

Chinese Army Modernization: An Overview

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THE CHINESE People's Liberation Army (PLA) is in the third decade of a comprehensive program of modernization and transformation that began in 1979 after the PLA's last major campaign against a foreign enemy, its "self-defensive counterattack" against Vietnam. The program continues with renewed vigor into the new century.

Chinese military modernization encompasses all four services with priority of effort directed toward the PLA Navy (PLAN), the PLA Air Force (PLAAF), and the strategic missile force (known as the Second Artillery).¹ The ground army, which previously had been the center of gravity of the Chinese Armed Forces, remains the largest service and still provides the bulk of senior leadership for the military, but it has felt the brunt of force reductions as the PLA's mission emphasis has shifted. U.S. Army personnel who served in the post-Vietnam and post-Gulf War military should be able to appreciate the scope of what the Chinese are attempting and understand the time period required to achieve their goals.

The strategic underpinning for a long-term military modernization process was set in 1985 when China's supreme military command, the Central Military Commission (CMC), headed by paramount leader Deng Xiaoping, declared the most likely military contingency China faced to be "local, limited war" (replacing the threat of the "early, major, and nuclear war" foreseen by Mao Tse-tung).² Because the threat of major war was deemed low, senior Chinese leaders made the critical strategic decision to subordinate military modernization to other aspects of national economic development, such as agriculture, industry, and science and technology. Thus, in the 1980s and early 1990s, the Chinese Government did not spend vast sums of money and national resources to rapidly modernize the PLA. The "bloated" PLA could take its time to reform, focusing first on downsizing its 4-million-plus force.

For the first 10 years of modernization, China perceived its major potential foe to be the Soviet Union. Using force to reunify Taiwan with the

mainland was low on the list of China's military priorities. By the mid-1990s, the situation between the mainland and Taiwan had changed considerably. A multiparty democratic form of government was taking hold on the island, and voices for independence had risen. After the 1995-1996 crisis in the Taiwan Strait, China's leaders decided they needed to develop military capabilities more rapidly to prevent what Beijing perceived as further steps toward Taiwanese independence. Although Chinese leaders preferred peaceful reunification of the island with the mainland, they knew Taiwan and its supporters in the United States had to see China's military power as credible. As a result, after 1999 the intensity of the PLA's modernization process increased, focusing principally on the goal of deterring Taiwan's independence and, if necessary, on imposing the will of Chinese leaders by force. Although the Taiwanese scenario became the top planning priority, training for a variety of military missions continued throughout the country and in all PLA units.

The acceleration of PLA modernization after 1999 became possible to a large extent because of the confluence of a more specifically defined mission, the availability of increased resources, a smaller force, and 20 years of previous effort that had laid the groundwork for what was to follow. In particular, many advances in the PLA since 1999 have taken advantage of the Nation's impressive economic growth during the 1990s, especially developments in the Chinese electronics industry. The end of the Soviet threat, along with the availability of advanced military weapons from a cash-strapped Russian Government, also contributed to changes in China's strategic posture in the late 1990s. Still, despite some marked improvements in China's military capabilities, the effectiveness of PLA modernization has yet to be proven in battle against a hostile force.

Elements of Modernization

By the turn of the 21st century, several distinct but interrelated elements could be seen in the

PLA's modernization program. The following components of modernization were directly linked to developments of the previous two decades and enhanced by increased resources available since 1995:

- Reduction in force size.
- Changes in force structure.
- Reform of the structure and missions of the reserves and militia.
- Changes in the personnel system.
- An influx of new equipment.
- Doctrinal revision to prepare the PLA to fight and win Local Wars Under Modern High-Technology Conditions or Local Wars Under Informationalization Conditions.
- Improvements in the frequency, content, and methods of military training, with emphasis on joint operations.
- Transformation of the PLA logistics system.
- Enhancement of all soldiers' standard of living, pay, and lifestyle.
- Modification of the professional military education system.

Members of the U.S. Army will appreciate the complexity of the PLA's transformation, its long-term nature, and the difficulty of the tasks Chinese military leaders face. The PLA is also pursuing modernization with a much smaller resource and combat experience base than did the U.S. Army in the 1970s and 1990s. On the positive side, the PLA's modernization goals are more manageable because, unlike the U.S. Army, the PLA does not seek to project force across oceans, and it limits its scope of operations to what it considers protection of Chinese sovereignty (which, by definition, includes Taiwan and much of the South China Sea). The PLA does not have to man foreign bases and respond to a web of defense commitments throughout the world. Moreover, unlike the U.S. Army, the PLA remains a party-army bonded by loyalty to the Chinese Communist Party.

Security apparatus. The PLA is one of three elements of the Chinese Armed Forces, each of which is a separate, distinct organization, although all are closely related. According to China's National Defense Law of March 1997, Chinese Armed Forces are composed of the—

- PLA, both active and reserve units.
- People's Armed Police (PAP) Force.
- People's militia (ordinary and primary units).

