaps—that is, are further behind national requirements—

than others. In these instances, “surprise” modernization programs may be likely to emerge.

A third critical theme, and one that cuts across all service programs, is the growing importance of the human dimensions of the PLA. As modernization continues and systems become more complex, the human elements—education, training, personnel management, etc.—will be increasingly critical to the development of the armed forces. The might of a military, after all, is only as strong as the people running it and the strategies these leaders devise. Coincidentally, the key theme of the 2007 PLA conference will be the PLA’s “human dimension.”

We hope that the condensed papers found in this *Asia Policy* roundtable will provide for more informed discussion and debate regarding China’s defense policy within the policy communities of various countries. Readers who find their appetites whetted by these abbreviated versions are invited to consult the complete versions to be published in the upcoming conference volume. ◆

## The “Right Size” for China’s Military: To What Ends?

*Ellis Joffe*

**H**ow much is enough for China’s military? As the People’s Republic of China (PRC) continues to build up China’s armed forces, this question has become a source of concern to U.S. policymakers and military officials. Most think that the PRC has gone far enough—that the build-up has gone beyond China’s defense needs and is beginning to constitute a threat to U.S. forces operating in the region. Secretary of State Condoleezza Rice has characterized China’s military build-up as “outsized for its regional interests.”<sup>1</sup> But what are these interests, and what is the “right size” for China’s military?


### *The Taiwan Issue*

Most analysts of Chinese military affairs agree that the purpose of China’s military build-up during the past decade or so has been to acquire a capability that would enable China either to coerce Taiwan into accepting a “one China” solution to the Taiwan problem, or at least to prevent Taiwan from moving toward formal independent status. Although China’s post-Mao military modernization was driven by several factors, the chief reason for the accelerated build-up that began in the mid-1990s and increased after 1999 was the emergence of the Taiwan issue in a form that threatened the “one China” solution and was unacceptable to the Chinese.

By 2007 the overwhelming significance of the Taiwan issue has diminished dramatically, primarily because the specter of a major war no longer hovers over the Taiwan Strait, even if it has not disappeared. Why then is the PRC continuing to build up the People’s Liberation Army (PLA)? The objectives driving this build-up go far beyond the Taiwan issue. Any attempt to assess what the PRC considers the “right size” for China’s armed forces must begin with a look at these objectives.

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<sup>1</sup> Joel Brinkley, “Rice Warns China to Make Major Economic Changes,” *New York Times (Late Edition)*, Aug 19, 2005, A10.

### *To Make China a Great Power*

The most basic, long-range, and unalterable objective of the Chinese leadership has been both to obtain recognition for China as a great power and to gain from the other great powers the respect and standing that come with this status. Anchored in China's physical attributes (territory, population, and geographical location) and driven by nationalistic impulses, this objective gained a tremendous push in recent years from the economic surge that catapulted China to the front rank of the global economy and a position of major political influence. This economic boom also provided China with the economic strength that constitutes one of the two essential pillars of great-power status.

The other pillar—military force—is nowhere near a level that is commensurate with great-power status. At a minimum, such status would presumably require forces that include not only aircraft carriers, long-range aircraft, transport aircraft and ships for moving large numbers of troops and supplies but also air and sea refueling capabilities, global communications systems, and bases in friendly countries. Although working to develop some of these capabilities, China still lacks most of them.

Aware that a full array of such capabilities will be out of China's reach for generations, China's leaders have never set achieving these capabilities as a realistic objective. Since Beijing's global aspirations represent a political and emotional rather than a strategic goal, China's leadership has not perceived the absence of these capabilities as putting China's security at risk.

This situation is changing. By 2005 a new phrase began to appear in Chinese pronouncements, proclaiming that China must strive to build "a military force that is commensurate with China's... international status."<sup>2</sup> The apparent significance of this new phrase is that an advance toward the status of a military great power—however gradual and far off—has become a long-term objective of the Chinese leadership.

### *Seeking a Paramount Regional Position*

The primary regional objective of China's leadership is to gain a paramount position in the East Asian region—a position from which Beijing will have the final say about what goes on in China's extended neighborhood. Perhaps

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<sup>2</sup> Xuefu Sun, "Forge a Military Force Commensurate with China's International Status," *PLA Daily*, April 28, 2006 ~ [http://english.pladaily.com.cn/site2/news-channels/2006-04/28/content\\_465091.htm](http://english.pladaily.com.cn/site2/news-channels/2006-04/28/content_465091.htm).

more important to Beijing is what, from China's standpoint, should not be permitted to go on: the conclusion of strategic alliances between countries in the region and the United States.

This objective is driven by the same powerful forces—physical presence, nationalism, and economic power—that motivate China on the global scene. Additional considerations are at work in the region, however, making it all the more imperative for Beijing to obtain these objectives.

The most important of these considerations is security. Whereas Beijing's global aspirations are relevant to China's prestige and political standing, its regional objectives are directly connected to the defense of the homeland. Beijing can presumably use China's new economic leverage to put pressure on Asian countries if the need arises, but in the end only military strength can protect China's interests and ensure its national security. Additionally, unlike the global situation, building a military force for limited regional objectives is within China's reach.

Nonetheless, for more than a decade after the start of modernization, Beijing felt no urgency about building such a force because this effort lacked the impetus of a strategic focus. The emergence of the Taiwan issue and the need to cope with U.S. military intervention then provided this focus. What followed was a decade of intensive preparations marked by the procurement of new weapons and the adoption of new doctrines. It is these preparations, which completely transformed China's regional capabilities, that have aroused concern (if not alarm) that the Chinese are becoming a military threat to the United States in the Asia-Pacific region.

Unclear is what drives this concern. Whatever its far-off regional objectives, so far the PLA build-up has been oriented toward capturing Taiwan and interdicting U.S. naval intervention. While pursuing a denial strategy for the maritime areas close to China's own borders and the area around Taiwan, Beijing has not demonstrated an intention of maintaining a dominant presence in the western Pacific. In both quality and quantity, China's military development—submarines and not aircraft carriers, diesel rather than nuclear submarines, for example—has not been directed toward mounting a challenge to the U.S. presence in the western Pacific. Much as the leadership in Beijing would presumably like to evict the United States from the region, they know this is an unattainable goal. Beijing will have to settle for less—a defensive strategy designed to protect the maritime approaches to China.

Apprehensions about China's military build-up, however, have already prompted the United States to adopt a hedging strategy against possible aggressive PRC actions in the future by strengthening U.S. forces in the

western Pacific. Viewing these moves with concern, Beijing sees Washington as building up U.S. forces and strengthening strategic alliances in East and Central Asia in order to prevent the unification of Taiwan with China and to block China's rise to great-power status in the region and beyond. Since Beijing views these objectives as rightful, it perceives these moves by the United States as threatening China's security. As long as these Chinese perceptions remain, China can be expected to continue the build-up of its armed forces until they reach the "right size" that will ease China's security concerns and provide adequate backing for its political aspirations. ◆

## Framing the Problem: China's Threat Environment

*Michael R. Chambers*


What is the proper size and structure of the People's Liberation Army (PLA)? The answer to this question will be based at least in part on the nature and source of the threats to the security of the People's Republic of China (PRC). In planning for the size, structure, and equipment of a military force tasked to defend their country, government officials and military officers will take many factors into consideration. The primary consideration, however, will be the requirement to defend the nation against immediate and potential security threats. This essay sketches the external and internal security environments that will influence the modernization of the PLA. It concludes that while winning a conflict over Taiwan is driving modernization in the near term, security interests based on China's aspirations and ambitions as an emerging great power will likely shape military modernization over the long term.

### *The External Threat Environment*



In spring 2007 the PRC faces few direct and immediate external security threats, and the Chinese leadership believes that "China's overall security environment remains sound."<sup>1</sup> Nevertheless, Beijing must plan for a number of potential external security threats and challenges, the most important of which comes from the United States. As the 2004 and 2006 defense white papers made evident, Beijing is clearly worried about a hegemonic and unilateral United States.<sup>2</sup> This is because the United States, as the lone

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<sup>1</sup> Information Office of the State Council of the People's Republic of China, *China's National Defense in 2006* (Beijing, December 29, 2006)  <http://www.fas.org/nuke/guide/china/doctrine/wp2006.html>.

<sup>2</sup> Information Office of the State Council of the People's Republic of China, *China's National Defense in 2006* (Beijing, December 29, 2006)  <http://www.fas.org/nuke/guide/china/doctrine/wp2006.html>; and Information Office of the State Council of the People's Republic of China, *China's National Defense in 2004* (Beijing, December 27, 2004)  <http://www.fas.org/nuke/guide/china/doctrine/natdef2004.html>.

superpower in the world today, is the only country that perhaps could thwart China's rise to great power status—not only within the Asia-Pacific region but also globally. Based on U.S. political, economic, and military influence, Beijing fears that Washington might attempt to contain the PRC's rise, particularly by strategically encircling China's territory. The increased U.S. military presence in Central Asia and Pakistan as a result of the war on terrorism and the invasion of Afghanistan has aggravated such fears, as has the tightening of U.S.-Japanese security cooperation in the last few years.<sup>3</sup>

While this strategic encirclement or containment by the United States is a potential problem over the long term, the more pressing security challenge is possible U.S. intervention to protect Taiwan in the event of a cross-Strait conflict; such intervention would threaten the territorial integrity of China. The United States has promised to assist Taiwan should the PRC launch unprovoked aggression against the island, even as Washington has sought to restrain Taipei from taking steps which could provoke such aggression from Beijing. Because the PLA has pledged to protect the territorial integrity of the nation and prevent the formal separation of Taiwan from China, Chinese civilian and military leaders must plan for the possibility of confronting U.S. military forces in the event of war with Taiwan. To prepare for such an eventuality, Beijing will need to acquire not only modern weapons systems that could defeat the U.S. 7th Fleet and other forces that would be used against the PLA in a Taiwan conflict but also the weapons systems necessary to project adequate power to subdue the island. In order to implement an area-denial maritime strategy in China's littoral areas to thwart a U.S. intervention, the PLA Navy (PLAN) will also need to acquire new naval assets.

The U.S. challenge in a Taiwan conflict scenario also affects some of the other external security challenges facing the PRC. In particular, the United States could possibly try to disrupt Chinese shipping through the critical sea lanes of the South China Sea and the Strait of Malacca, hampering Chinese trade and especially oil imports. This potential for disruption is one of the critical aspects of China's maritime and energy security interests. Such a disruption would cause serious harm to the Chinese economy and thereby undermine the legitimacy of the Chinese Communist Party's (CCP) rule. To cope with this potential threat, China will need to acquire power-projection

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<sup>3</sup> On the U.S.-Japan relationship serving to help contain the PRC, see for example Xu Feng, "US Factor in Japan Becoming a Military Power," *Liaowang*, trans. World News Connection (WNC), August 13, 2005; and "Sino-Japanese Relations Are Facing New Test," *Ta Kung Pao*, trans. WNC, August 16, 2005. On the concerns with the U.S. military presence in Central Asia, see for example Zhou Liang, "Demand for Troop Pullout from Central Asia Makes United States Tense with a Great Sense of Urgency," *Liaowang*, trans. WNC, August 12, 2005.

capabilities that the country currently lacks; however, as Rear Admiral Yang Yi, director of the Institute of Strategic Studies at the National Defense University, noted, "...compared with the political, diplomatic, and cultural means of safeguarding China's interests, China's military force lags far behind. As a responsible big power, China needs to build a military force worthy of its international status."<sup>4</sup> Prudent leadership in Beijing will develop adequate weapons systems, force structures, and strategies to deter or blunt possible U.S. military pressures. Yet comments such as Admiral Yang's also suggest that China's ambitions, not just current security challenges, will play a role in shaping the PLA.

