

3. PLA Force Structure: A 20-Year Retrospective

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The force structure of any military consists of numbers of personnel and equipment, types of equipment, command and control mechanisms which define organizational structure, and the composition of units. With regard to the Chinese military, most discussion about force structure emphasizes numbers and equipment, especially new equipment entering, about to enter, or rumored or reported to be entering the inventory. (Some call this “bean counting.”) Descriptions of command relationships are also common, even if the implications of certain organizational structures rarely are analyzed adequately. Often discussions of force structure are only a small part of longer articles and books.

Currently there is a significant lack of literature dedicated to the existing and evolving force structure of the Chinese armed forces. However, without a working knowledge of the basic building blocks of military organization, reliable judgments about military capabilities and effectiveness cannot be properly made. As the machinery of warfare becomes more technical in nature, the characteristics of individual weapons are less important than how the various systems of weapons are integrated together. It is through force structure, doctrine, and tactics that this essential integration takes place. Effectively designed force structures create synergies that multiply the effects of individual units and weapons. Thus, a thorough examination of force structure must do more than simply count beans or describe command relationships.

Introduction

Over the past 20 years, the force structure of the Chinese armed forces, which includes the active and reserve units of the People’s Liberation Army (PLA), People’s Armed Police (PAP), and militia, has changed or been modified according to:

- The role of the military in Chinese society;
- The external threat to China;

- China's military doctrine;
- Lessons learned from studies of foreign militaries; and
- Technologies and equipment available.¹⁵³

Foreign observers have been only moderately successful in keeping track of these changes. Lack of direct access to the Chinese military in the late-1970s forced a dependence on limited information that could be derived from the Chinese media, primarily newspapers and magazines. As China opened to the West, contact with the PLA gradually increased, which greatly improved understanding. However, even with greater access to the mainland and the military, often there was a lag of one to two years before outsiders became aware of, could confirm, and would write about many of the changes in the PLA's force structure.

Unfortunately, most of the analytical writing about the PLA is confined to a few books and scholarly or specialist journals that are not widely available to the general public. Because of the nature of the journals and the publishing industry, most of the scholarly or technical writing on the PLA is delayed by the editorial process. Therefore, most of the public gets its information about the Chinese military through the mass media: newspapers, magazines, and the electronic media of television, radio, and now the Internet. But because many journalists have limited experience in China and very few have even the basic knowledge of military operations, misunderstanding and distortion of military developments have been major problems. Much of the mass media reporting on the Chinese military is superficial, focusing on numbers and equipment, and subject to manipulation by those with a non-objective agenda. Often the analysis necessary to put Chinese force developments into context can be found only in the books and journals that are published months or years after the events actually occurred. Especially in the atmosphere that surrounds the Chinese military in the late-1990s, this situation calls for writings about the PLA to be more understandable, timely, and accessible to the layperson.

A Short Overview of Doctrine and Force Structure

People's War Predominant

In the late-1970s, a bloated PLA of over four million personnel was structured to defend the Chinese mainland using the doctrine of "people's war." China's

¹⁵³The author would like to thank Dr. Dorothy Fontana for suggesting these last two determinants of force structure. Additionally, the force structure in other countries' militaries may also be influenced by treaty or alliance commitments. China has no such treaty obligations.

main threat was its communist neighbor to the north, the Soviet Union. The force was in the process of “returning to the barracks,” that is, removing itself from involvement in all aspects of civil society ranging from governance functions to running factories. Military modernization was acknowledged as necessary by the central leadership, but listed last among the Four Modernizations. The low priority for military modernization translated directly to low defense budgets, a situation that has been a key constraint on military modernization into the late-1990s. The PLA was required to grow much of its own food and produce in its factories many of the light industrial goods necessary for basic survival and mission accomplishment. In 1975, Deng Xiaoping called for cuts in this unwieldy force, but he was not able to implement them until he assumed China’s leading political role in 1978.

The PLA was dominated by the army and had a continental orientation. Its ground forces were organized around infantry corps, also called field armies, which generally had three infantry divisions and smaller armor, engineer, artillery, and other combat support or combat service support units. The structure lent itself to light infantry operations with some assistance from the other smaller ground force branches. In theory, a large militia would provide logistical and some combat support to main force and local force units as they “lured the enemy in deep” and drowned him in the vastness of continental China. Air and naval forces primarily had a defensive mission and, for the most part, operated independently of the ground forces. China’s nuclear forces were small, only about ten years old and structured for deterrence, and, should deterrence fail, to conduct retaliatory strikes against population centers in the USSR and U.S. forward bases in Asia.

People’s War Under Modern Conditions on the Rise

In the late-1970s and early-1980s, PLA strategists began considering a doctrinal modification that was intended to defend China closer to its borders and fight the Soviets in a more mobile style of war with a combined arms and joint force. Nuclear weapons were likely to be used. This new doctrine was named People’s War Under Modern Conditions. It called for a more flexible, professional PLA, incorporating increased numbers of modern weapons into its inventory. The ground forces emphasis shifted more to tanks, self-propelled artillery, and armored personnel carriers. This type of equipment added more mobility to the force and, if properly outfitted, could provide a degree of protection from the nuclear, biological, and chemical (NBC) weapons the Soviets were expected to employ.

However, because of the size and backwardness of the force, the cost of equipping enough of it with sufficient modern weapons to fight the Soviets was prohibitive to the Chinese budget. The Chinese defense industries were not up to the task of producing state-of-the-art weapons, so the PLA basically had to make do with the weapons in its inventory, upgraded by a few modifications. Only a few small purchases of more modern equipment from abroad (including some weapons from Western countries) could be afforded, and these were allocated only to selected units. Out of necessity, a large portion of the PLA remained structured best for the old-style People's War. Nevertheless, beginning in the 1980s, PLA infantry units that previously had very few vehicles began to be issued enough trucks to make them road mobile. This relatively inexpensive equipment upgrade (compared to the cost of equipping the force with enough armored personnel carriers or helicopters to transport the infantry) greatly increased the speed and distance forces could maneuver.

A reduction in the PLA's size removed some organizations with largely non-military missions from the force structure. In the early-1980s, the Railroad Construction Corps was turned over to the Ministry of Railways, and the Capital Construction Corps and Xinjiang Production and Construction Corps were removed from the PLA's control. Security and border defense units were transferred to the newly created paramilitary PAP. The PAP's main mission was domestic security, which, in theory, allowed the PLA to concentrate more on its external defense role. Still, the PLA retained a secondary mission of internal security. In 1984, a newly formed reserve force began to assume some of the tasks the militia traditionally was assigned.

The Beginnings of Local War

In 1985, Hu Yaobang announced publicly that the PLA would be cut by one million personnel in the next two years. The PLA leadership understood that these reductions would permit the integration of the branches of its ground forces and its naval and air forces required to conduct modern warfare. Plans were made to reduce the number of military regions from 11 to 7 and to transform the structure of the 37 field armies into "group armies," bringing together tank, artillery, anti-aircraft artillery, engineer, and NBC defense units under a combined arms, corps-level headquarters. These organizational changes were made over the course of the million-man reduction.

Also in 1985, Deng declared that the threat of a major war was remote. Instead, Deng forecast the more likely scenario to be limited, local wars fought on China's periphery. Military planners then began to think about how such a

Local War would be fought and how the PLA should be structured to meet these new challenges. While the doctrine to fight Local War was being developed, People's War Under Modern Conditions concurrently remained the PLA's primary doctrine for planning and training purposes. Because both doctrines were modernizations over the People's War concept, many of the force structure changes applicable to People's War Under Modern Conditions were appropriate for Local War. However, concepts in this new type of limited war were unfamiliar to many old cadres, some of whom resisted change.

By 1988, the personnel reduction was complete and the force numbered somewhere slightly over three million. Among other changes, the 37 field armies were reduced to 24 group armies and thousands of units at the regimental level and above were disbanded. The formation of small, mobile "Fist" or "Rapid Reaction Units" (RRUs) was a major organizational development peculiar to the Local War doctrine, which was becoming the dominant way of thinking about war. Among the group armies and within the PLA Air Force and Navy, a few units were designated as RRUs, were equipped at least partially with new equipment, and were on call to be deployed within hours of alert. RRUs were to be found in all military regions and could be deployed locally or wherever needed in the country. The air force's 15th Airborne Army of three divisions became the PLA's primary strategic RRU. The relatively new five thousand-man marine force in the navy could also perform rapid reaction missions. The first helicopter unit in the ground forces could deploy on its own or support other army RRUs. RRUs also received priority in training and would take part in the experiments that tested tactical concepts necessary for implementing the Local War doctrine. (At the same time, a small number of theoreticians in a few academic institutions began playing with concepts that later would become known as Information Warfare (IW), but these ideas did not receive much attention with all the other changes under way.)

Despite these dramatic changes in the military, defense budgets remained tight until the end of the 1980s. As the civilian economy expanded, the PLA was encouraged to help support itself through commercial activities in addition to maintaining its traditional sideline agricultural production and light industries. At first, most of the actual commercial activity was conducted by elements at higher headquarters, but gradually combat units also got into the act of running hotels and restaurants and performing other services. Transportation and construction engineer units hired themselves out to work on projects with no direct military application. Within a few years, perhaps twenty thousand PLA enterprises were in operation, but nobody knew the real numbers or how much

the so-called “PLA Inc.” was earning, or losing. In the rush to reap profits, economic competition developed among PLA units and local governments and businesses. Some units became involved in smuggling operations. Graft and corruption spread. Profits were problematic. The PLA’s participation in this sector of Chinese society was not turning out as expected.

These negative trends mirrored trends in the public at large and were one of the primary causes of the Tiananmen demonstrations in 1989. The PAP and civilian police force could not control the demonstrations to the satisfaction of the senior leadership, so the PLA was called in. The PLA’s role in the massacre reshaped its role in society. After martial law in Beijing was lifted, efforts were necessary to restore the stature of the PLA in the eyes of the Chinese population. One method to increase its prestige was to increase its budget and purchase new equipment. At the same time, the demise of the Soviet Union provided the Chinese government an opportunity to spend some of the new money it now was willing to devote to the military for the purchase of advanced military hardware that the West had denied China since 1989. The implosion of the USSR also forced the PLA to reexamine the threats it faced.

Local War Under Modern High-Technology Conditions Prevails; Exploring the RMA

Many of the old soldiers in the PLA were not ready for the changes to be confronted in the early-1990s. No enemy, plus new doctrine, new organizations, new equipment, and a new role in society, complicated army life. Because of the traditional emphasis on the role of man over weapons, many older officers were not enthusiastic about the introduction of new technologies into the PLA even in relatively limited numbers.

The Gulf War forced a change in old attitudes. After watching the conduct of Desert Storm, many Chinese officers reluctantly accepted the viability of high technology on the contemporary battlefield. PLA theoreticians began modifying the term Local War by adding the phrase “Under Modern High Technology Conditions.” The Gulf War was said to be an example of such a Local War Under Modern High Technology Conditions. New concepts and equipment demonstrated during the Gulf War campaign were studied. Units now had to be even more mobile, capable of extending their reach farther, and better prepared to work together as a joint army, navy, and air force team. By the middle of the decade, Local War Under Modern High Technology Conditions had become the dominant doctrinal thought in the PLA. At the same time, a few PLA thinkers expanded their study of other concepts of future

high-technology warfare, including Information Warfare, which became known under the rubric of the Revolution in Military Affairs (RMA).

Early in the 1990s, rumors and reports spread about another reduction in the size of the PLA. Numbers from two hundred thousand to seven hundred thousand were mentioned; several Group Armies were forecast to be eliminated. However, public announcement of the long-rumored reduction did not come until the 15th Party Congress in September 1997, when President and Chairman of the CMC Jiang Zemin announced that over the next three years another five hundred thousand personnel would be shed from the ranks. At the same time, the reserves and PAP would be expanded. What Jiang did not announce was the transfer of 14 PLA divisions to the PAP that had begun in late 1996.

The new reduction would not only eliminate whole units, many organizations that remained would become smaller. Missile, naval, and air force modernization would now precede modernization of the ground forces. Large numbers of older equipment in the air force and navy would be retired and not replaced. In the army, at least three group armies would be dissolved, and many if not all of the group armies that remained would lose a full division. Many divisions would be downsized into brigades. Emphasis in all services would be placed on transforming the PLA into a smaller, more technologically advanced force.

Ten months after the announcement of the five hundred thousand-man reduction, in July 1998, as part of the national campaign to fight smuggling and corruption, President Jiang ordered the PLA, PAP, and other security forces to divest themselves of their commercial enterprises. This order did not apply to traditional sideline agricultural production and some PLA factories, but was focused on the thousands of service industry enterprises that had sprung up in the past decade. With the strengthening of the PAP and the withdrawal from commercial enterprises, the PLA was returning to its more traditional primary role in society—defense from external threat.

However, the primary planning scenario for the PLA since the mid-1990s has not been to fight a traditional external enemy. Rather, in the late 1990s, preparation of military options and capabilities to assure that Taiwan does not seek independence has become the major focus of PLA operational planning. The possibility that the U.S. military may become involved in the defense of Taiwan is a worst-case factor that PLA planners also must consider. Taiwan's location allows for the capabilities applicable to scenarios for Local War Under Modern High Technology Conditions to be applied to it.

Overall, the relationship between doctrine and force structure as described above is summarized in Figure 1. For the past 20 years multiple doctrinal concepts have existed or been in development concurrently within the PLA. For example, in the late-1970s, People’s War was the PLA’s primary doctrine and People’s War Under Modern Conditions was in the preliminary stage of development. By the mid-1980s, People’s War Under Modern Conditions had become the primary doctrine; People’s War still remained but could be termed a residual doctrine. At the same time, Local War was in its preliminary stage of development.

The size of the PLA and the manner in which its doctrine has changed over the past 20 years have resulted in the simultaneous existence of elements within the force with differing structures, missions, and doctrinal orientations. Even today many ground force units are still best suited for People’s War operations to defend the Chinese mainland. Others, such as the RRU’s, have modernized to the point that they are trained for a role in Local War Under Modern High Technology Conditions. A very few units, such as missile and electronic warfare units, are also beginning to develop capabilities suitable for twenty-first century RMA warfare in addition to being integral to Local War scenarios.

	PW	PWUMC	LW	LWUMHTC	RMA	Force Structure
1978–85	PD	PL				Single Service Operations Field Armies
1985–88	RD	PD	PL			Joint Headquarters/ Operations Group Armies Fist Units
1988–92		RD	PD	PL	PPL	Rapid Reaction Units Smaller and Fewer Units
1992–		RD		PD	PL	More Hi-Tech
Legend: PW: People’s War PD: Primary Doctrine PWUMC: People’s War Under Modern Conditions PL: Preliminary Doctrine LW: Local War PPL: Pre-Preliminary Doctrine LWUMHTC: Local War Under Modern Hi-Tech Conditions RD: Residual Doctrine RMA: Revolution in Military Affairs						

Figure 1—The Relationship of PLA Doctrinal Developments to Force Structure

Foreign Writers Examine PLA Force Structure

Comprehensive Book-Length Studies

Because of the 20-year focus of this chapter, the works of Samuel B. Griffith, John Gittings, William W. Whitson, and Harvey W. Nelson were not examined. These scholars described the PLA from its beginning to the People's War phase of the late-1970s. Much of their information was based on interviews of prisoners of war, defectors, and various Chinese sources on Taiwan, as well Chinese military and political writings. But as a general rule, the PRC mainland was closed to them.

For the period in question, the first, and perhaps still the most comprehensive, full-length study of the PLA by a single author is Harlan Jencks' *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945–1981*.¹⁵⁴ Published in 1982, this book covered in depth everything from history to strategy to doctrine and force structure for the People's War PLA of the early 1980s. Significantly, this seminal work was based primarily on extensive scholarly research without the benefit of person-to-person interviews. Perhaps most important, however, Jencks' scholarship was honed by military and combat duty. This soldier-level experience allowed Jencks to consistently provide a level of analysis that few who have followed him have been able to match.

Jencks identified themes that are still relevant to the changes in today's PLA. In Chapter 5, which concentrates on force structure, Jencks:

- Emphasized the considerable variation that existed among the 37 corps and that even the classification of units as Type A, B, or C is an oversimplification (p. 148);
- Observed that if only a limited amount of modern weapons are available, “any attempt to ‘spread it around’ among different units would be extremely wasteful,” as well as its corollary, “the less complex a weapon or piece of equipment is, the more evenly and widely it is likely to be distributed” (p. 148);
- Identified the importance of the regimental level, “the smallest self-sustaining combat formation capable of independent operations” (p. 149);

¹⁵⁴Harlan W. Jencks, *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945–1981* (Boulder: Westview Press, 1982).

- Judged that the PLA is “only beginning to develop doctrine and techniques which the Soviet, American, British, and German armies worked out during World War II” (p. 151);
- Noted that new ideas are not being tested, not only because of a lack of equipment, but because of the “apparent disinclination of some senior officers to try anything new” (p. 152);
- Determined that the three airborne divisions have little military justification and therefore serve as “a highly mobile ‘fire brigade’ force in the event of internal unrest or rebellion” (pp. 157–158);
- Predicted the creation of the PAP (pp. 178–179); and
- Accurately identified the successor to the 8341 Unit, the Central Guard Unit, as the 57003 Unit (p. 139).

Jencks described in depth the national and tactical structures, which are required for understanding of any force structure. He also made several other important organizational distinctions that are necessary for an understanding of the peculiarities of the Chinese armed forces, such as the role of the People’s Armed Force Departments and the separation of the civilian defense industries from the PLA, that would confound many journalists for years to come. (Despite the fact that many subsequent books and articles described the distinction between PLA enterprises and the defense industries, many journalists writing about the PLA still do not understand the fundamental differences between the two.) *From Muskets to Missiles* was published before the force reductions of the 1980s, so, unfortunately, the PLA force structure it described was out of date only a few years later. Even now, there is no other volume, written by a single author, that is as thorough and comprehensive. The academic community needs a year 2000 version of Jencks’ work that focuses on changes that have taken place since the mid-1990s.