Despite such security concerns, the United States remains only a potential threat to China; not truly friends but not truly adversaries, the two countries share a mixture of common and conflicting interests that lead to broad areas for potential cooperation and to areas of tension and dispute. Moreover, Beijing has used diplomatic and economic means to address China's security concerns vis-à-vis the United States. China's pursuit of a "good neighbor" policy since 1997 and its efforts to promote East Asian regionalism, particularly through the ASEAN +3 (Association of South East Asian Nations) process,<sup>5</sup> are intended to create a ring of friendly states surrounding the PRC that could serve as a strategic buffer against pressures the United States might exert in a containment ploy.<sup>6</sup> Astute Chinese diplomacy has proved very beneficial in blunting the potential threat from the United States. Likewise, Chinese trade policy has intentionally sought to create interdependencies between the PRC and its neighbors as a means to further bind their interests to those of China. As a result, Beijing has succeeded in inducing many of its neighbors—including U.S. allies such as South Korea and Australia—to be hesitant about siding with the United States against China in a conflict over Taiwan and to desire avoiding a situation where they are forced to choose sides. These developments alleviate, but do not eliminate, the potential threat that the United States might pose to China.

Beyond the potential threat from the United States, China faces several other external security challenges. Despite efforts since the end of the Cold

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<sup>4</sup> See Tao Shelan, "Military Expert: In China's Peaceful Development It Is Necessary to Uphold the Dialectical Strategic Thinking of Making the Country Rich and Building Up Its Military Strength," *Zhongguo Xinwen She*, trans. WNC, May 16, 2006.

<sup>5</sup> ASEAN +3 is the regional dialogue involving the ten members of ASEAN plus China, Japan, and South Korea.

<sup>6</sup> Author's interviews with Chinese foreign policy analysts, Beijing, April 2004. See also Robert Sutter, "Asia in the Balance: America and China's 'Peaceful Rise,'" *Current History*, September 2004, 287.

War to resolve many of its border disputes, the PRC still has territorial disputes with several neighbors. Some of these disputes have the potential to escalate—such as those in the South China Sea (especially over the Spratly Islands) and in the East China Sea (particularly the disputes with Japan over natural gas deposits and over the Diaoyu/Senkaku Islands). The disputes with Japan have been worrisome over the last few years due to the rising political tensions between Beijing and Tokyo. To address these disputes, China will need to ensure that the PLA possesses adequate naval and amphibious capabilities. Similarly, the PLA will need to develop and deploy power-projection capabilities—particularly within the PLAN—to secure China’s growing interests in the sea lines of communication through Southeast Asia and across the Indian Ocean to the Persian Gulf. The PRC currently lacks adequate capabilities to secure these interests, which are emerging due to China’s growth as a global economic and trade power. Such security interests help to explain the priority placed on developing naval power in the 2004 defense white paper and President Hu Jintao’s December 2006 call to build up the PLAN.<sup>7</sup> The PRC’s desire for energy security runs in tandem with these maritime security interests given that the bulk of China’s oil imports are seaborne. And as China develops energy industry assets in Central Asia, Beijing will likely ensure that it possesses land-based power-projection capabilities (including expeditionary forces) that are adequate to protect such assets. Finally, China desires international peace and stability in Asia in order to pursue the country’s economic growth and modernization. Emergence as a great power may lead China to become proactive in quelling regional instability in Asia. To move in this direction, China would need to develop adequate and appropriate military forces for expeditionary missions.

China is also increasingly facing nontraditional security threats such as illegal narcotics trafficking, the spread of infectious diseases, and terrorism. Although the military has played and will likely continue to play a role in combating several of these threats, most are as much police issues as military issues and are therefore unlikely to have major effects on the future size and structure of the PLA.

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<sup>7</sup> Information Office of the State Council, *China’s National Defense in 2004*, Chapter II; and Cao Zhi and Chen Wanjun, “Hu Jintao Emphasizes... a Powerful People’s Navy that Meets the Demands of Our Army’s Historic Mission,” Xinhua Domestic Service, trans. WNC, December 27, 2006.

### *The Internal Security Environment*

Despite these external security challenges, the most pressing and direct threats to China's security are found not in the international arena but at the domestic level. Separatism poses a threat to China's territorial integrity, and popular protests over corruption, illegal taxes, and illegal land grabs pose a similar threat to the legitimacy of the Chinese Communist Party's (CCP) rule. Separatism is the only issue, however, that truly might involve the use of military force and thus has the potential to affect the size and structure of the PLA.

In the view of Beijing, the chief separatist threats to China's territorial integrity are Taiwan, Tibet, and Xinjiang,<sup>8</sup> all three of which have links to external actors.<sup>9</sup> In the past Beijing has used military force in order to attempt to exert control over these regions. The need to cope with separatist threats in Tibet and Xinjiang is not likely, however, to significantly impact the future size and shape of the PLA. With China's development of police force capabilities and improved training, any uprisings in either area will be first a police issue and only involve the military if the turmoil escalates. Moreover, not only does the PLA already possess the capabilities to deal with contingencies in Tibet and Xinjiang, but Beijing has also turned to economic and population policies to address both situations.

With regard to Taiwan, however, the use of military force is a more relevant possibility given that the Taiwan issue is the result of an unresolved civil war from 1946–49. The PRC currently has its largest concentration of forces arrayed against Taiwan and has threatened military aggression should the government in Taipei declare independence and thus formally separate from China. Additionally, because of Taiwan's security relationship with the United States, the PRC must also prepare for a U.S. intervention in a conflict over Taiwan. The threat of military force is not, however, the only policy Beijing adopts toward Taiwan. The PRC is also actively using diplomacy to prevent Taiwanese independence and to isolate the regime internationally. At the same time the PRC is also using trade and investment to bind the Taiwanese economy so tightly with the mainland economy that declaring independence would result in enormous economic consequences for Taiwan. While the diplomatic and economic strategies appear to be working at the

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<sup>8</sup> Admittedly, some people will challenge the inclusion of Taiwan as a domestic security issue rather than as an international issue. The focus of this essay is on Beijing's views of its threat environment, however, and given that Beijing officially sees the Taiwan issue as an internal issue, this essay treats a PRC-Taiwan conflict as a domestic-level conflict.

<sup>9</sup> Many would argue that Taiwan is itself an external actor.

moment, military strategists in Beijing feel the need to plan for the possibility of their failure and will continue to look at the Taiwan scenario as a key driver of PLA modernization.

### *Conclusion*

If the PRC's most pressing security threats are more domestic and political than external and military in nature, then how are we to understand the motivations shaping Chinese military modernization? In the near term, Beijing's desire to win a possible conflict over Taiwan—a goal that would involve coping with a U.S. military intervention—is guiding the modernization of the Chinese military. Over the long term, Chinese aspirations and ambitions to become a global great power might be the driving force for PLA modernization. China's conception of its threat environment is currently expanding beyond border and territorial defense. China's rise as a global economic and trading power is prompting the PRC leadership to perceive more far-flung interests than it previously conceived. Shaping the longer-term vision for modernizing the PLA are emerging economic and maritime interests. One such interest is the protection of Chinese energy imports and other shipping through the Southeast Asian sea lines of communication and even as far as the Persian Gulf. Another is the protection of Chinese energy industry assets in Central Asia and as far afield as the Sudan. Likewise, aspirations and ambition to be a great power may influence China's perceived need to provide stability throughout the Asia-Pacific region. Such interests will require China to develop power-projection capabilities well beyond those the PLA currently possesses. Without any direct and immediate external threats driving the modernization of the PLA, these aspirations—along with the desire to develop the capabilities to address both external security challenges and the Taiwan threat—will be key drivers for the continued modernization of the PLA. Included here would be the need for military capabilities to defend against or deter those of other great powers—especially the United States. ◆

## China's National Military Strategy: An Overview of the "Military Strategic Guidelines"

*David M. Finkelstein*


Since the mid-1990s the Chinese military, the People's Liberation Army (PLA), has been engaged in a seminal period of focused and sustained efforts to modernize. For more than a decade the armed forces of China have been undergoing transformative adjustments of such a profound nature relative to the past that one group of mainland military authors considers this ongoing period of reform to constitute the PLA's "third modernization."<sup>1</sup>

What is the PLA trying to achieve and, more importantly, why? What calculations, assumptions, and assessments are driving Beijing to enact changes in its military forces? What objectives does the leadership of the PLA seek to achieve? These are not merely academic questions. The U.S. Department of Defense (DoD) is also asking these fundamental questions, and the answers the DoD comes up with will have an impact on U.S. military modernization plans and programs. The 2006 DoD report to Congress stated: "China's leaders have yet to adequately explain the purposes or desired end-states of their military expansion...this lack of transparency prompts others to ask, as Secretary of Defense Rumsfeld did in June 2005: Why this growing investment? Why these continuing large and expanding arms purchases? Why these continuing robust deployments?"<sup>2</sup> The 2007 report continues to lament that Chinese leaders have not provided a rationale for military modernization.<sup>3</sup>

This essay seeks to answer some of the fundamental questions being asked about Chinese military modernization.


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<sup>1</sup> See Wang Wenrong (General Editor), et al., *Zhongguo jundui disanci xiandaihua lungang* [On the Third Modernization of the PLA], (Beijing: Liberation Army Press, February 2005). The authors argue that the first significant "modernization" of the PLA occurred just prior to the founding of the PRC in 1949, "on the eve of the founding of the New China," and the second modernization began in the mid-1980s. The third modernization to which they refer began, they argue, in the mid-1990s, especially the latter half.

<sup>2</sup> Office of the Secretary of Defense, *Annual Report to Congress: Military Power of the People's Republic of China 2006*  <http://www.defenselink.mil/pubs/pdfs/China%20Report%202006.pdf>, 1.

<sup>3</sup> Office of the Secretary of Defense, *Annual Report to Congress: Military Power of the People's Republic of China 2007*  <http://www.defenselink.mil/pubs/pdfs/070523-China-Military-Power-final.pdf>.

## *The Military Strategic Guidelines: Blueprint for Military Modernization*

Not surprisingly, the PLA does have an overarching framework that provides a rationale for military modernization. This framework provides the justification for activities across the entire spectrum of defense reform and modernization, determines priorities, and eventually connects with resource-allocation processes. This strategic rationale is contained within the Military Strategic Guidelines that are issued by the Central Military Commission (CMC) of the Central Committee of the CCP. The Military Strategic Guidelines is the near analogue to the U.S. National Military Strategy.

Issuing a new set of military strategic guidelines, or announcing major revisions to the guidelines, is considered a significant political-military event within China. Following the founding of the PRC in 1949, the guidelines have according to PLA materials undergone major revision only five times.<sup>4</sup>

New military strategic guidelines are issued in response to major changes in one or all of the following areas of assessment: (1) changes in the international order, (2) changes to the international or regional security environment and to China's security situation, (3) changes to China's domestic situation or changes in domestic objectives, and (4) changes in the nature of warfare itself.

New guidelines are issued under the name of the chairman of the CMC. Historically, new guidelines or significant changes to the military strategic guidelines have been announced in a major speech delivered by the CMC chairman to the leadership of the PLA at an expanded meeting of the CMC. These expanded meetings (*kuoda huiyi*) not only include the sitting members of the CMC but also can include key PLA leaders from the four general departments, the military regions, the services, and other national-level organizations such as the Academy of Military Science (AMS) and the National Defense University (NDU).

The military strategic guidelines provide the rationale for further planning and action. With a relatively long shelf-life, the guidelines are fleshed out in detail over time; major programmatic decisions are keyed to various systemic events in the PLA and the PRC, such as state five-year plans and army-building outlines (*junshi jianshe gangyao*) that in turn are keyed to five-year plans.

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<sup>4</sup> Peng Guangqian, "The Development and History of Our Country's Strategic Guideline of an Active Defense Since the Founding of the Nation," in Peng Guangqian, *Researching Questions of Chinese Military Strategy* (Beijing: Liberation Army Publishing House, January 2006), 86–104.

The set of guidelines under which the PLA currently operates was issued in 1993 and is known as the Military Strategic Guidelines for the New Period (*Xin shiqi junshi zhanlüe fangzhen*).

Former CMC chairman Jiang Zemin introduced the new guidelines during an expanded meeting of the CMC on January 13, 1993 in a speech entitled “The International Situation and the Military Strategic Guidelines.”<sup>5</sup> The need for a new set of guidelines was driven by two new and critical assessments: the assessment of the international situation in the immediate post-Cold War period, and the post-Gulf War assessment of the changing nature of modern warfare. The PLA’s “lessons learned” from the first Gulf War had a profound impact on the new guidelines.

Arguably, every modernization program, reform initiative, and significant change that the PLA has undergone, and about which foreign observers have been writing for over a decade, is therefore the result of some of the fundamental decisions made when the new guidelines were promulgated in 1993.

Like the military strategic guidelines issued prior to 1993, the current Military Strategic Guidelines for the New Period constitute what could be referred to as a “rolling national military strategy.” This means that although the fundamental decisions set forth when the most current guidelines are first issued continue to serve as the foundation and justification for action over time, it is the concrete programs subsequently developed and implemented that give body to the military strategic guidelines. In the case of the Military Strategic Guidelines for the New Period, the implementing programs have been “rolling out” over the course of four five-year plans: the Eighth Five Year Plan (1991–95) when the new guidelines were promulgated, the Ninth Five Year Plan (1996–2000), the Tenth Five Year Plan (2001–05), and the current Eleventh Five Year Plan (2006–10).

Clearly, this type of “rolling strategy” allows for adjustments along the way. For example, by 1999 PLA professional military literature began to re-characterize the most likely type of future warfare as “local wars under modern informationalized conditions” in contrast to “local wars under modern high-tech conditions.”<sup>6</sup> Officially incorporated into the lexicon of the Military Strategic Guidelines for the New Period by 2002, this new characterization

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<sup>5</sup> Zhonggong zhongyang wenxian bianji weiyuanhui bianji [Party Literature Editing Committee of the CPC Central Committee], *Jiang zemin wenxuan* [Selected Works of Jiang Zemin, vol. 1], (Beijing: Renmin Chubanshe [People’s Publishing House], August 2006), 278–94.

<sup>6</sup> Shan Xiufa (General Editor), *Research on Jiang Zemin Thought on National Defense and Army Building*. (Beijing: Military Science Publishing House, March 2004). See Chapter 4, “Formulating and Perfecting the Military Strategic Guidelines for the New Period,” 72–88.

represented an adjustment to the military strategic guidelines—rather than a new set of military strategic guidelines or a new “national military strategy.” A September 2006 article in the PLA’s official newspaper, *Liberation Army Daily* (*Jiefangjun bao*), termed the new iteration an “enrichment and improvement” to the old guidelines.<sup>7</sup>


In communicating the judgments, assessments, rationales, and priorities contained within the military strategic guidelines, the standard lexicon of Chinese strategic analysis includes at least six strategic-level issues that the guidelines are expected to address.<sup>8</sup>

- *Presenting the strategic assessment* (zhanlüe panduan) ≈ This issue considers the nature of the global security environment and what it means for the security of China.
- *Adjusting the content of the active defense strategy* (jiji fangyu zhanlüe) ≈ This factor accounts for the need to adjust the traditional military strategy of the “active defense” to comport with the changing nature of warfare.
- *Articulating the strategic missions* (zhanlüe renwu) and “strategic objectives” (zhanlüe mubiao) of the Chinese armed forces ≈ Absent the equivalent of a “national security strategy,” the military strategic guidelines re-articulate for China’s larger-order national objectives (economic, political, diplomatic, social, etc.) so that the PLA can develop missions to support them.
- *Issuing guidance for military combat preparations* (junshi douzheng zhunbei) ≈ This is a capabilities-based assessment. It identifies what *type* of war the PLA must be prepared to fight, not *whom* they may have to fight. For example, this is where the imperatives of being able to prosecute “local wars under modern informationalized conditions” would be articulated.
- *Identifying the main strategic direction* (zhuyao zhanlüe fangxiang) ≈ Probably the most sensitive element in the guidelines, this contingency-based assessment asks the questions: Where is conflict most likely to break out? Against whom? To secure which national objectives? The identification of the main strategic direction (and other strategic directions) impacts the development of capabilities as well as force deployment decisions.

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<sup>7</sup> Shou Xiaosong, “Vigorously Implement the Military Strategic Guidelines for the New Period,” *Liberation Army Daily* (Internet version), September 12, 2006.

<sup>8</sup> There may in fact be others; but if there are others then the data set at hand for this essay did not capture them.

- *Determining the focus for army building (jundui jianshe)*  Under this factor come the myriad modernization programs and reform initiatives that eventually become the “outputs” to enable the decisions or assessments articulated in the other five factors.

Within the above assessments—and especially within the programs that have been developed since 1993 to enable the guidelines—lies the rationale or genesis of most every development in PLA modernization that outside observers have been commenting on since the mid-1990s. These developments—indicating changes in operational doctrine, reorganizing command and control relationships, the fielding of new capabilities, changes in personnel policies, and geographic deployments—are all rooted in the new guidelines.

### *Concluding Comments*

A study of the literature surrounding China’s military strategic guidelines underscores that the PLA’s approach to crafting the equivalent of a national military strategy is pragmatic, deliberate, and based on the types of calculations and assessments that any professional military establishment would undertake. The terminology and the organization of the guidelines are a distinct reflection of Chinese—and especially PLA—bureaucratic culture as well as the intellectual constructs imposed by “scientific” Marxism. There is, however, nothing particularly foreign, strange, exotic, or exceptional about the military strategic guidelines and the national military strategy they transmit. The strategy is grounded in both a capabilities-based and contingency-based approach that sets the azimuth for the development of operational and institutional capacities to provide for the national defense of China. Moreover, as with most military strategies around the world, the PLA’s guidelines take their cue from larger-order national objectives.

Finally, there is in fact a body of Chinese literature in the public domain that discusses aspects of the military strategic guidelines at various levels of detail. Whether reading professional military literature prepared for use in PLA academies, the three-volume set *Selected Works of Jiang Zemin* or study guides on national defense policies, those who want to piece together the major contours of the guidelines have much with which to work.<sup>9</sup> Even the defense white papers published biennially by Beijing are beginning to use

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<sup>9</sup> See Zhonggong zhongyang wenxian bianji weiyuanhui bianji, *Jiang Zemin wenxuan*.

terminology associated with the guidelines, although without acknowledging it as such.

Strategic transparency and the issue of “intentions” are the two of the larger-order perceptual problems that continue to bedevil U.S.-China relations, especially military relations. With major outlines of the Military Strategic Guidelines for the New Period already in the public domain in China, the time is probably right for Beijing to be more forthright in explaining them and to stop talking around them. Likewise, now probably also is the right time for Washington to stop asserting in its official assessments of the PLA that the United States does not understand the rationale for the PLA’s modernization programs when adequate data to answer that question is at hand. Therefore, if they are not already doing so, the two sides should begin to incorporate serious explanations of their respective military strategies as part of the program of military relations between the two countries. ◆

## “Preserving the State”: Modernizing and Task-Organizing a “Hybrid” PLA Ground Force


*Cortez A. Cooper III*

Those U.S. policymakers hoping to gain perspective on Chinese military modernization face daunting challenges that can block progress in both bilateral and multilateral security dialogue. On the one hand, positing an increased China threat behind every move to build a more capable People’s Liberation Army (PLA) understandably frustrates Chinese leaders focused on addressing the security requirements of their country as a re-emerging power. On the other hand, given the need to guarantee U.S. freedom of movement and action in Asia, generally accepting extensive PLA modernization as natural for an increasingly more powerful player on the world stage registers as unwise. Finding the “golden mean” is difficult. As a rapidly developing regional power with global economic influence, China has myriad security concerns demanding transformation of its technologically challenged and combat-inexperienced military. Many developments in China’s missile, air, and naval forces, however, rightly elicit concern that Beijing is focused on acquiring offensive capabilities disproportionate to the threat environment.

Developments in the PLA ground force are tougher to evaluate. This essay seeks to highlight the various, wide-ranging missions for which China’s leadership maintains a 1.3 million strong ground force, to show that this is not a homogeneous force in terms of capabilities and focus, and to emphasize those ground force developments that should be the focus of U.S. analysts and decisionmakers. As about one-third of this huge army forms an increasingly modern, professional war-fighting force, U.S. policymakers must deepen their understanding of why the Chinese are building the ground force that they are—and recognize the signs that might indicate an increasing readiness and willingness to use such a force to resolve regional disputes.

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**NOTE**  “Preserving the State” is a chapter title taken from “T’ai Kung’s Six Secret Teachings,” purportedly written to provide advice to kings Wen and Wu of the Chou dynasty in the 11th century BC. From the Ming edition of the Sung Dynasty classic, *Wu Jing Qi Shu*. Translated by Ralph Sawyer as *The Seven Military Classics of Ancient China, including the Art of War* (Boulder: Westview Press, 1993). This essay is a shortened version of a paper originally presented at the conference “Exploring the ‘Right Size’ for China’s Military: PLA Missions, Functions, and Organization,” Carlisle Barracks, PA, October 6–8, 2006 and to be included in Roy Kamphausen and Andrew Scobell, eds., *Right Sizing the People’s Liberation Army: Exploring the Contours of China’s Military* (Carlisle, PA: Army War College Press, forthcoming).

## *Security Tasks and Ground Force Missions*

China's national defense tasks as described in the 2006 white paper on national defense are wide-ranging, demanding a military poised to protect Chinese Communist Party (CCP) control, support internal stability operations, defend a vast border, and oppose "terrorism, separatism and extremism in all forms."<sup>1</sup> Translating broad goals and tasks into operational mission requirements, the ground forces are required to provide a range of forces:

- forces capable of domestic control and service support operations across China
- forces capable of border defense operations
- forces capable of conducting amphibious and airborne/airmobile operations against Taiwan
- forces capable of conducting heavy mobile operations into potentially unstable areas on China's periphery in order to protect economic interests<sup>2</sup>
- units and personnel capable of supporting global exchange programs, UN peace-keeping operations, and foreign military training programs

To meet these mission requirements, China's Central Military Commission (CMC) appears to be task-organizing specific units for particular campaigns or local missions rather than modernizing the force so that each unit is capable of conducting myriad missions. For this reason, the PLA ground force likely will retain over one million soldiers for at least the next decade and will present to outside observers a wide range of levels of modernity and war-fighting expertise. Analysts should not evaluate ground force readiness and capabilities based on expectations of a homogeneous force, and policymakers should expect analysts to delineate the components of the force that address specific mission requirements most relevant to U.S. security concerns.

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<sup>1</sup> Information Office of the State Council of the Republic of China, *China's National Defense in 2006* (Beijing, December 29, 2006), 4 ~ <http://www.fas.org/nuke/guide/china/doctrine/wp2006.html>.

<sup>2</sup> Sun Xuefu, "Build a Military Force Commensurate with China's International Status," *PLA Daily Online*, April 28, 2006.

### *Taiwan and Beyond*

Despite a modernization effort covering to some extent every aspect of military force structure and posture, China's leadership clearly has prioritized development of capabilities in order to be able to severely damage Taiwan in the event of a conflict over the island's stance on perpetual separation from the mainland—and to be able to deter or slow U.S. responses to such a conflict.

Understanding the requirement to build an amphibious and air-transportable force capable of responding to a call to arms in the Taiwan Strait—and also in order to possess a heavy mobile warfare force for possible use in Central Asia, the Korean Peninsula, or the Russian Far East—PLA force planners have begun to restructure, equip, and train units for specific offensive missions. Over the course of the past decade, the PLA built at least four major amphibious training bases, and about one-quarter of the PLA's maneuver divisions and brigades have focused on training for amphibious operations.<sup>3</sup> The special operations and airmobile capabilities needed in support of missile and air strikes against Taiwan are also priorities in ground force development initiatives. Downsizing or retiring a number of old divisions in favor of modernized, task-organized brigades possibly improves the PLA's capability to respond to potential crises along the full length of China's northern border and tailors some units to conduct amphibious operations more effectively against Taiwan or Taiwan-controlled islands in the Strait.