In the years since the publication of his book, Jencks has been one of the most prolific and astute observers of the PLA and the Chinese defense industries. In June 1984, his “‘People’s War under Modern Conditions’: Wishful Thinking, National Suicide, or Effective Deterrent” updated many of the themes he wrote about in *From Muskets to Missiles*.¹⁵⁵ In that article he again emphasized the importance of “tailoring” tactical organizations according to specific missions, instead of the standard cookie cutter organization assumed by some writers. The article also was a forum for the wider dissemination of the Defense

¹⁵⁵Harlan W. Jencks, “‘People’s War Under Modern Conditions’: Wishful Thinking, National Suicide, or Effective Deterrent,” *The China Quarterly*, No. 98 (June 1984), pp. 305–319.

Intelligence Agency's John J. (Jay) Sloan's 1982 testimony to the Senate Foreign Relations Committee regarding the six major requirements for upgrading Chinese military capability (p. 317):

1. Improved weaponry
2. Improved training/unit readiness/education
3. Improved doctrine and tactics
4. Improved defense technology/production base
5. Improved logistical system
6. Improved organization/command and control

Jencks added "improved officer personnel system" to the list, but identified "improved organization/command and control," that is, force structure, as the most difficult of these requirements. Though the PLA has made significant strides in each of these sectors over the past 17 years, Sloan's observations are still pertinent to the challenges facing the PLA today. Through the 1980s and 1990s, Jencks' later articles continued to provide insightful analysis of developments in PLA force structure and weapons capabilities, as well as many other aspects of Chinese military modernization.

In the mid-1980s, Ellis Joffe's *The Chinese Army After Mao* provided an updated and slightly differing assessment of the many issues Jencks covered a few years earlier.¹⁵⁶ (In particular, he saw a more significant break in Chinese military doctrine between People's War and People's War Under Modern Conditions than did Jencks [p. 81].) Both Joffe and Jencks refer to the works of Jonathan Pollack when describing Chinese nuclear capabilities, assessing it to be a minimal deterrent force.

Though he did not go into the same level of detail as Jencks (such a degree of detail was not necessary for his book), Joffe made several useful observations about force structure. Joffe's insights demonstrate the relationship of force structure to the PLA's role in society, the threat to China, and the PLA's doctrine:

- . . . a military doctrine also has to determine the organizational structure, the weapons procurement policy, and the internal practices of the armed forces in line with the kind of war they are expected to fight. (p. 93)
- In 1981, Song Shilong, commandant of the Academy of Military Science, noted in contrast to traditional People's War, "it is insufficient to rely on

¹⁵⁶Ellis Joffe, *The Chinese Army After Mao* (Cambridge: Harvard University Press, 1987).

the infantry alone.” In future wars, China will employ ground forces—which means combined arms—and methods of fighting will have to change “because of development in weapons and technical equipment.” (pp. 80–81) (Song’s message followed Joffe’s introduction to the term “People’s War Under Modern Conditions” as defined by Su Yu in 1977.)

- The army can no longer be a combat force and a civic force. (p. 81)
- The threat of the Soviet navy to China’s shores inspired the plan that envisioned the development of an ocean-going navy. (pp. 90–91)
- In the late-1970s, the “army in sneakers” was an “unarmed giant.” (p. 95)
- “While it is the duty of military planners to imagine the unimaginable, it is also their duty to distinguish between the essential and expendable.” (p. 117) (This sentence would be an appropriate motto for any force planner constrained by limited funding.)
- “A smaller and leaner army will have even less time and taste for non-military pursuits.” (p. 157) (This statement is a trademark of Joffe’s concept of military professionalism. As PLA Inc. grew, many elements of a still-bloated military were tempted to take part in questionable business activities. When the entrepreneurial army spread from higher headquarters to combat units, the leadership in Beijing initiated efforts to stop the growth of this cancer on its professionalism.)

Joffe pointed out the time lag between the initiation of reforms and their impact (p. 148). Though members of the PLA may write and talk about changes and reforms, the actual implementation of these ideas usually takes several years and undergoes several rounds of experimentation before they can be judged effective. The same can be said for the acquisition of new equipment and its impact on force effectiveness. Too many journalists and “analysts” do not understand the significance of this time lag in military modernization and underestimate the practical difficulties that accompany any major transformation in such a large, conservative organization. Other scholars have provided pithy commentary to emphasize the reality that Joffe identified. David Shambaugh often reminds us, “It is important not to confuse ambition with capability.” With reference to equipment acquisition, so does Bates Gill in his comment about the conclusions drawn by the Cox report on Chinese espionage activities and technology transfer to China, “It confuses acquisition with capability, period.”

Another of the PLA watchers who has been both prolific and insightful over the past 20 years is Paul H. B. Godwin. His full-length study of the PLA, *The Chinese Communist Armed Forces*, published in 1988, contains comprehensive analysis of the PLA as it was transitioning to accommodate the doctrine of People's War Under Modern Conditions.¹⁵⁷ As Godwin handed a copy to me in the year of its publication, he somewhat wistfully said that it should have the subtitle "From 1927 to 1985." The book's information cutoff date was mid-1985 and though Godwin was able to capture the reduction of military regions from 11 to 7, he was not able to include the million-man reduction and the effects it had on the PLA's force structure.

The delay between research and publication continues to haunt the field and often inhibits the layperson from obtaining adequate analysis of the implications of force structure and other changes in the PLA. As a result, many non-PLA specialists, who attempt to do detailed research on the PLA, get an out-of-date understanding of the Chinese military. The most recent example of this is Nan Li's article entitled "Organizational Changes of the PLA, 1985–1997," which appears in the June 1999 edition of *The China Quarterly*.¹⁵⁸ Though the article contains excellent data for the time frame defined, appearing as it does nearly two years after the announcement of the five hundred thousand-man reduction, Nan Li does not discuss the changes that have most recently occurred and are essential to understanding the current state of the PLA.

Government Studies

In November 1984, the Defense Intelligence Agency (DIA) published the *Handbook of the Chinese People's Liberation Army*.¹⁵⁹ It is detailed and comprehensive, but relatively unanalytical. It is useful for the facts, "just the facts," as they existed at that time. The *Handbook* devotes only a few sentences to the reductions of the early-1980s. Its organizational charts, which provide Tables of Organization and Equipment (TO&E), are for the same force structure Jencks had previously described. Although an update of the *Handbook* would be a valuable contribution given today's public interest and misunderstanding of the PLA, it is unlikely that the DIA will once again undertake such a task because of time, money, and personnel limitations.

¹⁵⁷Paul H. B. Godwin, *The Chinese Communist Armed Forces* (Maxwell Air Force Base, Ala.: Air University Press, 1988).

¹⁵⁸Nan Li, "Organizational Changes of the PLA, 1985–1997," *The China Quarterly*, No. 158 (June 1999), pp. 314–349.

¹⁵⁹United States Defense Intelligence Agency, *Handbook of the Chinese People's Liberation Army* (Government Printing Office: Washington, D.C.: 1984).

In 1988, the Library of Congress published *China: A Country Study*.¹⁶⁰ The chapter on national defense was written by Roxane D.V. Sismanidis with information up to 1987. Its 50 or so pages are a good example of what can be done in a general overview. Naturally, it draws on many of the specialist works examined in this chapter. Her study covers the million-man reduction, the decrease in military regions from 11 to 7, and the concept of People's War Under Modern Conditions. It does not mention the development of Local War doctrine, but does include a reference to the formation of group armies. The reduction to 24 group armies had not been completed and was not foreshadowed in the analysis. An update to this authoritative government work also would be useful.

The Library of Congress' Congressional Research Service has also provided an important contribution to the understanding of the Chinese military. Shirley Kan's series on Chinese missile forces has been one of the best sources of information on China's strategic forces and its cruise missile capabilities.¹⁶¹ Kan's works are highly respected by members of Congress and often used by others as source material.

In 1995, the General Accounting Office issued a study on the PLA entitled, *National Security: Impact of China's Military Modernization in the Pacific Region*.¹⁶² The study did not seem to receive too much attention, perhaps because, as noted by David Shambaugh in his introduction to *The China Quarterly's* June 1996 edition on "China's Military in Transition," it was considered to be too dismissive of China's military capabilities.¹⁶³ At the time of its publication and since then, anything perceived as understating the strength of the Chinese military has been a politically incorrect line of analysis.

The annual *Directory of PRC Military Personalities*, first produced in the mid-1980s by the U.S. Defense Liaison Office in Hong Kong and subsequently in the late-1990s by SEROLD Hawaii, Inc., has been an extremely useful and comprehensive series.¹⁶⁴ These books are an important source of biographic data on PLA leaders from the CMC down to division and, at times, the

¹⁶⁰United States Federal Research Division, Library of Congress, *China A Country Study* (Government Printing Office: Washington, D.C.: 1988).

¹⁶¹Shirley Kan, *China: Ballistic and Cruise Missiles* (Washington, D.C.: Congressional Research Service, 1998). Kan updates this report as developments occur.

¹⁶²United States General Accounting Office, *National Security: Impact of China's Military Modernization in the Pacific Region* (Washington, D.C.: U.S. Government Printing Office, 1995).

¹⁶³David Shambaugh, "China's Military in Transition, Politics, Professionalism, Procurement and Power Projection," *The China Quarterly*, No. 146 (June 1996), pp. 265–266.

¹⁶⁴USDLO Hong Kong, *Directory of PRC Military Personalities*, published annually through 1996 and then by SEROLD Hawaii Inc. from 1997 on.

regimental level. They also contain a wealth of order-of-battle and organizational data for analysts willing to spend the effort to examine them closely. For example, the series contains designations and locations for all group armies, many divisions, and some brigades or regiments.

Over the past three years, the Congress has tasked the Defense Department to answer specific questions or produce limited studies about the PLA. The unclassified responses have “answered the mail” and, indeed, have included useful information. However, probably because of sensitivity over releasing classified information, they have not been as comprehensive as possible. Nevertheless, any researcher attempting to understand the current status of the PLA should make the effort to consult them for an official U.S. government evaluation.

Specialized Works—General Reference

The International Institute for Strategic Studies in London produces the annual *Military Balance*. This is a standard reference for numbers and types of equipment and some organizational data. However, Harlan Jencks notes that the *Military Balance* tends to provide “high-side” counts and repeat what was reported the previous year unless a spectacular event or scholarly consensus forces it to change.¹⁶⁵

The series of Jane’s publications, consisting of its encyclopedic books on weapons systems and several periodicals, is another standard source for force structure and equipment developments. Many times individual facts, or rumors, are reported soon after they occur without much analysis. However, there is usually at least one major report per year that summarizes recent developments and provides a degree of analysis.

Several Western and Hong Kong newspapers have a good record on reporting on major PLA force structure changes and the introduction of equipment. Quality of reporting depends upon the journalists in the field and often varies as journalists rotate. Editorial staffs, however, often distort reports by the headlines they add or information they cut. Researchers must also be aware of editorial biases of some newspapers, which often affect the content of stories. Many newspapers sporadically provide a forum for academic and government analysts to provide some depth and context to routine reporting. However,

¹⁶⁵Harlan W. Jencks, “Wild Speculation on the Military Balance in the Taiwan Strait,” in James R. Lilley and Chuck Downs, eds., *Crisis in the Taiwan Strait* (Washington, D.C.: American Enterprise Institute and National Defense University Press, 1997), p. 139.

except for the few occasional opinion pieces, most scholarly work is found in books and journals with relatively limited distribution.

Before moving on to specific articles and books, it is appropriate here to mention the unparalleled work of retired U.S. Army Sergeant Ellis Melvin. In his retirement, Melvin has pursued the hobby of systematically reading many mainland Chinese-language newspapers. His understanding of the Chinese language and military organization has allowed him to compile detailed information on PLA force structure and operations that would otherwise be unavailable to the general public. Though he does not publish any of his work, Melvin graciously shares much of the fruits of his labor with several academic and government analysts, thus adding a special depth to their analysis. Melvin's quiet, behind-the-scenes efforts are highly regarded by specialists who are indebted to him for his untiring and unselfish contribution to PLA studies.

Since it deals with gross personnel numbers, a good starting point for specialized articles dealing with the PLA force structure is Yitzhak Shichor's "Demobilization: The Dialectics of PLA Troop Reductions."¹⁶⁶ Shichor walks the reader through the numerous expansions and contractions of the PLA's personnel strength from the 1950s to the mid-1990s. He notes the discrepancies in numbers reported to have been demobilized in the 1980s, stating "it is unclear whether the cut of one million military personnel announced in 1985 includes or excludes the more than half a million troops collectively demobilized since 1982" (p. 346). The half million demobilized after 1982 included the Railroad Construction Corps, the Capital Construction Corps, the Xinjiang Production and Construction Corps, and those units that became the first elements of the PAP. Interestingly, he claims that in 1994 and 1995, the PLA could have been much larger than the 3.2 million assessed at the time. Later, Shichor probably relies too much on "reports" that nearly all of the soldiers demobilized from 1986 to 1992 were transferred to the PAP. In fact, new PAP troopers are drawn from the same conscription pool that supplies the PLA. Based on a Hong Kong report, Shichor also predicts that by 1997 the PAP will number 1.8 million (p. 354). This figure appears to be too high even after the 1996 transfer of PLA units. (We will return to the problem of the PAP later.) Still, Shichor's work is useful for identifying the major periods of demobilization, even though, as he admits, the exact numbers are questionable.

¹⁶⁶Yitzhak Shichor, "Demobilization: The Dialectics of PLA Troop Reductions," *The China Quarterly*, No. 146 (June 1996), pp. 336-359.

Analysis of PLA Personnel and Party Systems

In the early-1980s, as China opened to the outside, more scholars and soldiers had increased direct access to PLA officers and increased, but limited, access to military units. This level of access added a new dimension to analysis that previously had been based primarily on academic research. For the time span currently under review, the U.S. military officer who set the standard for other military officers to follow in combining true academic excellence with on-the-ground experience is Monte Bullard.¹⁶⁷

Bullard's *China's Political-Military Evolution: The Party and the Military in the PRC, 1960–1984*, published in 1985, broke new ground in methodology and content.¹⁶⁸ Bullard used personal interviews with members of the PLA during his attaché duty in China and Hong Kong to build on his superb scholarly research. His main theme is the rise and fall of the interlocking directorates, which linked the PLA to all levels of government in China before, during, and after the Cultural Revolution. One section of the book describes the PLA of the early-1980s, in the midst of the reforms which removed the Railroad Construction Corps and the Capital Construction Corps from military control. Another section provides an in-depth description of the political commissar system. Some researchers without a military background may find Bullard's work difficult because he assumes the reader is familiar with the basic military organizations of the PLA.

During his discussion of demobilization, Bullard provides details about a category of active duty PLA personnel called advisors. In *From Muskets to Missiles*, Jencks also mentioned advisors and described the "delicate handling of older cadre" who have been relieved of their duties because of "advanced age or ill health" (p. 231). Jencks did not specifically identify them as active duty personnel, but said they could be found "as low as regimental level." Bullard specified their active duty status and added a few more details, along with one bit of data that conflicts with Jencks:

The advisor category is not considered a form of retirement by the Chinese. Cadre who become advisors are considered active duty personnel and receive pay and privileges accordingly. They are kept on to provide their experience to the PLA. Advisors are

¹⁶⁷U.S. Air Force Colonel Richard Latham performed a similar function with regard to Chinese defense industries.

¹⁶⁸Monte Bullard, *China's Political-Military Evolution: The Party and the Military in the PRC, 1960–1984* (Boulder: Westview Press: 1985).

assigned to military related institutes or schools rather than the field forces. There are some located at senior headquarters (military district and military region), but none are assigned to the regular field forces. (p. 34)

With the restoration of ranks in 1988, many of the personnel in the advisor category appear to have evolved into the *wenzhi ganbu* that exist today. *Wenzhi ganbu* are active duty PLA civilians who perform specialist and technical functions as Bullard describes. In addition to schools and headquarters, they also are prevalent in hospitals and medical units. They are roughly the equivalent of U.S. Department of Defense civilians; however, U.S. civilians working for the military *are not* considered active duty personnel and are therefore not included in active duty personnel strength statistics. China's 1998 White Paper on National Defense officially acknowledged the status of *wenzhi ganbu* for the first time and noted they were indeed considered active duty personnel, unlike in other armies.¹⁶⁹ The White Paper did not give numbers or percentages of *wenzhi ganbu* in the force. However, according to PLA sources, they could comprise 20 to 25 percent of the PLA's active duty strength.¹⁷⁰ (U.S. civilians working for the military would add another 50 percent to personnel strength if counted using Chinese methodology.)

For the bean counters, the importance of the status of *wenzhi ganbu* to force structure is that the PLA could actually be considered significantly smaller than their strength figures imply. Though a few other writers have mentioned the category of PLA civilians, the implication of them being considered active duty personnel has rarely, if ever, been considered. This discrepancy in accounting makes the PLA appear to be larger than it actually is compared to other militaries. (China may consider this ambiguity as acting in its favor because of the deterrent value of a large military and therefore is hesitant to release actual numbers of *wenzhi ganbu*.)

Michael Swaine's 1992 *The Military & Political Succession in China* is another specialized book-length work that combines superb scholarship with extensive personal interviews.¹⁷¹ Swaine focuses on personalities and factions to update William W. Whitson's 1973 *The Chinese High Command*. In doing so, Swaine provides a detailed analysis of the PLA command and control structure that evolved after the million-man reduction of the mid-1980s. His chart of "Chinese Military Regions, Districts, and Headquarters of Group Armies" is one

¹⁶⁹Information Office of the State Council of the People's Republic of China, *China's National Defense*, July 1998.

¹⁷⁰Conversation with the author and PLA civilian, September 1996.

¹⁷¹Michael Swaine, *The Military & Political Succession in China* (Santa Monica: RAND, 1992).

of the most useful illustrations of Chinese force structure in the existing literature (p. 252) (though the headquarters of several group armies have been eliminated or relocated since its publication). Other sources, such as the *Directory of PRC Military Personalities*, contain the same information, but not in such an accessible, easy-to-use format.