While China appears to be avoiding for now the tell-tale programs designed to greatly increase amphibious and airlift capacity to project ground forces onto Taiwan, the PLA continues to train and equip task-organized brigades and divisions to fight an island landing campaign. Though wanting to avoid alarming the United States and regional neighbors with an overt preparation for force projection operations, Beijing has nonetheless positioned a defense industrial base to provide, when needed, the projection platforms for a force trained and organized to attack Taiwan and at least temporarily occupy key terrain.

### *Internal Security: The Party's Army*

The PLA remains a party army in an era when the CCP's grip is less than firm—PLA ground forces remain both the primary arbiter of party control throughout the country and protector of a 22,000 km land boundary

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<sup>3</sup> Dennis J. Blasko, "Chinese Army Modernization: an Overview," *Military Review* (September–October 2005), 72.

bordering a number of current and potential flashpoints. Many ground force units are focused on conducting traditional domestic control activities more effectively—activities that encompass disaster relief efforts, local civil development projects, and support for People’s Armed Police (PAP) forces in quelling public disturbances.

Numerous internal forces drive China’s decisions regarding force structure and capabilities. Foremost among these forces is the concern for maintaining public order and party control in the face of rising discontent over corruption, illegal land grabs, and the blow-back from economic reform initiatives. China has reduced its ground force by about 500,000 personnel over the past decade without resulting in either a major upheaval in the civil economy or significant reduction in the ability to control public disturbances.<sup>4</sup> Many of the unit and personnel cuts resulted in growth of the PAP, thereby shoring up domestic control capabilities. The presence of the PLA throughout the country retains cache with the populace, however, and provides a concrete link between central power and local life that the party is unlikely to relinquish. Further minor reductions could accrue from consolidation of headquarters, support, and training organizations, but major unit reductions are unlikely.

### *“Military Diplomacy” in Action*

China views military diplomacy as a key contributor to overall diplomatic efforts; this rubric includes UN peace-keeping missions, military exchanges, international disaster relief support, “joint” exercises, and bilateral and multilateral security dialogue. China’s military diplomacy in 2005 reportedly encompassed exchanges with 138 countries, and Beijing claims to have held sixteen joint military exercises with eleven countries since 2002.<sup>5</sup> The PLA has increased military exchange and training activity across the globe and since 2000 has established itself as a regular contributor to UN peace-keeping operations. According to the 2006 national defense white paper, China currently has 1,487 military peace-keepers serving in nine mission areas and in the UN Department of Peacekeeping Operations.<sup>6</sup> Much of China’s focus has been on countries in Africa, the Middle East, Central Asia, Latin America,

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<sup>4</sup> See Information Office of the State Council, *China’s National Defense in 2006*, 17–18, for a discussion of troop reductions and the “safety net” infrastructure in place to handle the large influx of former soldiers into the civilian realm.

<sup>5</sup> *China’s National Defense in 2006*, 33.

<sup>6</sup> *Ibid.*, 33.


and Southeast Asia—areas where access to energy and markets will become increasingly important as China's economy continues to grow.

### *Tomorrow's Ground Force*

Over the course of the next decade, Beijing hopes to build a ground force with task-organized units capable of conducting regional mobile warfare, special operations, and amphibious and airmobile operations while maintaining a large homeland defense cohort to protect political and economic centers of gravity. If current force-development trends on Taiwan continue, by approximately 2012 the PLA will need only to ramp up transport production (or civil asset mobilization) to project a force that could overwhelm Taiwan's defenses rapidly enough to severely complicate a U.S. response.

Trends and developments in Central and Southeast Asia do not portend a Chinese use of force in these regions. Ground force modernization efforts, however, do not overlook the mobile warfare capabilities that strengthen Beijing's credibility as it wields soft power to accomplish political and economic objectives in regional forums. U.S. security planners and analysts would benefit from carefully watching specific force-structure developments and training activity among the units responsible for these missions as potential indicators of Beijing's intent in dealing with potential regional crises. Although Beijing frames the PLA ground force as "right-sized" for primarily defensive missions, the war-fighting core of the force is very large by current international standards and increasingly capable of conducting offensive operations.

Analysts will also do well not to ignore the skills being developed by PLA ground force units charged with nontraditional roles. Many of these troops and units will be involved in an increasingly active military diplomacy program and will expand contact via training and exchange programs with militaries across the globe.

The likelihood of U.S. troops facing PLA ground forces in combat is very low, but a number of the areas of overlapping interest for Washington and Beijing represent potential security dilemmas in which crisis escalation may be difficult to avoid. Rather, converging interests in the stability of areas of mutual economic concern may bring U.S. and Chinese ground forces into cooperative service in non-combat environments. Trends and developments in the PLA ground force may provide a bell-wether indication of Beijing's intentions for handling developing crises. 

## PLA Ground Force Modernization Underway in All Military Regions, Preparing for a Variety of Missions

*Dennis J. Blasko*

The 2004 Chinese defense white paper acknowledged that priority has been given to the navy, air force, and Second Artillery force to strengthen the “comprehensive deterrence and warfighting capabilities” of the People’s Liberation Army (PLA)—a fact that has been apparent to foreign analysts for about a decade.<sup>1</sup> Despite the precedence given to the other services, ground forces (army) still comprise the vast majority of the PLA. While the Chinese government has not provided an official accounting of the personnel distribution within the 2.3 million-strong active-duty PLA, most estimates usually credit the army with about 1.6 million personnel (about 69% of the force), the navy with about 255,000 (about 11%), the air force with some 400,000 (about 17%), and the Second Artillery with around 100,000 (about 4%).<sup>2</sup> Moreover, though the PLA’s leadership structure is changing gradually, ground force officers continue to retain the majority of leadership positions from headquarters in Beijing down to the local levels. Although the army is sometimes overlooked when outsiders concentrate on high-technology developments in the PLA, modernization of the ground force is an integral element of the long-term transformation of China’s armed forces. As the PLA explores more maritime-oriented missions for the 21st century, the army is building forces to maintain its relevance to China’s overall deterrence posture and to PLA warfighting capabilities. This essay provides a brief overview of this ground force modernization.

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**NOTE** ≈ This essay updates information found in the author’s book, *The Chinese Army Today: Tradition and Transformation for the 21st Century* (London: Routledge, 2006). This essay is a shortened version of a paper originally presented at the conference “Exploring the ‘Right Size’ for China’s Military: PLA Missions, Functions, and Organization,” Carlisle Barracks, PA, October 6–8, 2006 and to be included in Roy Kamphausen and Andrew Scobell, eds., *Right Sizing the People’s Liberation Army: Exploring the Contours of China’s Military* (Carlisle, PA: Army War College Press, forthcoming).

<sup>1</sup> Information Office of the State Council of the People’s Republic of China, *China’s National Defense in 2004* (Beijing, December 27, 2004) ≈ <http://www.fas.org/nuke/guide/china/doctrine/natdef2004.html>.

<sup>2</sup> International Institute for Strategic Studies, *The Military Balance 2006* (London: Routledge, 2006), 264.

### *Political Loyalty*

A fundamental underpinning of PLA modernization is the political loyalty of the PLA to the Chinese Communist Party (CCP). In the mindset of the CCP, national survival is equivalent to the survival of the party. The PLA political officer system and party committee system are principally responsible for maintaining ideological correctness and political obedience within the military. When technological capabilities are lacking, the PLA sees its political system as adding ideological strength to the balance of power equation. Fear of chaos and the belief that the CCP and Chinese armed forces are the ultimate protectors against turmoil breaking out throughout the country likely motivate the vast majority of PLA personnel to remain loyal to the party. Fragile domestic conditions emphasize the need to carefully coordinate and balance military modernization with other aspects of national economic development. In such an environment, the military recognizes the need both to share resources with other national requirements and to join the rest of the country in supporting the national economy.

### *Organizational Missions*

Within this political framework, the armed forces of China have both external and internal missions. The PLA primarily is focused outward, the People's Armed Police (PAP) is focused domestically, and the militia provides general support. Military planning and training for potential Taiwan contingencies is high on the PLA's list, with training for this mission undertaken mostly in the Nanjing, Guangzhou, and Jinan Military Regions. Nonetheless, the army also trains for many additional missions throughout the country, including preparation for a variety of nontraditional security threats. In a major change to Chinese policy, as of 2002 the PLA now engages in combined training exercises with many countries, mainly in nontraditional security fields.

The PLA focuses on deterring or preventing war and has written about deterrence for several years. As noted in the full chapter in *The Science of Military Strategy* devoted to deterrence

Strategic deterrence is a major means for attaining the objective of military strategy, and its risks and costs are less than strategic operations... Warfighting is generally used only when deterrence fails and there is no alternative... Strategic deterrence is also a

means for attaining the political objective...Without resolute determination and firm volition, deterrence is feeble.<sup>3</sup>

In order to achieve effective deterrence and accomplish the desired political goals, however, China must have a capable fighting force: “Strategic deterrence is based on warfighting...The more powerful the warfighting capability, the more effective the deterrence.”<sup>4</sup> Although the other armed services have leading roles under any Taiwan scenario, the army also maintains an important role in deterrence given the potential of the ground force to occupy the island. The army’s deterrence mission also extends to many other potential scenarios. The Chinese leadership thus sees the need to invest, to some degree, in the entire spectrum of military capabilities required by a growing power, especially a power that is not integrated into a web of military alliances.

### *Organizational Structure*

The total active-duty PLA ground force is estimated at 1.5 to 1.6 million personnel and includes: main force units; local defense forces such as border and coastal defense units; most personnel assigned to various local headquarters throughout the country; most personnel assigned to logistics subdepartments including hospitals and supply and repair depots; and the staff, faculty, and students assigned to army-related professional military education academies and schools. Main force units are considered “mobile combat troops” and include group armies with their subordinate divisions, brigades, and regiments as well as independent units under the command of military region or military district headquarters.

As of 2007, main ground force units are organized into eighteen group armies along with a number of independent units (divisions, brigades, and regiments/groups). Maneuver forces (infantry and armored units) consist of approximately 35 divisions and about 44 brigades. These forces are supported by roughly 40 artillery, surface-to-surface missile, air defense, and anti-aircraft artillery divisions and brigades and include various special operations forces, reconnaissance, army aviation, engineer, communications, chemical defense, electronic warfare, and “high technology” units. Currently new weapons and support equipment are entering the ground forces in all corners of the

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<sup>3</sup> Peng Guangqian and Yao Youzhi, eds., *The Science of Military Strategy* (Beijing: Military Science Publishing House, 2005), 224.

<sup>4</sup> *Ibid.*, 228.

country. Entire units often do not, however, receive a complete complement of weapons for all subordinate elements at the same time. Some units likely will have mixes of old and new weapons for some time to come. Main force combat and combat-support units currently comprise only about half of the total ground force number (somewhere around 700,000–800,000 personnel). Among the local forces, an estimated 200,000 army troops are assigned to permanent border and coastal defense responsibilities.<sup>5</sup>

Army reserve units number approximately 40 divisions, 25 brigades, and several regiments. Reflecting China's preoccupation with attack by long-range aircraft and missiles, fully one-third of the number of PLA reserve divisions and brigades are air defense units. Urban air defense is a major emphasis for the militia, along with repair of infrastructure, such as roads, railroads, and electricity grids that would be required if China were struck by long-range weapons.

Though amphibious training receives the bulk of foreign attention, units in all military regions engage in training for many missions, such as border defense, defense against amphibious operations, high-altitude and desert operations, forest and urban operations, and especially anti-terrorist operations. Active-duty units routinely incorporate reserve units, militia forces, and civilian support into training scenarios. These efforts are often coordinated in joint military-civilian command posts linked by modern communications and manned by military, party, and government officials. Though many foreigners believe the likelihood of mainland China being attacked is low, PLA ground forces continue the process of developing capabilities that—if allowed to atrophy—cannot be created instantly or cannot be reconstituted quickly.

### *Self-Assessment*

While the PLA press acknowledges that progress has been made in developing capabilities, authoritative essays repeatedly point out gaps between PLA capabilities and requirements for modern combat. Self-assessments from 2006 include the following:

- *General assessments* ≈ "...there is a gap between the current level of modernization in our military and the requirement that must be met

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<sup>5</sup> The longer version of this article contains a detailed estimated ground force order of battle from which the numbers given here are drawn. See Dennis J. Blasko, "PLA Ground Force Modernization Underway in All Military Regions, Preparing for a Variety of Missions" (paper presented at the conference "Exploring the 'Right Size' for China's Military PLA Missions, Functions, and Organization," Carlisle Barracks, PA, October 6–8, 2006).

in order to win regional informatized wars, there is still a gap between the current military power of our military and the requirement of fulfilling the historic mission of our military for the new period...”<sup>6</sup>

- *Lack of funds* ≈ “Money is needed in many aspects. The contradiction between the needs of military modernization construction and the short supply of funds will exist for the long run.”<sup>7</sup>
- *Lack of qualified personnel* ≈ “At present, the quality of our officers and soldiers has comparatively improved. However, there is still a gap between the current level and the requirements that must be met in order to win wars.”<sup>8</sup>
- *Problems in joint training* ≈ “At present, our military is still comparatively weak in joint training...joint actual-troop operations are still insufficient and there is still a comparatively wide gap between the current joint operation abilities and the requirements of actual battles.”<sup>9</sup>
- *Technology gap* ≈ “Over recent years, our military has made leaps-and-bounds progress in weaponry and armaments construction. However there is still a considerable gap between the current level and the requirement that must be met in order to effectively fulfill the historic mission of our military in the new period of the new century.”<sup>10</sup>

Though the PLA apparently has yet to make a major change to the ratio of ground forces to air and sea forces, a completely modernized PLA is likely to see growth in the relative sizes of the navy, air force, and Second Artillery at the expense of the army. The appropriate mix will take years, if not decades, to materialize (and will be much more costly than a motorized ground force). Nonetheless, the army will likely continue to be the single largest major component of the PLA for some time into the future.

Based on authoritative assessments in the military press, the senior leadership of the PLA appears to have a realistic understanding of both the strengths and weaknesses of the force. At this stage in the PLA's modernization

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<sup>6</sup> “JFJB: Promote Innovation in Military Work Using Scientific Development Concept,” *Beijing Jiefangjun bao*, trans. Open Source Center (OSC), August 6, 2006, 1.

<sup>7</sup> “JFJB: Scientific Development Concept as Guidance for Building Modern Logistics,” *Beijing Jiefangjun bao*, trans. OSC, August 8, 2006, 1.

<sup>8</sup> “JFJB Commentator on Promoting PLA's Informatized Military Training (4),” *Beijing Jiefangjun bao*, trans. OSC, July 29, 2006, 1.

<sup>9</sup> “JFJB Commentator Urges Need for Improved Joint Operations Capability, Doctrine,” *Beijing Jiefangjun bao*, trans. OSC, July 25, 2006, 1.

<sup>10</sup> “JFJB Contributing Commentator on Need To Informatize Weaponry Development,” *Beijing Jiefangjun bao*, trans. OSC, August 9, 2006, 1.

process, China's senior military leaders do not seem to be overly eager to test their forces' capabilities in battle and see the need for up to fifteen years of continued personnel improvement and equipment modernization—though, if ordered by its civilian leadership, the PLA will do its best to accomplish any military missions assigned. ◆

## Rightsizing the People's Liberation Army Navy: How Much Naval Force Will Beijing Deploy by 2016?

*Bernard D. Cole*

The current Chinese navy—the People's Liberation Army Navy (PLAN)—has since its founding in 1949 labored as an adjunct of the army. It was not until the end of the Cold War and the removal of the Soviet threat that Beijing felt able to direct significantly increased defense resources to modernizing what has throughout its existence been a marginally effective coastal defense force.

By 2006 the People's Republic of China (PRC) had already deployed a navy with the ships, submarines, aircraft and systems ready to serve in pursuit of specific national security objectives, with Taiwan at the head of that list. This process of modernization—which includes improved personnel education and training, further doctrinal development, and a coherent maritime strategic view from Beijing—will almost certainly continue throughout the next decade. By 2016 China will have available as an instrument of national power a navy capable of carrying out assigned missions. The PLAN of 2016, at three times its present size, will dominate East Asian navies—with the possible exception of the Japan Maritime Self-Defense Force (JMSDF)—and will offer a very serious challenge to the U.S. Navy when it operates in that region's waters. Present trends indicate that by 2016 the Chinese navy will allow Beijing to exert hegemonic leverage in maritime East Asia. This essay offers a brief review of PLAN development to 2016.

### *The Current Composition of the PLAN*

China's surface ship force is on the leading edge of current PLAN modernization. The PRC has launched new ships every year since 2000, following the adoption of a more deliberate but well-funded ship design and commissioning program during the 1990s. Particularly conspicuous


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are two ship types—destroyers and frigates—both of which are armed with very capable antisurface ship cruise missiles (SSM). The ship classes are all designed to be multi-mission capable, which means they are assigned missions across the spectrum of naval warfare areas, especially antisurface ship warfare (ASUW), antisubmarine warfare (ASW), and antiaircraft warfare (AAW).


The ship-building programs launched by the PLAN at the dawn of the 21st century reflect both new confidence in and expertise of the Chinese warship construction industry. China has recently launched three new classes of destroyers and one new class of frigate. The *Luyang I*, *Luyang II*, and *Luzhou* class destroyers are all gas-turbine powered ships designed with some stealth characteristics and intended to provide the PLAN for the first time with ships capable of area AAW defense.

*Submarine Force*  China is currently building and deploying a new class of nuclear attack submarine (SSN), the Shang class. Two of these boats are currently operating, with at least one more under construction. The Shang strongly resembles the 1980s Soviet-designed Victor III class SSN, although no doubt in comparison it is much modernized. The Shang has been compared to the U.S. Los Angeles class SSN, which although now 30 years old, continues to form the bulk of the U.S. submarine force.

The PLAN has never succeeded in deploying a nuclear-powered submarine with nuclear-tipped inter-continental ballistic missiles (ICBM). The *Xia* class fleet ballistic missile (FBM) submarine was constructed in 1987 but apparently never regularly patrolled, probably due to engineering problems.

China is building a new FBM: the Type 094, or *Jin* class. Beijing seems determined to have more than one “leg” to its nuclear deterrent force. A contributing factor may be the desire of the PLAN to have a role in this mission, although FBMs are subject to command and control of the Chinese national command authority (operating through the Second Artillery) and are not directly under the control of the PLAN.

China already deploys the world’s most formidable force of conventionally powered submarines (SS). At least twelve *Songs* have been commissioned or are in production. This class appears to be the PLAN’s indigenously produced, conventionally powered submarine of choice for the first three decades of the 21st century. China has also purchased twelve Russian-built *Kilo* class boats, an SS that hitherto has been one of the very best in the world.

*Naval Aviation*  The primary aviation strength of the PLAN lies in its shipborne helicopter fleet. Sixty or so aircraft of either French or Russian design are deployed, most of them on board ship. All fixed-wing aircraft

are based ashore, including approximately 48 of the Su-30 fighter-attack aircraft that China has purchased from Russia. This is the PLAN's only truly modern tactical aircraft, although the 18 JH-7s and 120 J8IIs are the result of indigenous attempts to produce a contemporary fighter aircraft.

China's naval aviation force—People's Liberation Army Air Force (PLAAF)—also deploys Soviet-designed B-6 bombers employed primarily as vehicles for launching anti-ship cruise missiles (ASCM). The PLAAF's relatively weak patrol and ASW aviation force—with approximately two dozen H-5 and H-6 aircraft operating—apparently continues to provide China's primary air-to-air refueling and electronic warfare aircraft for maritime missions.

*Personnel and Training* — The PLAN has during the past decade and a half significantly revised its system of educating and training enlisted technicians. Both the pursuit of naval modernization and the need to address operational requirements have accentuated the PLAN's need for a well-developed corps of non-commissioned officers (NCO) who are both proficient technicians and effective leaders. As a result, such a corps of technicians and NCOs is emerging within the PLAN.

A similar phenomenon is occurring in the PLAN's officer corps. To expand its base of available, qualified officer candidates, the PLAN has during recent years established several officer accession programs similar to the U.S. Reserve Officer Training Corps (ROTC). Although still based on the calendar year, the PLAN's training paradigm adheres to a training program that (at least on paper) proceeds from individual personnel training to team, crew, multi-ship, and finally to joint training on a significant scale, sometimes involving units from China's three fleets, the army, and the air force.

### *Looking Toward the Future*

The PLAN understands the importance of personnel education and training. Just a decade from now, PLAN personnel will be better educated, more thoroughly trained, and at least as patriotically dedicated to their mission as their predecessors. Meanwhile, platform and material modernization is occurring across all PLAN communities: aviation, surface, and subsurface. The subsurface community has clearly been selected by Beijing, however, to serve as China's primary instrument of naval force.

The 2006 white paper on China's defense continues the strong indications the 2004 white paper gave of the PLAN's increased stature and perceived value in the eyes of Beijing's decisionmakers. The national military strategy of "active defense" includes the navy, which is described as "aim[ing] at gradual

extension of the strategic depth for offshore defensive operations and enhancing its capabilities in integrated maritime operations and nuclear counterattacks.” The navy is charged with “build[ing] itself into a modern maritime force...of combined arms with both nuclear and conventional means of operation” and is described as integral to China’s efforts to improve logistics by establishing across the armed services an integrated system of “materials procurement and management.”<sup>1</sup>

China is determined to continue naval modernization across the spectrum: ships, submarines, aircraft, and personnel. The emphasis on improving amphibious and surface combatant forces underscores China’s concern with the Taiwan situation, while the importance of improving joint operational and long-range precision strike capabilities implies direct concern over possible U.S. intervention in that situation. A number of such key strategic regions for China are outlined below.

*Taiwan* ≈ China’s number one geostrategic concern is Taiwan’s status. More than that, ensuring Taiwan’s reunification with the mainland is a matter of revolutionary ardor and has been elevated by Beijing to symbolize Chinese nationalism. Beijing refuses to discount the possibility of employing military force against Taiwan, and PLAN modernization would be one of the military instruments of choice in using force.

*The East China Sea* ≈ The East China Sea is China’s front porch, vital for national defense. These waters contain the nation’s most important fishing grounds, may be the site of rich energy deposits, and are the scene of a sovereignty dispute with Japan. This dispute concerns the Daoyutai (in Chinese) or Senkaku (in Japanese) Islands, a cluster of barren, uninhabited rocks claimed by both nations. Although equidistant (170 km) from the Japanese Ryukyu Islands and Taiwan, the Daoyutai are located on China’s continental shelf as it is defined in the United Nations Convention on the Law of the Sea (UNCLOS).<sup>2</sup>

The Chinese navy of 2016, given even moderate progress, will be able to operate in an East China Sea scenario with surface and air forces that have trained and exercised together, can communicate among units and with shore stations effectively and in real time both verbally and via computer, share integrated systems, and operate in accordance with commonly accepted

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<sup>1</sup> Information Office of the State Council, People’s Republic of China, *China’s National Defense in 2006* (Beijing, December 29, 2006) ≈ <http://www.fas.org/nuke/guide/china/doctrine/wp2006.html>.

<sup>2</sup> According to Article 76 of UNCLOS, “The maximum limit of a claim cannot exceed 350 nm from the baselines of the territorial sea or 100 nm [nautical miles] from the 2,500-meter isobath.” See “UNCLOS Survey Requirements and Services” ≈ [http://www.unclos.com/papers/Requirements\\_Services.ppt](http://www.unclos.com/papers/Requirements_Services.ppt).

tactical doctrine. The continuing submarine modernization program in which Beijing is so heavily investing will enable China to divide the East China Sea into submarine operating areas assigned to at least 24 modern submarines armed with very effective cruise missiles capable of submerged launch.