The details of the command and control relationships in PLA forces could not have been derived in such depth but for Swaine's access to PLA officers (pp. 78–152). The author also examined the relationship of the PAP to the PLA, a question of increased importance as the PAP underwent major changes in the aftermath of Tiananmen (pp. 85–86 and 127–133). Swaine foreshadowed the growing problem of military enterprises that would eventually lead to the 1998 decision for the PLA to divest itself of its commercial entities: “this separation of the military system from the Party-state apparatus has led to an increase in competitive (rather than cooperative) economic behavior on the local level” (p. 149).

Swaine used the reporting of the *Far Eastern Economic Review's* Tai Ming Cheung as a basis for some of his analysis. In the late-1980s and early- to mid-1990s, Cheung made significant contributions to the West's understanding of the PLA, military enterprises, and the PAP in an important body of work published by the *Review* and by his contributions to scholarly journals and academic conferences. Cheung's insights, too, relied heavily on access to Chinese military personnel and a detailed reading of military and PAP publications.

PLA Air Force

Ken Allen's specialized work on the PLA Air Force (PLAAF) epitomizes the kind of analysis that can result from an examination of force structure in its most minute detail. Allen's 1991 *People's Republic of China People's Liberation Army Air Force*, published by the DIA,¹⁷² and his 1995 collaboration with Jonathan Pollack and Glenn Krumel, *China's Air Force Enters the 21st Century*,¹⁷³ set new standards for the analysis of force structure and implications for military modernization. Allen's 1991 work provides many of the facts which form the basis for the 1995 analysis. Allen combined a detailed examination of Chinese publications with personal interviews and real-world military experience to

¹⁷²Kenneth W. Allen, *People's Republic of China People's Liberation Army Air Force* (Washington, D.C.: Defense Intelligence Agency, 1991).

¹⁷³Kenneth W. Allen, Jonathan Pollack, and Glenn Krumel, *China's Air Force Enters the 21st Century* (Santa Monica: RAND, 1995).

produce a book that many *Chinese* use as a reference to learn about their own air force.

Allen discusses every aspect of the PLAAF in exquisite detail. His use of charts to show changes and trends in aircraft inventory is both innovative and informative. The decline in absolute numbers of aircraft in the coming years is striking and often overlooked by other writers as a few newer aircraft enter the force. Allen describes the long time span between design, prototype, and production that limits the amount and sophistication of domestically produced aircraft entering the PLAAF inventory. He dutifully recounts the numerous reports of foreign acquisitions, but properly questions the credibility of the sources (pp. 156–161). Allen’s skepticism of “reports” of foreign acquisition finds company with the analysis of Bates Gill, Taeho Kim, John Frankenstein, Paul Godwin, and others. *China’s Air Force Enters the 21st Century* predicts a much smaller, but more technologically advanced PLAAF that lags considerably behind modern air forces well into the twenty-first century.

China’s Air Force Enters the 21st Century is updated in Allen’s “PLAAF Modernization: An Assessment,” found in *Crisis in the Taiwan Strait*, which provides an assessment of the Su-27 activity during the March 1996 exercises.¹⁷⁴ Also of interest are his estimates (Table 2 on page 244), which project aircraft production out to 2010. Allen’s estimates demonstrate the problems in predicting Chinese defense industry production rates. Writing in 1996, Allen forecast the production of ten Su-27s in 1998. The actual number of Su-27 aircraft assembled from kits in 1998 was two. This is but one example that shows many predictions of production rates and “reports” of arms sales eventually come true, but often at a significantly slower pace and at a later date than originally foreseen.

PLA Navy

Over the past 20 years, two of the earliest books that specialized in one aspect of the PLA focused on the navy: David G. Muller’s *China as a Maritime Power* and Bruce Swanson’s *Eighth Voyage of the Dragon*. Later writers frequently referred to both these works. However, because of doctrinal and force structure changes over the past two decades these works are now most useful for their historical perspectives.

¹⁷⁴Kenneth W. Allen, “PLAAF Modernization: An Assessment,” in James R. Lilley and Chuck Downs, eds., *Crisis in the Taiwan Strait* (Washington, D.C.: American Enterprise Institute and National Defense University Press, 1997), pp. 217–247.

Since the mid-1990s, Eric McVadon, a former U.S. defense and naval attaché to China, has produced several excellent articles on the PLA. His “PRC Exercises, Doctrine and Tactics Toward Taiwan: The Naval Dimension” uses force structure, along with training and doctrine, to analyze several scenarios for the use of force against Taiwan.¹⁷⁵ He notes that the PLA Navy has not “undertaken a major building program to provide the capability to invade a well-defended Taiwan” (p. 252). Rather, the PLA’s acquisition of M-9 missiles, SA-10 surface-to-air missiles, and Su-27 fighters “confirms the PLA wants to be able to terrorize Taiwan and keep Taiwan’s forces from being able to strike China” (p. 256). His comparison of selected PLA and Taiwan naval forces (Table B) makes an important distinction that most bean counts do not: McVadon distinguishes between “front-line, capable, and obsolescent” ships and craft (p. 258). These distinctions put a different perspective on balances that compare only gross numbers. Few journalists and other writers are as qualified as McVadon, who has seen the forces on both sides of the Strait, to make such distinctions. (McVadon’s assistant while in Beijing, John Caldwell, has also used his extensive experience in the U.S. Marine Corps to assess PLA capabilities. See Caldwell’s “China’s Conventional Military Capabilities, 1994–2000: An Assessment.”¹⁷⁶)

In March 1996, Christopher D. Yung, an analyst at the Center for Naval Analyses, examined whether, by 2010, China could build, buy, or reverse engineer a modern, regional navy.¹⁷⁷ Yung concluded that:

- China cannot build a regional navy by 2010 without foreign participation or assistance because of shortfalls in the Chinese defense industries (p. 27);
- China can buy the *inventory* for a regional navy by 2010 if economic conditions permit, but the Chinese leadership is *not* likely to purchase a regional capability directly because it would be inconsistent with the history of modern Chinese defense development and require that China become dependent on other countries for its force requirements (p. 36); and
- China’s most likely course is the process of reverse engineering a modern military, but it is impractical for China to reverse engineer a

¹⁷⁵Eric McVadon, “PRC Exercises, Doctrine and Tactics Toward Taiwan: The Naval Dimension,” in James R. Lilley and Chuck Downs, eds., *Crisis in the Taiwan Strait* (Washington, D.C.: American Enterprise Institute and National Defense University Press, 1997), pp. 249–276.

¹⁷⁶John Caldwell, *China’s Conventional Military Capabilities, 1994–2000: An Assessment* (Washington, D.C.: Center for Strategic and International Studies, 1994).

¹⁷⁷Christopher D. Yung, *People’s War at Sea: Chinese Naval Power in the Twenty-First Century* (Alexandria, Va.: Center for Naval Analyses, 1996).

regional navy by 2010. The Chinese defense industry takes an average of 15 years to reverse engineer imported weapons; therefore, the goal of reverse engineering a regional navy *by 2020* is achievable and suits Chinese foreign policy purposes. (p. 51)

Yung outlines the following U.S. policy-related implications:

- Military and policy planning that assumes China's navy will dominate the region or represent a threat to U.S. forces in the Asia-Pacific region is premature.
- Defense planning projections that account for a regionally oriented Chinese navy by about 2020 are probably more accurate.
- Hedging for a future Chinese regional navy may be a good long-term insurance, but sizing today's forces for an up-and-coming Chinese naval threat by 2010 would be premature.
- Under the most pessimistic planning scenario, which includes high Chinese economic growth and a willingness to purchase a regional naval capability from other countries, by 2010 China might be able to back up its strategic objectives in the Asia-Pacific region with significant military force. (pp. 52–53)

Yung includes several tables that posit various inventories of ships according to the scenarios he examines. A useful subject for future studies of the Chinese navy and air force would be an examination of the numbers and types of equipment that would be necessary for specific scenarios. For example:

- How many and what type of destroyers, frigates, submarines, support ships, and so forth, would be required to blockade a port in Taiwan for a month;
- How many and what type of destroyers, frigates, amphibious vessels, submarines, support ships, and so forth, would be required to assault an island in the Spratly group; and
- How many and what type of aircraft, fighters, bombers, aerial refuelers, command and control aircraft, electronic warfare aircraft, and so forth, would be required to provide adequate air cover to these operations.

Studies of this sort would be useful to help estimate potential capabilities as new equipment enters the PLA. However, it also will be necessary to determine which units receive the new equipment, do they have the infrastructure to maintain them, and whether the crews receive adequate training to operate the new equipment to its design potential. The answers to these questions require

more information than is normally available to most researchers. However, this kind of information is necessary to make assessments that go beyond mere “bean counting.”

Strategic and Missile Forces

Chinese nuclear capabilities are among Beijing’s most highly guarded secrets. Little verifiable, detailed information is publicly available. However, there are a few sources of data on Chinese strategic missile and nuclear forces. Basic information on force structure can be found in:

- *Nuclear Weapons Databook Volume V, British, French, and Chinese Nuclear Weapons*, by Robert S. Norris, Andrew S. Burrows, and Richard W. Fieldhouse, a book by the Natural Resources Defense Council, 1994, which includes detailed descriptions of the development of the nuclear weapons program and individual strategic missiles;
- *Taking Stock of Worldwide Nuclear Developments 1998*, by William S. Norris, Robert S. Norris, and Joshua Handler, Natural Resources Defense Council, 1998, which provides detailed information about location and types of Chinese strategic forces (p. 89);
- Several Congressional Research Service (CRS) Issue Briefs on Chinese missile and nuclear forces by Robert Sutter and Shirley Kan; and
- The numerous works of John W. Lewis and his collaborators, Xue Litai and Hua Di.