*Malacca* ∼ Speaking in 2004 President Hu Jintao noted China's "Malacca dilemma." He was referring not only to "indigenous" problems such as piracy but also to the possibility of the United States having a "choke hold" on China's seaborne energy imports, 80% of which flow through Malacca.<sup>3</sup>

Should Beijing decide that the PLAN must be capable of defending South China Sea SLOCs (sea lines of communication) and the Malacca Strait, China would have to make extremely large investments in material and personnel resources, since the Chinese navy is incapable today of carrying out such a mission. The navy would have to increase the number of state-of-the-art warships from the less than twenty currently deployed to at least double that number.

### *Conclusion*

Driven by the pursuit of national security objectives that are clearly dominated by the goal of Taiwan's reunification with the mainland, China has over the past decade and a half embarked on a process of PLAN modernization that is sure to extend over the next decade. Currently boasting the world's most formidable force of conventionally powered submarines, China has been building and deploying a new class of nuclear attack submarine and has launched a ship-building program that each year since 2000 has produced new ships designed to be multi-mission capable. While this ship-building program has demonstrated the increasing expertise of Chinese warship construction, modernization of China's naval aviation force (although including attempts to produce a contemporary fighter jet) has progressed at a less impressive pace. These PLAN modernization efforts, combined with a revised approach to education and training of navy personnel, will by the year 2016 put the Chinese navy in position to not only dominate other navies in the East Asian region but pose a challenge to the U.S. Navy as well. ◆

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<sup>3</sup> Quoted in David Zweig and Bi Jianbai, "China's Global Hunt for Energy," *Foreign Affairs* 84, no. 5 (September/October 2005): 34; and Ji Xiaohua, "It Is Not Impossible to Send Troops Overseas to Fight Terrorism," *Sing Tao Jih Pao (Hong Kong)*, trans. Foreign Broadcast Information Service (FBIS), June 17, 2004, A27.

## PLA Navy Building: Rationale and Prospects for the Future

*Michael McDevitt*


The People's Liberation Army Navy (PLAN) has been introducing capable new ships, submarines, and weapons over the past fifteen years. Building and sustaining such a modern navy capable of conducting a “modern war under high-tech informationalized conditions” is a very expensive proposition.<sup>1</sup> This modernization effort strongly suggests that Beijing—a leadership that is not schooled in maritime affairs—believes that the strategic interests of the state can be secured only with a robust naval force. This new strategy is a historic departure from the strategic traditions of the People's Republic of China (PRC). This essay explores the drivers behind changes in force posture, size, and capabilities of the PLAN, examines the history leading to China's current naval capabilities, and closes by postulating that China will undertake yet another round of change in naval strategy.<sup>2</sup>

### *Maritime-Oriented Strategic Drivers*


This essay postulates that five separate but interrelated factors animate or drive the leadership to actively support the development of the PLAN: (1) what the PLA calls the “major strategic direction,” which essentially means the compass direction from which potential threats to Chinese interests originate, (2) a maritime strategy that comports with the continental strategic tradition of China, (3) the need to deter Taiwan's independence and, if necessary, to deter or defeat an approaching U.S. Navy relief force

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<sup>1</sup> U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China 2005*. Office of the Secretary of Defense (Washington, D.C., May 2005). This and the preceding years' annual reports are the most authoritative open-source references to PLA modernization. In terms of major warships, since 1995 the PLAN has commissioned about 31 new submarines and 26 new surface combatants (destroyers and frigates). The Navy has also fielded sundry modern missiles and torpedoes with which to arm these vessels.

<sup>2</sup> Information Office of the State Council of the People's Republic of China, *China's National Defense in 2004* (Beijing, December 27, 2004)  <http://www.fas.org/nuke/guide/china/doctrine/natdef2004.html>.

if the PRC elects to attack Taiwan, (4) the historically novel situation in which international seaborne trade is what drives the economic growth of China, and (5) the fact that the PRC's economic development is increasingly dependent on oil and natural gas that is delivered to the PRC by ships.

The PRC is investing in navy building for the straightforward reason that without a capable navy, China has serious strategic vulnerabilities that it otherwise cannot address. China's land frontiers are stable; looking east from Beijing beyond its seaboard, however, the situation is more strategically problematic. The PRC's maritime approaches are replete with unresolved sovereignty issues and genuine vulnerabilities. Strategic vulnerability from the sea is not a new issue for China. Weakness along China's long maritime frontier has been a problem for Beijing since at least 1842, when the Treaty of Nanking ended the First Opium War. This three-year conflict with Great Britain exposed imperial China's military weakness and ushered in the so-called Century of Humiliation. The repeated military and diplomatic humiliations and defeats that China suffered, which came mainly *from the sea*, were inflicted by Western powers and Japan.<sup>3</sup>

What is different today is that the PRC has the resources and political coherence necessary to address the reality that the vast majority of China's outstanding sovereignty claims and unresolved strategic issues are *maritime* in nature, and so the major strategic direction is toward the sea. Consider the following issues:

- Taiwan is an island. It is the combination of Taiwan's air defense and the threat of intervention by the U.S. military (primarily the U.S. Navy) that effectively keeps the Taiwan Strait a moat rather than a highway open to the PLA.
- Perhaps as strategically significant as Taiwan to a PLA planner is the geostrategic reality that the PRC's economic center of gravity is on its eastern seaboard, which is extremely vulnerable to attack from the sea—a military task the United States is uniquely suited to execute.
- Territorial disputes with Japan over islands and seabed resources in the East China Sea have become more serious and represent a potential flash point where Sino-Japanese interests are contested. Each state is

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<sup>3</sup> Dean Cheng, "Shedding the Century of Humiliation: China's Place in Asia," paper prepared for the Sino-Japan Strategic Rivalry Workshop at CNA headquarters, Alexandria, VA, April 2006.

emphasizing its claims by the periodic deployment of naval and coast guard vessels. The entire issue is maritime in nature.<sup>4</sup>

- Unsettled territorial disputes, and their concomitant resource issues, remain with respect to the Spratly Islands and the South China Sea—a problem clearly maritime in nature.
- China's entire national strategy of reform and opening depends largely upon maritime trade and commerce. Note that the PRC's economy is driven by the combination of exports and imports, which together account for almost 75% of China's GDP. This trade travels mainly by sea.<sup>5</sup>
- Finally, there is the issue of energy security. It has become commonplace to observe that the PRC will increasingly depend upon foreign sources of oil and natural gas, most of which come by sea.<sup>6</sup>

Beijing's primary military competitor is the United States, which is the world's foremost naval power and maintains—as it has for the past 50 years—a significant naval presence on China's "doorstep." Should the PRC elect to use force to resolve either reunification with Taiwan or outstanding maritime claims, the United States is the one military power that could deny China success. With its air and naval presence in the region, the United States could stymie any attempt to use the growing capability of the PLA to settle these issues by *force majeure*. The United States is also becoming even more closely allied with China's historical antagonist Japan, which also has an excellent navy and a formidable maritime tradition.<sup>7</sup>

Because of these factors, and especially because China's economic health depends upon unimpeded access to and use of the high seas, Beijing has been forced to think more seriously about how to deal with its maritime frontier.

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<sup>4</sup> The Center for Naval Analyses has partnered with the Institute for Defense Analyses, National Defense University, and Pacific Forum/CSIS on an eight-month project that examines all aspects of the current state of Sino-Japanese relations. The study is paying particular attention to the disputes in the East China Sea. A final report was completed in December of 2006. See "Chinese Warships Make Show of Force at Protested Gas Rig," *Japan Times*, September 10, 2005 ≈ <http://search.japantimes.co.jp/print/nn20050910a1.html>.

<sup>5</sup> Author's discussion with Daniel Rosen, President of China Strategic Advisory, LLC, January 24, 2007.

<sup>6</sup> Dan Blumenthal and Joseph Lin, "Oil Obsession: Energy Appetite Fuels Beijing's Plans to Protect Vital Sea Lines," *Armed Forces Journal*, June 2006 ≈ [http://www.aei.org/publications/pubID.24499,filter.all/pub\\_detail.asp/](http://www.aei.org/publications/pubID.24499,filter.all/pub_detail.asp/).

<sup>7</sup> A recent expression of PRC angst over the strengthening of the U.S.-Japan alliance and Japan's evolution toward becoming a more normal, major power is found in the discussion of "The Security Environment" in the first section of the PRC's 2006 White Paper on defense; see Information Office of the State Council of the People's Republic of China, *China's National Defense in 2006* (Beijing, December 29, 2006) ≈ <http://www.fas.org/nuke/guide/china/doctrine/wp2006.html>.

### *The Current Navy: Choices and Regional Implications*

Given that the strategic case for navy building emerged some twenty years ago, the Central Military Commission (CMC) and PLA had to choose what sort of navy to build. The choices were relatively straightforward. One was the historic model of the Imperial Japanese Navy (IJN)—a U.S.-style “blue water” navy. Developing such a navy would, however, have meant a departure from China’s continentalist strategic tradition. Besides being counter-cultural to a land force-dominated PLA, a Western-style blue water navy would have been very expensive and very difficult to make credible in terms of training and technology. China’s only attempt to field such a navy met with disaster in 1895.

The PRC’s early relationship with the Soviets provided the second, more obvious template for the PLA. The geostrategic circumstances facing the Soviet Union and China were similar in terms of threats from the sea, and the defensive Soviet-style anti-access model was also less expensive and easier to build. The template is straightforward: employ a very effective open-ocean surveillance system to detect approaching naval forces that can be attacked by land-based cruise missiles, firing aircraft, and submarines. This permitted the PLA to capitalize on Soviet-developed technology and operational concepts and (as the concept evolved) take advantage of one of the few PLA strengths—its ballistic missile force. In the case of ballistic missiles, the key is the ability to develop maneuverable warheads that can hit moving warships. This defensive Soviet approach to navy building fit within the continentalist worldview at the highest levels of the military and party decisionmakers.

This approach to navy building also fits well with the political message that Beijing has been sending the world: China’s rise will be peaceful and non-threatening. Fielding an obviously defense oriented navy is tangible evidence that the PRC is not going to become an expeditionary or power-projection threat. Of course, Japan and the Korean peninsula are within or adjacent to the PLAN’s sea denial threshold—the area inside the first island chain.

The PLAN’s submarine force in particular is a capability-based threat to Japan’s economic lifelines of maritime trade that Japan cannot, and probably will not, ignore. For the rest of Asia, an avowedly power-projection PLAN would be counterproductive to China’s broader strategic objectives of not creating powerful enemies in the region, especially since such a naval force would not be essential to satisfying the PRC’s strategic objectives. In this context, the PLAN’s focus on commissioning many more diesel than nuclear submarines also helps reinforce the positive diplomatic message of a peaceful rise. Diesel submarines are quieter, very hard to find, and create the image

of being defensive in nature. They fit within the template of East Asian naval developments that have South Korea, Singapore, and Malaysia joining Japan, Taiwan, and Australia as nations with conventionally powered submarines.

It is unlikely that while developing his “island chain” threshold approach to maritime strategy, PLAN Admiral Liu Huaqing foresaw the tremendous growth in China’s global trade and quest for natural resources (especially energy). Nor is it likely that he foresaw the PRC’s growing international role in UN peacekeeping. The idea that thousands of PRC citizens would be working or traveling abroad did not seem likely to any student of China twenty years ago. The fact that those citizens might need protection from terrorists or criminals was equally unanticipated.

This combination of factors, plus the pressure from the United States to become a responsible stakeholder, are creating “demand signals” for a PLAN that can support UN-sanctioned missions, protect PRC interests abroad with a show of force, protect or evacuate PRC citizens in jeopardy, protect sea lines of communication, respond to natural disasters, and demonstrate PRC resolve in support of embattled friends in Africa and along the South Asia littoral. These are missions that an anti-access naval force are not well equipped to execute.

### *Looking to the Future: A Second Iteration of PLA Naval Strategy and Navy Building?*

Today these are issues that Beijing and the PLAN are just beginning to seriously consider. To think about wartime employment concepts alone is not enough; the PLAN, unique among all of the PRC’s military services, must also now consider distant, prolonged peacetime operations as part of its core mission set.

These combinations of potential missions will require the PLAN to learn how to deploy and sustain surface combatants, amphibious ships, and support ships on distant stations for long periods of time. Such missions will also almost certainly create a sound rationale for the PLAN to build some sort of aircraft carrier, because helicopters are particularly important in most of these missions.