Over the past 20 years, Bonnie Glaser, Banning Garrett, Harlan Jencks, Chongpin Lin, and Alastair Iain Johnston have all added the results of personal interviews to the analysis of basic data to forecast trends in the Chinese nuclear force. The latest entrant to this field is Ming Zhang, whose *China’s Changing Nuclear Posture* was published by the Carnegie Endowment for International Peace in 1999.¹⁷⁸ Unlike most other analysts who credit China with a “minimal deterrent” force, Zhang attributes the Chinese nuclear force with the ability to provide “limited nuclear deterrence,” which he defines as “sufficient forces to launch a retaliatory strike after an adversary’s nuclear attack” (pp. 5–6). This definition is closer to that of “minimal deterrence” than “limited deterrence,” which requires a degree of warfighting capability directed at the enemy’s strategic nuclear forces.

¹⁷⁸Ming Zhang, *China’s Changing Nuclear Posture* (Washington, D.C.: Carnegie Endowment for International Peace, 1999).

There has been considerable discussion about whether China's strategic arsenal provides "minimal deterrence" or "limited deterrence." Iain Johnston's "Prospects for Chinese Nuclear Force Modernization: Limited Deterrence Versus Multilateral Arms Control" and "China's New 'Old Thinking'" provide a convincing argument that some Chinese strategists believe a limited deterrence doctrine, which would require a larger mix of more accurate and modern missiles, might better serve China's operational and security interests than existing force levels.¹⁷⁹ According to Johnston, China has the capacity to increase the size of its strategic force by two to three times, but *no decision to do so* has yet been made by the senior Chinese political and military leadership. In 1996, Johnston warned that American plans for theater missile defense (TMD) deployment and a ballistic missile defense (BMD) system may have "counterproductive unintended consequences" by encouraging the ascent of proponents of limited deterrence in the PLA (*The China Quarterly*, p. 574). This insight into the potential growth of Chinese strategic systems continues to deserve close attention as the United States plans the manner in which it develops and eventually deploys missile defense systems.

The most detailed strategic order-of-battle data for the Chinese missile forces can be found in a few pages of Mark Stokes' much larger study entitled "China's Strategic Modernization: Implications for U.S. National Security."¹⁸⁰ Stokes provides organizational information for the Second Artillery's 6 bases and 13 brigades, as well as unit designations, locations, types of missiles, and potential targets (pp. 59–61). The majority of his study focuses on the civilian aerospace and electronics industries' organizations, research and development efforts, and strategic modernization projects. It also contains an extensive list of aerospace and electronics industries, factories, and research institutes.¹⁸¹ Stokes' work provides an essential foundation to assess China's endeavors to achieve a Revolution in Military Affairs.

Forecasting on the growth of China's strategic forces has been problematic over the past two decades. Both academic and government analysts have usually overestimated the growth rate of the Chinese missile force. George Washington

¹⁷⁹Alastair Iain Johnston, "Prospects for Chinese Nuclear Force Modernization: Limited Deterrence Versus Multilateral Arms Control," *The China Quarterly*, No. 146 (June 1996), pp. 548–576, and "China's New 'Old Thinking': The Concept of Limited Deterrence," *International Security*, Vol. 20, No. 3 (Winter 1995/1996), pp. 5–42.

¹⁸⁰Mark A. Stokes, *China's Strategic Modernization: Implications for U.S. National Security*, draft FY 97 research project under the auspices of the USAF Institute for National Security Studies, October 1997 (revised July 1998).

¹⁸¹Some organizational changes to the aerospace and electronics industries have occurred since Stokes' revision in the course of yet another reorganization of the Chinese civilian defense industries.

University's National Security Archive has posted on the worldwide web a previously classified DIA "Estimative Brief" from April 1984 that provides a forecast of the growth of the Chinese missile force as foreseen at that time.¹⁸² Listed below are the DIA estimates for 1994 (ten years after the date of the original document), as well as the number of missiles deployed in 1998 as reported by the CRS:

Missile	Type	DIA Estimate for 1994	CRS 1998 Report ¹⁸³
CSS-2 (DF-3A)	MRBM	120 ¹⁸⁴	40+
CSS-3 (DF-4)	ICBM	32	10–25
CSS-4 (DF-5A)	ICBM	16	20
SLBM (JL-1)		48	12
Solid ICBM		2	None
MR/IRBM Follow-on (assumed to be the CSS-5/DF-21)		28	10
SRBM		12 ¹⁸⁵	Approximately 120 ¹⁸⁶
Follow-on systems (unspecified)		30	None

In all but two cases, the number of missiles actually deployed is significantly lower four years *after* the date estimated by the DIA. Military planners often make worst-case assumptions in order to guarantee a margin of safety for their own forces, but it would appear that overestimation of Chinese production capacity is a common occurrence among many government and non-government analysts. For example, in the 1980s, there were several predictions that the Chinese ballistic missile fleet would expand to anywhere from four to ten boats. Obviously, these predictions have not come true as the single *Xia* remains tied up in port, rarely going to sea.

This is not to say, however, that the Chinese have not enjoyed any numerical gains in their missile industry. Over the past decade, there has been a *gradual* increase in the size of the strategic missile force and a *significant* increase in the number of short-range ballistic missiles. Newer missiles and warheads are more technologically advanced, as should be expected in any modernization

¹⁸²Defense Intelligence Agency, Defense Estimative Brief, "Nuclear Weapons Systems in China," 24 April 1984, declassified and found at <http://www.seas.gwu.edu/nsarchive/news/19990527/01-01.htm>. This one estimate should not be considered *the* single authoritative estimate of China's nuclear forces. Other elements of the government made similar estimates, which may or may not have agreed with the DIA's analysis.

¹⁸³Kan, *China: Ballistic and Cruise Missiles*, p. CRS-3.

¹⁸⁴The sale of approximately 36 CSS-2 missiles to Saudi Arabia in 1984 could not be foreseen at the time of this estimate. However, even subtracting the number sold to the Saudis, the DIA's estimate was still about twice as big as the actual number of missiles deployed in 1998.

¹⁸⁵These 12 missiles were assessed to be armed with nuclear warheads.

¹⁸⁶Taiwan Defense Minister Tang Fei provided this number. All SRBMs deployed by China currently are assessed to be armed with conventional warheads, but *capable* of being fitted with a nuclear warhead.

program. While the remainder of the PLA is getting smaller but qualitatively better, missile forces appear to be getting larger *and* qualitatively better. However, as Ken Allen reminds us, any significant increase in the number of deployed strategic missiles will require a commensurate growth in the force structure. Expansion of the force structure, which will entail building new facilities and training additional personnel on new systems, probably will be detectable long before new missiles are actually deployed.

Richard Fisher of the Heritage Foundation has been monitoring the growth and improvement of Chinese missiles as well as purchases of foreign equipment for much of the 1990s. In a series of articles, Fisher has compiled an extremely comprehensive list of reported foreign equipment acquisitions and other equipment developments.¹⁸⁷ His lists are meticulous in capturing the state of negotiations, that is, rumored or reported, ongoing, completed, or equipment delivered, for many systems from many countries, but primarily from Russia. As a reference they can be invaluable for their thoroughness. Fisher tends, however, in his analysis to project that “if” a transfer or weapons upgrade occurs, then something “could” or “would” result, which usually ends up in a worst-case scenario. With the number of deals allegedly in motion, indeed if they all were completed, a different PLA than the one currently in existence would result, also at a much higher rate of military spending. However, experience has proven that only a small proportion of the reported Chinese deals with foreign sources actually come to fruition, and, to date, in numbers that have not appreciably altered the military balance in the region. Nevertheless, Fisher reminds us that vigilance in monitoring these developments is essential. Trends of the past could be broken should Beijing perceive a major change in its strategic environment and a greater near-term threat to Chinese security.

Shorter Articles and Chapters in Books

Wortzel also described the Chinese National Defense University’s Pan Zhenqiang’s “anthill” theory of Chinese defense doctrine—leave the anthill alone and there is no problem, but kick it and millions of ants of the PLA will come spilling out (p. 158). He concludes that the anthill theory applies “when judging the PLA’s capabilities over short distances,” such as against its immediate land neighbors and Taiwan (p. 173). This image is appealing to non-China specialists because it fits many preconceived notions about China’s size

¹⁸⁷For example, see the Appendix for “How America’s Friends Are Building China’s Military Power,” *The Heritage Foundation Backgrounder*, 5 November 1997.

and threat potential. Later, another China specialist will offer another animal analogy that presents a completely different image of the PLA.

Fortunately, in the same volume as the Taylor and Kim article is Paul Godwin's "China's Security Policy Enters the 21st Century: The View from Beijing," in which Godwin discriminates between actual sales and "reports" of sales.¹⁸⁸ Godwin goes on to describe other developments in weapons acquisition and concludes that "these slowly emerging capabilities have been observed in the context of what is seen as assertive, if not aggressive, policies toward all issues involving Chinese sovereignty" (pp. 49–52).

Early on he emphasizes the subordination of military modernization to national economic development and says that Beijing's strategy "is to buy time for increasing China's military potential, which is slowly improving its capacity to be a stronger military power" (p. 4).

Because the PLA has been, and is expected to remain, under-resourced, the impact on force structure can be seen in it:

- Compensating for lack of funding by working to develop "the capability to control sea lines of communication, project regional force, and deter the United States and other potential adversaries in creative ways without matching forces" (p. 7).
- "Putting together smaller building blocks of forces, perhaps of brigade instead of division size, that are fully trained. Instead of seeing fully digitized divisions...the PLA may build up smaller units of highly educated soldiers and officers to support main force armies.... But every Group Army may not need such a capability" (p. 12).
- Not having "a naval construction effort underway that would give China the potential to decisively project sea power" (p. 16).

Appropriately, Wortzel also concludes that "notwithstanding all of the obstacles China faces, China's military potential bears watching" (p. 22).

There appears to be a definite change in tone between Wortzel's two articles. The first was written three to four years after his first tour in China as an army attaché from 1988-1990, while the second was written only one year after his second tour in Beijing from 1995-1997. His conclusions following more recent exposure

¹⁸⁸Paul H. B. Godwin, "China's Security Policy Enters the 21st Century: The View from Beijing," in Dianne L. Smith, ed., *Asian Security to the Year 2000* (Carlisle Barracks, Pa.: U.S. Army War College Strategic Studies Institute/Center for Strategic and International Studies, 1996), pp. 37–64.

exposure to the PLA seem to have moderated from previous years. In the later article, Wortzel puts more emphasis on the long-term nature of PLA modernization, whereas non-China specialists are more prone to accelerate the perceived pace to better fit their own needs. Often, the farther away from China an observer is (or with less current first-hand knowledge), the more formidable the PLA seems. Unless, as Wortzel reminded me during a conversation about his articles, they are trampling over you (i.e., the “ant hill” analogy from his 1994 *Orbis* article).

In a brief aside, Wortzel mentions the PAP’s strength to be 800,000. The size of the PAP remains an unanswered question, especially now as it is being enlarged by the transfer of entire PLA units. An examination of the locations of the 14 divisions recently transferred from the PLA to the PAP, as listed the 1998 volume of the *Directory of PRC Military Personalities*, indicates four are located within approximately a day’s drive of Beijing and three within a day’s drive of Shanghai. The others are found in border areas (Xinjiang and Yunnan) and near population centers in the interior. The concentration of new PAP units near China’s most important cities, large urban areas, and border regions supports Wortzel’s observation “When the Chinese military and civilian leaders say that their priority is economic growth and stability, they mean it” (p. 6).

With regard to domestic stability, over the years, Tai Ming Cheung has created a comprehensive body of work on the PAP that provides excellent detail about its structure. See, for example, “The People’s Armed Police: First Line of Defense,” in the *China Quarterly*.¹⁸⁹ Hong Kong’s China News Analysis, “The People’s Armed Police,”¹⁹⁰ also provides basic organizational data, which, like Cheung’s work, is based on analysis of mainland sources. James Mulvenon’s “The Sword and the Shield: Military Control of the People’s Armed Police, 1995-1997” is very useful in its examination of the PAP’s command relationship with the Central Military Commission, PLA General Staff Department, and Ministry of Public Security.¹⁹¹

Alfred D. Wilhelm, Jr. is another former U.S. military attaché who combines scholarship with operational experience and an intimate personal knowledge of the PLA. For two decades he has explained the implications and predicted trends in the PLA’s force structure and doctrine. His chapter in *China Policy*

¹⁸⁹Tai Ming Cheung, “The People’s Armed Police: First Line of Defense,” in *China Quarterly*, No. 146 (June 1996), pp. 525-547.

¹⁹⁰China News Analysis, “The People’s Armed Police,” (Hong Kong), April 1, 1993.

¹⁹¹James Mulvenon, “The Sword and the Shield: Military Control of the People’s Armed Police, 1995-1997,” a paper presented at the National Association of Asian Studies Conference, Chicago, IL, March 13-17, 1997.

For the Next Decade, Report of the Atlantic Council's Committee on China Policy, published in 1984,¹⁹² outlined several trends that apply even to the present:

- “Becoming more professional means the PLA becomes more oriented to the external threat.” (This trend suffered a major setback in 1989, but has since been resumed.) “It means a greater emphasis on modern weapons, technology, and military training in addition to more discipline, improvements in command and control and a decrease in political training and non-military duties” (p. 191). (Wilhelm acknowledges, however, that as part of the PLA’s role in society, it and the PAP are required to undertake emergency relief efforts for natural disasters such as floods and earthquakes. These efforts have helped restore some its reputation with the Chinese people damaged in 1989. Emergency functions of the PLA also provide a rationale for maintaining a fairly large standing force, though active duty forces can be augmented by reserves and militia for these requirements.)
- “People’ War, as a concept, is not dependent of a specific level of technology, thus it can and will be adjusted to make maximum use of modern weapons” (p. 206).
- “The development and deployment of nuclear-capable artillery is the least likely approach [in the development tactical nuclear weapons] because of R&D costs, structural inadequacy of current PLA artillery, and, more importantly, the command, control, and doctrinal changes required” (p. 212). (There has been no indication of the development of nuclear artillery rounds to date.)
- “Over the next decade, China will avoid bulk procurement.... China will avoid the development of complete new systems if it can upgrade existing systems to an acceptable level of performance through incremental modification...” (p. 214).

Eleven years later in October 1995, Wilhelm testified before the Senate Committee on Foreign Relations Subcommittee on East Asian and Pacific Affairs.¹⁹³ In his opening paragraph, he alluded to the ant hill analogy, “On a bilateral basis under optimum circumstances, China can orchestrate a limited

¹⁹²Alfred D. Wilhelm, Jr., “National Security—The Chinese Perspective,” in *China Policy For The Next Decade*, Report of the Atlantic Council’s Committee on China Policy (Boston: Oelgeschlager, Gunn & Hain, 1984), pp. 181-219.

¹⁹³“The Growth and Role of the Chinese Military,” Hearing before the Subcommittee on East Asian and Pacific Affairs of the Committee on Foreign Relations United States Senate One Hundred Fourth Congress First Session, October 11 and 12, 1995, S. HRG. 104-330 (Washington D.C.: U.S. Government Printing Office, 1996), pp. 51-63.

preponderance of power against any of its neighbors, but with U.S. support none need feel threatened” (p. 54). (Note the qualifiers, “On a bilateral basis” and “under optimum circumstances,” that preface that statement.) He stressed the long-term nature of Chinese military modernization, and concluded:

....by the middle of the 21st century, China will be a major power with a military capable of challenging the United States. Whether it will or not depends on whether the West approaches China as an enemy or as a responsible member of the international community... (p. 54-55).

Three years before Jiang Zemin gave the order to do so, Wilhelm predicted “by 2010, the PLA should have divested itself of the majority of its enterprises” (p. 56). His prediction that China is “unlikely to indigenously design and begin construction of a bluewater carrier (60,000 tons) with an Initial Operation Capability much before 2020” (p. 59) appears to be accurate today. However, immediately following he said, “It will however, probably invest in two or three indigenously designed pocket carriers,” of which there is no sign as yet. He also predicted by 2010:

- A reduction of manpower to two million;
- A reduction of Group Armies to about 16;
- A reduction of units forward deployed along China’s borders;
- Development of a limited number of precision guided munitions;
- The conversion of selected strategic missile units to MIRV systems (p. 62).

Perhaps the most memorable image Wilhelm described was that of the PLA as a “puffer fish.” China’s national security policy is to conceal “one’s actual capability in such a way that estimates by outsiders make you appear larger than life...” (p. 59). Notwithstanding the publication of its White Paper on National Defense in 1998, Beijing’s unwillingness to provide any degree of tactical transparency enhances its puffer fish image. With its tradition of deception, the PLA leadership must be quietly pleased when many foreign writers credit the PLA with capabilities it still has not achieved, thus contributing to the illusion of the puffer fish.

A Brief Comment on the RMA

In 1997, the publication of Michael Pillsbury's *Chinese Views of Future Warfare* caused quite a stir.¹⁹⁴ The book is a rare chance for the public to read recent Chinese military literature without the filter of a foreign commentator. It consists of 40 articles provided to Pillsbury by the Chinese Academy of Military Science, which he groups into four parts on: The Strategic Thought of Deng Xiaoping, Future Security Trends, Modernizing for Local War, and The Revolution on Military Affairs. Soon after its publication, several commentators and journalists used excerpts from the volume to highlight the PLA's interest in modern technologies that could lead to advances in the 21st century.