The PLAN thus probably faces another iteration in its future. While continuing to maintain a defensive strategy to protect China and its possessions, the PLAN will also deploy a force whose primary utility will be to provide peacetime presence, sea lane monitoring, and crisis response. Although this force will probably not be particularly valuable in case of a real

war with the United States, such a war is not likely. This “second-iteration navy” not only will be useful to the PRC in furthering its own interests but will also demonstrate that China too can be a responsible stakeholder in a military sense. ◆

## The Future Force Structure of the Chinese Air Force

*Phillip C. Saunders & Erik Quam*


The People's Liberation Army Air Force (PLAAF) is in the midst of a major modernization campaign aimed at retiring and replacing obsolete aircraft and building a modern air force. Despite fifteen years of modernization efforts, China's air force is still in transition between the type of force fielded by the PLAAF over its first fifty years and the development of a "new PLAAF" with modern equipment, doctrine, and capabilities. The thousands of J-6 fighters that once made up the Chinese fighter fleet have been retired; about one thousand older J-7 and J-8 fighters remain in service. The aircraft that will comprise the future PLAAF have begun to enter service, including 32 Russian-built Su-27UBK multi-role fighters and 116 F-11 China-assembled Su-27 variants, 73 Russian Su-30MKK fighters, and 62 of the new indigenously produced J-10 multi-role fighter. China is also developing and purchasing force multipliers including advanced transport aircraft, tankers, and early-warning aircraft.<sup>1</sup>

The Chinese vision is of a highly-trained modern air force equipped with high-tech aircraft, advanced precision-guided munitions, support aircraft that serve as force multipliers, and networked command-and-control and intelligence capabilities that allow the PLAAF to fight and win a high-tech war under "informationalized" conditions. This force would not only be more capable of carrying out missions such as air defense and support for ground forces against a modern adversary but could also undertake offensive strikes against ground and naval targets farther from China's borders.<sup>2</sup> The


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<sup>1</sup> International Institute for Strategic Studies, *The Military Balance 2007* (New York: Routledge, 2007), 350.

<sup>2</sup> Information Office of the State Council of the People's Republic of China, *China's National Defense in 2006* (Beijing, December 29, 2006)  <http://www.china.org.cn/e-white/>; and Ken Allen, "PLA Air Force Mobile Offensive Operations," *Taiwan Defense Affairs* 3, no. 2 (Winter 2002/2003): 120–45.

new PLAAF will integrate support systems such as airborne early-warning aircraft, aerial refueling tankers, intelligence collection and jamming aircraft to increase the effectiveness of combat aircraft and enhance war fighting capability.<sup>3</sup> Air force modernization will also include larger numbers of more capable air transports, which will enhance the effectiveness of PLAAF airborne forces for internal and external missions.

The Chinese air force of the future will consist of fewer, but more capable, aircraft and support systems. Yet the total size and precise mix of foreign and domestic aircrafts remain open questions. This essay, drawn from a longer book chapter, seeks to illuminate the future force structure of the PLAAF by exploring the key decisions and trade-offs likely to shape the aircraft and capabilities that the Chinese air force will pursue.<sup>4</sup> The emphasis is on the choices that will determine the future force structure of the PLAAF, with the goal of illustrating a range of possibilities and providing a guide to interpreting future developments.

### *Key Modernization Choices*

*Division of labor.* Missions such as air defense and conventional strike can be performed by several different types of weapon systems and assigned to different services or branches. The PLAAF has primary responsibility for air defense and operates most of China's fighters and long-range ground-based air defenses; however, the People's Liberation Army Navy (PLAN) naval aviation also operates air-defense fighters, and its ships carry increasingly capable surface-to-air missile systems.<sup>5</sup> Chinese air defenses must also defend against a range of potential threats, including cruise and ballistic missiles. Decisions about the division of air-defense responsibilities, the relative emphasis on ground-based air defenses versus fighters, and how much effort to place into defending against cruise missiles and ballistic missiles will all have a significant impact on the force structure of the PLAAF.

Conventional strike, against both land and naval targets, is a second major area where decisions about the division of labor among PLA services and branches may have a significant impact. China is pursuing a range of conventional


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<sup>3</sup> Office of the Secretary of Defense, *Annual Report to Congress: Military Power of the People's Republic of China 2006* (Washington, D.C.: Office of the Secretary of Defense, 2006), 4, 7.

<sup>4</sup> Phillip C. Saunders and Erik Quam, "Future Force Structure of the Chinese Air Force," in *Exploring the 'Right Size' for China's Military*, ed. Roy Kamphausen and Andrew Scobell (Carlisle, PA: Army War College Press, 2007, forthcoming).

<sup>5</sup> Kenneth Allen, Glen Krumel, and Jonathan Pollack, *China's Air Force Enters the 21st Century* (Santa Monica, CA: RAND, 1995), 114; and Bernard D. Cole, *The Great Wall at Sea: China's Navy Enters the Twenty-First Century* (Annapolis: Naval Institute Press, 2001), 85-86

strike capabilities including ballistic missiles controlled by the Second Artillery; cruise missiles that can be fired from air, ground, and naval platforms; and strike aircraft (including both multi-role fighters and bombers).<sup>6</sup> Chinese military officers see value in possessing a range of conventional strike options, which will permit multidimensional attacks against targets such as aircraft carriers and provide for more flexible attack options in a Taiwan contingency. Nevertheless, decisions about whether ballistic and cruise missiles can substitute for a new strategic bomber and about how the PLAN and PLAAF will divide maritime strike responsibilities will affect future PLAAF force structure.

*Domestic production vs. foreign procurement*  Though China has historically sought self-reliance in military production, this goal has been infeasible. PLAAF weapon systems have mostly been reverse-engineered from Soviet/Russian systems, been purchased outright, or incorporated significant amounts of foreign technology. Chinese leaders must strike a balance between domestic production of less capable aircraft and munitions and the acquisition of more capable weapons from foreign suppliers (with attendant uncertainties about excessive dependence and future support).<sup>7</sup> Although the PLAAF's initial purchase of the Su-27 was intended to gain experience operating and maintaining a modern fighter, the subsequent purchase of additional Su-27s, assembly of Su-27 kits as the "co-produced" J-11, and procurement of Su-30s reflect an effort to build a significant combat capability based on Russian fighters.<sup>8</sup> How the foreign-domestic trade-off affects future PLAAF force structure will depend on availability of foreign aircraft that are more advanced than Chinese designs, the degree to which Chinese manufacturers are able to close the quality gap, the perceived urgency to build combat capability, and the availability of foreign engines, avionics, and ordnance that can be incorporated into Chinese aircraft. Though China is presently pursuing foreign purchases and Chinese platforms that incorporate foreign components, the leadership's intention is for Chinese companies to master military aviation technologies and reduce China's dependence on foreign suppliers.

*Aircraft quality vs. quantity*  Though most air forces prefer more capable, high-technology aircraft, this preference is usually tempered by

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<sup>6</sup> *Annual Report to Congress: Military Power of the People's Republic of China 2006* (Washington, D.C.: Office of the Secretary of Defense, 2006), 27–29.

<sup>7</sup> Evan S. Medeiros, Roger Cliff, Keith Crane, and James C. Mulvenon, *A New Direction for China's Defense Industry* (Arlington, VA: RAND, 2005), 155–203.

<sup>8</sup> Rick Kamer, "Flankers of the People's Liberation Army," *Chinese Military Update* 1, no. 7 (January 2004), 5–8.

budget realities. The general trend is for air forces to decrease in size as they upgrade their fleet to more capable (and more expensive) aircraft. The PLA has historically sought to compensate for inferior quality by procuring large quantities of weapons but is now trying to upgrade the quality of its weapon systems. Within the fighter force there will be two key choices. The most important choice for the PLAAF will be whether to procure less-capable aircraft such as the FC-1 fighter and the JH-7 attack fighter in large numbers. The PLAAF has been reluctant to purchase these aircraft, but procurement decisions may ultimately be made by civilian leaders with a wider range of priorities. The second choice will involve the mix of advanced Russian aircraft and Chinese fighters. Will the future PLAAF consist largely of Su-27s and Su-30s, or will the J-10 become the PLAAF's mainstream advanced multi-role fighter? As China's first indigenously developed multi-role fighter, the J-10 program involves major design and systems integration challenges. Although procurement of the J-10 will likely be significantly less expensive than Russian fighters, the aircraft will also probably be less capable.<sup>9</sup>

*Force multipliers vs. combat aircraft*  $\approx$  "Informationalization" involves efforts to improve collection of intelligence regarding the position of enemy forces from a variety of sources, share that information widely among command elements and operational units, and control forces in a networked manner to make effective optimal use of information for tactical purposes. As applied to the air force, informationalization implies a greater investment in intelligence collection, command and control, and support systems in order to help ensure that ground-based and air assets function in an integrated and more effective manner. This emphasis suggests that the PLAAF will increase its investments in support systems—such as tankers, transports, AEW/AWACS, intelligence-collection platforms, and electronic-warfare systems—implying less procurement of combat aircraft.


### *Some Potential Outcomes*


PLAAF force modernization will most likely center on continued efforts to build a modern air force using a variety of means, including procurement of advanced aircraft from Russia, domestic efforts to design and produce advanced aircraft, and incorporation of imported engines, avionics, and munitions into Chinese aircraft designs. Chinese assessments


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<sup>9</sup> Zhang Jinyu and Xu Huidong, "PRC Air Force's Combat Capabilities Enhanced by New Jian-10 Fighter Planes," *Jiefangjun Bao*, trans. Open Source Center (OSC), December 30, 2006, 1; and David Lague, "China Builds a Superpower Fighter," *International Herald Tribune*, February 8, 2006.

of the international security environment and the resulting resource allocations for military and air force modernization will shape both the pace of modernization and the size of the Chinese air force. Three alternative possibilities illustrate other potential outcomes.

*Efforts to maximize capability quickly*  If Beijing were to decide that China's security environment was deteriorating, the Chinese leadership could accelerate air force modernization via such steps as increased procurement of foreign aircraft; redoubled efforts to acquire foreign AWACS, tanker, and transport aircraft; and accelerated production of both high- and medium-quality indigenous aircraft. The PLAAF would shelve efforts to replace imported components with Chinese equivalents in favor of stockpiling critical foreign components. Because of procurement and training timelines, the PLAAF would require at least two to three years to produce substantial gains in capability.

*A high-tech air force*  This path would emphasize both advanced aircraft, support systems, and the C4I capabilities to integrate aircraft into informationalized operations. The PLAAF would focus procurement on Russian fighters (and possibly the J-10) and might also explore "co-development" of new advanced aircraft with Russian partners. The PLAAF would retire older aircraft as more capable, advanced replacements entered the force. Investment in support aircraft such as AEW/AWACS and tankers would be a priority, along with renewed efforts to procure foreign platforms and technology and to intensify indigenous development efforts.

*A domestically produced air force*  This path would emphasize indigenous production and avoid reliance on foreign suppliers, implying less emphasis on procurement of Russian aircraft, increased purchases of J-10 fighters (and possibly FC-1 and JH-7 aircraft), and enhanced efforts to replace foreign engines and avionics with indigenous equivalents. Development of force multipliers such as AEW/AWACS, tankers, and transports would depend on how quickly the Chinese defense industry improves. This approach implies a more relaxed pace of modernization, but would lay a firmer foundation for future development of advanced aircraft. It would imply confidence that China's security environment is improving and that a military conflict is unlikely in the medium term.

Although the choice of modernization pathways and decisions about trade-offs will have a significant influence on future PLAAF force structure, it is already clear that the PLAAF of the future will be a significantly smaller but more capable air force. 