In fact, there are very few examples in the book of what China is actually doing with regard to future force structures, weapons systems, and doctrines. Rather, in addition to discussing China's defense policies since 1985, the majority of the articles that refer to future warfare explain developments in foreign militaries, especially the United States, and the conduct of recent wars, with primary emphasis on the 1991 Persian Gulf War. In effect, the majority of articles in the book are aimed at educating a Chinese audience about the complexities of modern warfare and to familiarize them with many of the technologies already in use on other militaries.

The book is nevertheless an important contribution to the foreign appreciation of Chinese military thought. Though there are a few very general descriptions of trends in Chinese military development, the themes found most often throughout the articles include:

- China is a developing country with the primary central task of economic development.
- Military modernization is subordinate to the overall goal of national economic construction.
- Continued economic development depends on the maintenance of peace and stability, both regional and domestic.
- China must be prepared for its most likely threat—a limited conflict along its borders.
- Because of the requirement to put national economic development first, the purchase of modern high-technology equipment from foreign

¹⁹⁴Michael Pillsbury, ed., *Chinese Views of Future Warfare* (Washington D.C.: National Defense University Press, 1997). For comments on the book, see William C. Triplett II, "Bidding welcome to officers of the PLA," *The Washington Times*, July 10, 1997, and "Chinese Covet High-Technology Arsenal," *Defense News*, May 19-25, 1997.

sources and funding for the military will be limited. If economic modernization is successful, sometime in the future the country may be able to afford to divert a greater proportion of national wealth to the military.

- For the foreseeable future, the Chinese armed forces must devise ways to defeat a superior enemy using its existing equipment. At the same time, it will study modern warfare and prepare its forces for the 21st century by becoming smaller in size and increasing its technological quality.

Given the hype that surrounded the book's publication, these are not themes that were greatly expected. To Pillsbury's volume, the U.S. Army War College Strategic Studies Institute held on Conferences on "China into the 21st Century: Strategic Partner and... or Peer Competitor." At the conference, Bates Gill discussed the economic and socio-cultural factors "which affect China's capacity for change, innovation, and adaptability particularly in areas of activity critical to grasping the current RMA.." ¹⁹⁵ Gill concludes China is not within reach of "the emergent RMA" within the next 5-10 years (p. 35). However:

- "It is possible that the concentrated effort of China's greatest resource, its people, could result once again in significant advances within the current RMA.. This may be more difficult than in previous efforts, but with the availability of technology and expertise increasingly available from outside sources, China could succeed in developing and deploying an "RMA with Chinese characteristics": perhaps less sophisticated, but sufficient for Chinese needs." (p. 34)
- "The Chinese effort to master "high-tech warfare with Chinese characteristics" may be slow but its potential threat cannot be entirely dismissed." (p. 35)

At the same conference, U.S. Army Lieutenant Colonel Lonnie Henley also addressed the issue of "China's Capacity for Achieving a Revolution in Military Affairs." ¹⁹⁶ Henley noted that since the 1980s, "the PLA has been focused on the organizational, doctrinal, and human aspects of military modernization, waiting in the meanwhile for Chinese defense industries to catch up with their Western counterparts and begin producing advanced systems at a price China

¹⁹⁵Bates Gill, "China and the Revolution in Military Affairs: Assessing Economic and Socio-Cultural Factors," in *China and the Revolution in Military Affairs* (Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, 1996), pp. 1-42.

¹⁹⁶Lonnie Henley, "China's Capacity for Achieving a Revolution in Military Affairs," in *China and the Revolution in Military Affairs* (Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, 1996), pp. 43-57.

can afford” (p. 46). He echoes the insights Harlan Jencks made in 1982 when he states, “It seems clear that Beijing does not intend to refit the entire PLA with modern weapons and equipment. The majority of the PLA's 100-plus ground force divisions will remain low- to medium-tech forces... A much smaller number, perhaps 12-18 divisions, are striving to become modernized, mobile forces....” (p. 47-48)

Henley warns that it is not likely that China will duplicate the American high technology and information-based breakthroughs of the 1980s and 1990s for another decade or longer, but “it is possible they will make significant breakthroughs in some other direction entirely” (p. 54).. Henley concludes:

On its current course, the PLA will achieve significant improvements in its ability to execute large-scale joint operations in defense of the Chinese homeland, and, to a lesser extent, in its ability to project force against Taiwan or into the Spratly Islands. Over the next two decades, it may even achieve the capabilities comparable to that of the U.S. armed forces in the 1990s. It is unlikely, however, the China will achieve a revolution in military affairs for at least the next quarter century.” (pp. 56-57)

There is no debate that the PLA is moving forward with its military modernization and improvement of its capabilities, the question of pace is the issue. Should Henley’s assessment come true, the PLA will become a more viable and dangerous regional force within the next 15-20 years, a somewhat slower pace than those who predict acquisition of significantly improved capabilities by 2005 or 2010.

Current Developments

As announced by Jiang Zemin in September 1997, the PLA currently is in the midst of a five hundred thousand-man reduction. Large numbers of obsolete equipment, such as fighters and submarines, are being retired from service and not replaced. Three group army headquarters have been eliminated and more may follow. Most of the remaining group armies have lost a division from their structure as entire divisions are disbanded or transferred to the PAP. Many divisions are being down-sized to brigades. Some units whose higher headquarters have been disbanded will be transferred to the control of other headquarters. The elimination of intermediate and redundant headquarters, in theory, should decrease the time it takes to make decisions and issue orders.

Reaction times may be improved if units are able to consolidate subordinate elements closer together for more rapid assembly and deployment than was possible when they were larger and scattered over a wider area. Co-location of subordinate elements of different service arms may also provide the opportunity for more frequent combined arms training by making it more convenient and affordable. (Previously, the subordinate regiments of many ground force divisions were widely separated in order to protect them from nuclear attack. Tanks and most artillery and engineer assets were found at division level and often located at a distance from the division's three infantry regiments. Therefore, combined arms training among the various elements in many divisions was not conducted as frequently as necessary for proficiency.) The structural and location changes that are under way will require contingency plans for the entire force to change to reflect current realities.

In early-1999, the terms of service for conscripts were cut from three years (for the army) or four years (for the navy and air force) to two years for all services. By shortening enlistment times, Beijing hopes to attract higher-quality soldiers and to increase the proportion of non-commissioned officers (NCOs) to conscripts by making voluntary extensions more attractive.

However, shortening the enlistment period will have consequences for PLA training, personnel management, and unit integrity. Tactical units will be forced to radically adjust their personnel and training systems to cope with greater personnel turnover and turmoil every year. These types of changes put additional stress on small unit leaders. New soldiers, sailors, and airmen will have to learn basic soldier skills quicker than in the past. This will be increasingly difficult as more advanced technology is introduced into the force.

As enlisted troops serve for a shorter period of time, the role of the NCO is likely to be expanded. NCOs may be increasingly responsible for leadership and technical responsibilities, particularly in the fields of maintenance and logistics. The shortcomings of the PLA NCO corps have been recognized for years by both domestic and foreign observers. The change in terms of service will accelerate the strengthening of this portion of the PLA.

The PLA is now examining how to make its basic training shorter and more intense so that new troops can be integrated into their units faster. At the same time, the system of academies for the education of officers and NCOs is being reduced to correspond to the needs of a smaller force.

Eventually, as more young men are rotated in and out of the active forces, a larger pool of trained personnel will be available for the expanding reserve

force. As the reserves become larger, their integration into operations with active forces will become increasingly important in Chinese doctrine.

The amount of structural change under way in the PLA today is bound to be disruptive to the combat readiness of the force. With so many changes going on at one time, morale problems among the officers and troops could result. Uncertainty about reductions and relocations could easily lead to anxiety in the forces. In order to alleviate some of the pressures on commanders and troops alike, the central leadership appears committed to continue to emphasize pay increases and improvements in living standards, such as food and housing.

Not all the changes may be successful and additional modifications will probably be required in the future. Contrary to the frequent characterization in the foreign media of a rapidly modernizing force, these changes portray a military undergoing a much more gradual, deliberate, long-term modernization process.

If, and it is a big if, the various reforms under way in the PLA are successful and the equipment acquisitions reported to have been made actually take place, then in 10 to 15 years the Chinese military is likely to have some of the capabilities as did the Soviet forces in the Far East in the late-1980s, but in lesser numbers. While the PLA independently may acquire a few unique RMA capabilities of its own in the first and second decade of the new millennium, the majority of its modern weaponry will be of the generation that was defeated in the Persian Gulf War.

The U.S. forces that fought the 1991 Persian Gulf War were designed to defeat the Soviet forces of the 1980s. In the years since the Gulf War, the U.S. military has made advances that are causing even its NATO allies to question whether their militaries can keep up with U.S. forces.¹⁹⁷ Unless the U.S. military declines precipitously or is withdrawn from Asia over the next 10 to 15 years, there will still be a large gap between Chinese and modern American military capabilities in the region. If the Chinese economy continues to expand, this gap will close as time goes on and the Chinese temporal goal of mid-century approaches.

No matter what its pace, China's military modernization and the changes in its force structure merit careful monitoring and objective analysis by its Asian neighbors, the United States, and other Western countries. However, the Chinese military of the early twenty-first century most likely to develop is not

¹⁹⁷This situation was demonstrated during the campaign against Yugoslavia.

the threat upon which the United States military should base its current force modernization.