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## China: Warfare in the Information Age

Larry Wortzel


At the intellectual level, the People's Liberation Army (PLA) understands the way that technology has driven a "revolution in military affairs," affecting how commanders organize and command forces and the way those forces coordinate on the battlefield. The white paper on national defense released by China's State Council in December 2006 acknowledges, "a revolution in military affairs is developing in depth worldwide," noting "military competition based on 'informationalization' is intensifying."<sup>1</sup>


For the most part, PLA military theorists are learning to apply technology to war by watching how the U.S. armed forces have experimented with technology and performed in combat. Senior PLA leaders consider the United States to be the most advanced military force on which to base their own military development. They also see the United States as the most likely potential enemy against which China may need to employ or counter the latest means of command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR). Many in the PLA fear that the latent power of the United States gives Washington the capability to coerce or dominate China, forcing Beijing to abandon its own interests.

The goal of the PLA is to create a more modern force that can challenge or deter the best military forces in the world.<sup>2</sup> China's military today is, however, not a uniformly high-technology force. A number of systems are able to work at sophisticated levels, but the PLA cannot field a fully digitized force across the spectrum of its military systems. The PLA is working to apply "network-centric warfare" concepts but lacks a comprehensive set of the data

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**NOTE**  This essay is a shortened version of a paper originally presented at the conference "Exploring the 'Right Size' for China's Military: PLA Missions, Functions, and Organization," Carlisle Barracks, PA, October 6–8, 2006 and to be included in Roy Kamphausen and Andrew Scobell, eds., *Right Sizing the People's Liberation Army: Exploring the Contours of China's Military* (Carlisle, PA: Army War College Press, forthcoming).

<sup>1</sup> "China Publishes White Paper on National Defense," Open Source Center, December 29, 2006  <http://www.opensource.gov/>.

<sup>2</sup> Zhang Wannian, ed., *Dangdai shijie junshi yu Zhongguo guofang* [China's National Defense and Contemporary World Military Affairs] (Beijing: Military Science Press, 1999), 25. Zhang points out that even though the Soviet Union has broken up, "hegemonism still looms on the international stage" and that the United States is "primary among Western hegemonist nations."

transfer systems necessary to field a force that employs these technologies in a uniform way. It may be two to five years until the PLA achieves anything in the Asia-Pacific region close to the level of networking that U.S. forces can apply globally today.<sup>3</sup>

This essay overviews China's understanding and goals for C4ISR, the current state of China's capabilities in this area, and implications for the United States.

### *China's Conceptualization of C4ISR*

A number of recent publications and speeches by the PLA provide clues as to China's current thinking on the usefulness of C4ISR. For instance, to help achieve China's information warfare goals, two PLA Air Force authors, Sun Yiming and Yang Liping, have built a virtual roadmap to attacking joint U.S. data systems and communications. By consulting dozens of corporate web sites and tactical data link operator guides, as well as NATO and U.S. military manuals, the authors produced a virtual guidebook for electronic warfare to disrupt critical U.S. cooperative target engagement and C4ISR data links.<sup>4</sup>

As another example, one PLA Academy of Military Science researcher expressed the view that to engage in modern war the PLA must be able to "attack the enemy's knowledge systems and such high value targets as communications, carrier battle groups, and aviation warfare units."<sup>5</sup> The goal this researcher set for the PLA was to "destroy the enemy's ability to fight and control its forces."

At the highest levels of the PLA, senior officers understand that to increase the effectiveness of combat units, the Chinese military must digitize and network its command and control systems. The speeches of various PLA leaders at the All-PLA Military Training Conference in June 2006 reflect this

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<sup>3</sup> In an article on the theory of applying and managing sensor systems in battle, two researchers from the Aeronautical Radio Electronic Institute in Shanghai see the fusion of radar, infrared, laser, video, and electro-optical sensor systems as a future goal to be used by the PLA with technologies like pilotless aircraft. See Mou Zhiying and Wu Jianmin, "Duo pingtai xinxi fuhe yu zhinenghua chuanganqi guanli jishu zongshu," [Survey of Multi-Platform Information Fusion and Intelligence Sensor Management Technologies] in *Hangkong dianzi jishu* 36, no. 4 (December 2005), 20–21. Also see Peng Guangqian and Yao Youzhi, eds., *Junshi zhanlüexue jiaocheng* [The Science of Military Strategy] (Beijing: Military Science Press, 2005), 340–341. China's goals and needs in this area are also discussed in Pan Youmu, "Zhuoyan kongtian: yitihua tansuo kongtian anquan zhanlue" [Focus on Air-Space Integration and Study National Airspace Security Strategy], *Zhongguo junshi kexue* 19 (February 2006), 60–66.

<sup>4</sup> Sun Yiming and Yang Liping, *Xinxihua zhanzheng zhong de zhanshu shuju lian* [Tactical Data Links in Information Warfare] (Beijing: Beijing Post and Telecommunications College Press, 2005), 5, 276–314.

<sup>5</sup> Guo Wujun, *Lun zhanlue zhihui* [On Strategic Command and Control] (Beijing: Military Science Press, 2001), 226.

broad understanding of the way that C4ISR and information systems affect the battlefield. Jinan Military Region Lieutenant General Fan Changlun stressed “informatization, real war simulation, and field training” as the focuses of the military region’s efforts to train to win wars.<sup>6</sup>

One PLA general pointed out in a recent book that new forms of warfare involve more than massing troops or massing fires against an enemy. To wage a modern war, the PLA must be able to “use precision guided missiles” instead of massing traditional fires, as well as be able “to use viruses to attack enemy computer systems, and to carry out electronic warfare to attack enemy command and control systems.”<sup>7</sup>

### *The Current State of China’s C4ISR*

Given the state of affairs in 1996, when the sudden appearance of two U.S. aircraft carrier battle groups in the Western Pacific during the Taiwan missile crisis embarrassed senior political and military leaders in China, the PLA has done remarkably well in its modernization effort.<sup>8</sup> There is a basic data-exchange and target-locating architecture to support the PLA Navy and Air Force, even if the platforms have limited range. There are national-level and regional C4ISR networks, and the PLA will have a near-real-time regional intelligence collection capability from space in a few short years, if it does not already have that capability.

The PLA has fielded a national automated command and control system called *Qu Dian*.<sup>9</sup> It is a redundant, military-region or war-front system linking the General Staff Department headquarters and the PLA’s arms and services with regional combat headquarters and their subordinate major organizations. For full effectiveness, however, the system requires satellite data-exchange support and airborne radio and communications relay, which China still lacks.

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<sup>6</sup> “Jiefangjun Bao: Excerpts of Speeches by Leading PLA Officers on Military Training,” *Beijing jiefangjun bao*, trans. Open Source Center, June 27, 2006, 2.

<sup>7</sup> Li Bingyan, *Da moulue yu xin junshi biange* [Grand Strategy and the New Revolution in Military Affairs] (Beijing: Military Science Press, 2004), 52.

<sup>8</sup> On the way that the U.S. deployment surprised China, see Arthur S. Ding, “The Lessons of the 1995–1996 Military Taiwan Strait Crisis: Developing a New Strategy toward The United States and Taiwan,” in *The Lessons of History: The Chinese People’s Liberation Army at 75*, ed. Laurie Burkitt, Andrew Scobell, and Larry M. Wortzel, (Carlisle, PA: Strategic Studies Institute, 2003), 379–402.

<sup>9</sup> “China: Military Programs,” Center for Nonproliferation Studies, October 20, 2005  $\approx$  <http://cns.miiis.edu/research/space/china/mil.htm>. See also Bill Gertz, “China’s Military Links Forces to Boost Power,” *Washington Times*, March 16, 2000  $\approx$  <http://taiwansecurity.org/News/WT-031600.htm> The comparison between JTIDS and *Qu Dian* is in Hon. Bob Schaffer, “Remarks on China,” remarks to the House of Representatives, March 14, 2002, E360–E361  $\approx$  [http://www.fas.org/irp/congress/2002\\_cr/h031402.html](http://www.fas.org/irp/congress/2002_cr/h031402.html).

Other PLA combat systems have a more limited capability to act as airborne command posts and assist with combat data exchange. The enhanced Sukhoi Su-30MKK2 fighter under development for China will be capable of “tasking and controlling up to 10 other aircraft on a common [communications] net.”<sup>10</sup> The model already delivered to the PLA, the Su-30MKK, will control up to four Su-27s and link the system with data exchange to facilitate cooperative targeting.<sup>11</sup>

The PLA already has an airborne warning and control system (AWACS) built around the Russian Beriev A-50.<sup>12</sup> The system is equipped with Chinese-made phased-array radar and has a data link capability, data processing system, Identification Friend-or-Foe system, and C3I capability. The A-50, as well as China’s own Y-8 AWACS aircraft, can exchange data with other aircraft and naval ships equipped with compatible data links. The aircraft loiter time on station, however, is only about 90 minutes.

The PLA Navy’s destroyers are equipped with systems that function like the U.S. data link combat information transfer systems to support battle management and coordinated strikes on time-sensitive targets.<sup>13</sup> According to an Armed Forces Communications and Electronics Association (AFCEA) analyst, in some areas the Chinese ships are limited to “1940s era radar tasks of detecting and tracking air and surface targets for their own ship weapons.”

The command, control, and targeting architectures in development and fielded by the PLA are realistic responses for a major military power in the information age wishing to keep pace with improvements in armaments and technology. The dilemma that confronts U.S. military planners is to assess the uses to which the capabilities will be put. The problem for the United States (and its allies) is that there is no clear roadmap or outline of how the Chinese Communist Party Politburo Standing Committee intends to use such military power and technology. Many of China’s military strategists and senior leaders seem, however, to target the United States with this new military force. Moreover, when Chinese strategists raise the term “comprehensive national power,” they mean the combination of economic, political, diplomatic,

<sup>10</sup> Robert Hewson, “More Details on China’s Su-30MKK2,” *Jane’s Defense Weekly*, September 10, 2003 ~ <http://search.janes.com/>.

<sup>11</sup> Jackson, Paul, Lindsay T. Peacock, and Kenneth Munson, eds. *Jane’s All the World’s Aircraft, 2005–2006* (Coulsdon: Jane’s Information Group, 2005), 443.

<sup>12</sup> “KJ-2000 Airborne Warning & Control System,” *Sinodefence.com*, December 30, 2005 ~ <http://www.sinodefence.com/airforce/specialaircraft/kj2000.asp>.

<sup>13</sup> Zhang Kaide and Zhao Shubin, “Shimin daji zhihui kongzhi jishu chutan” [The Command and Control Technology of Time Critical Strikes], *Zhihui kongzhi yu fangzhen* 28, No. 2, April 2006, 1–5.

military, and cultural strength necessary to “compel” other nations to do China’s bidding.

### *Implications for the United States*

The PLA is very close to fielding a C4SIR architecture capable to support a campaign to about 2,000 kilometers out from the Chinese coast. To be able to maintain a competitive edge, the United States must continue to develop and stay ahead in the areas of kinetic and directed energy weapons, electronic warfare, and information warfare.

Once able to deploy satellite tracking and data relay systems capable of guiding missiles with maneuverable warheads, the PLA may well achieve its goal of targeting deployed naval battle groups. Thus, China is close to achieving a viable anti-access strategy that, as a minimum, would impede U.S. and Japanese military operations. This capability may be only two to five years away.

Because China’s long-term intent is not clear, policy responses are required. The “hedging” described in the last Quadrennial Defense Review as a shift of forces and priorities to Asia is one response.

PLA achievements have relied to a great extent on technical assistance from Russian, French, and British companies. With respect to Russia, diplomatic and economic pressure should discourage this military cooperation. Only recently have European Union states accepted that the United States has security interests in the Western Pacific and that EU technology sales to China can threaten U.S. forces. When EU nations were considering lifting the 1989 arms sanctions imposed on the PLA after Tiananmen, legislation by Congressmen Henry Hyde and Duncan Hunter would have excluded from participation in U.S. defense cooperation programs European firms that sold certain technologies to China. This type of legislative response is useful as long as China’s military actions or declarations impinge on U.S. security interests.

It is also important to remember that as the PLA becomes more dependent on the electromagnetic spectrum for military operations, it is more susceptible to interference in that spectrum. Continued PLA modernization requires access to space and the electromagnetic spectrum. Strong competition in both space control and information warfare will characterize the future military development of China and the United States for some time to come. ◆

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