The PLA is primarily responsible for defending China from external threats, with the secondary mission of domestic security in accordance with the law; that is, when requested by local authorities and approved by the central leadership. The ultimate command authority for the PLA is the CMC, with command running through four general

headquarters departments in Beijing to the forces deployed in seven military regions throughout the country.³ The PLA, PAP, and militia wear similar but distinct uniforms, have similar organizational and rank structures, and undergo similar basic training, but they have separate systems for command and control, funding, promotion, education, and training. All three support national economic development with labor and service projects and can be mobilized to provide rescue and relief support in the event of floods, earthquakes, and other natural disasters.

The PAP and militia are paramilitary organizations.⁴ By law and in practice, the PAP is not part of the PLA, although it is sometimes mistakenly called military police by Chinese and foreign sources alike.⁵ The PAP's primary mission, worked in conjunction with the Ministry of Public Security police force, is internal security. The PAP has a dual command structure that includes the CMC and the State Council through the Ministry of Public Security. Its secondary mission is to help the PLA in local defense against external enemies.

The militia supports the PLA in time of war and also helps maintain public order when necessary. The PLA chain of command and local civilian governments are in the militia's command structure. They cooperate through established joint civilian-military organizational mechanisms.⁶

The 1.7-million-person civilian Ministry of Public Security police force is primarily responsible for law enforcement and domestic security.⁷ It and the Ministry of State Security, with the missions of counterespionage and domestic and foreign intelligence, respond to the State Council and are not part of the Chinese Armed Forces. However, in its annual human rights reports, the U.S. Department of State (DOS) includes the Ministry of Public Safety with the PLA, the PAP, the Ministry of State Security, and "the state judicial, procuratorial, and penal systems" as part of the Chinese Government's security apparatus.⁸

According to a recent DOS report, "[c]ivilian authorities generally maintained effective control of the security forces." What kind of control they exercised is not altogether clear because "[s]ecurity policy and personnel were responsible for numerous human rights abuses. . . . At times, police used excessive force against demonstrators."⁹ There is no recent confirmed evidence of the PLA being used routinely to control domestic demonstrations or riots, although that could change if the civilian police force and PAP fail in their missions.¹⁰

The PLA is also distinct from the civilian-run (but mostly government-owned) defense industrial sector composed of some 2 million workers and thousands of enterprises that produce and sell

military equipment and civilian goods and services.¹¹

Reductions in force. The PLA has undergone two large reductions in force in the past decade, starting with about 3 million people in 1995 and losing 500,000 people from 1997 to 2000 and another 200,000 from 2003 to 2005.¹² Chinese sources note that by the end of 2005 the PLA will have about 2.3 million people on its active duty roster.¹³ As the largest component of the PLA with the lowest priority in modernization, army ground forces suffered the largest proportion of cuts. Current estimates put the number at 1.6 million—down about 500,000 from 1995. Reserve personnel, most of whom are in reserve army units, number about 800,000. The PAP might have up to 1.5 million in its ranks.¹⁴ The primary militia, according to a 2004 defense white paper, has 10 million members, but the number of ordinary militia, presumably a larger force, was not announced.¹⁵

While PLA active duty forces have been cut by approximately 23 percent over the past 10 years, the officially announced defense budget has nearly quadrupled from about 64 billion yuan in 1995 to 248 billion yuan in 2005.¹⁶ Yet these figures do not account for the total funds available to the PLA from extra-budgetary sources, such as support from local governments and special budgets for the purchase of foreign weapons. The PLA-watching community has debated exactly what should be included in estimates of actual Chinese defense expenditures and what factor should be applied to announced budget numbers to arrive at true defense spending. Estimates range from about 1.5 to 3 times (or greater) the announced figure.¹⁷ Whatever the true amount of funds available, such a large force is still relatively resource-constrained; thus, PLA leaders constantly look for ways to save money as new equipment enters the force and training opportunities increase. Future personnel reductions with increased defense budgets would not be surprising.

Change in Force Structure

To accommodate the loss of over 500,000 troops and to prepare for new missions, the PLA ground force has changed its structure greatly since the mid-1990s, when the main combat force was organized into 24 group armies (corps equivalent), approximately 90 maneuver (infantry and tank) divisions, about 15 brigades (mostly tank), plus scores of artillery, antiaircraft artillery (AAA), combat support, and local/border defense units.¹⁸

Soviet unit structure provided the organizational pattern for many PLA units.

Currently the PLA ground force is organized into 18 group armies, along with a number of

independent units that do not belong to any group army. Maneuver forces consist of approximately 40 divisions and about 43 separate brigades, supported by roughly 42 artillery, AAA, and air defense divisions and brigades, and various Special Operations Forces (SOF), reconnaissance, helicopter, engineer, communications, chemical defense, electronic warfare (EW), and high-technology units.¹⁹

While the two most powerful group armies retain their maneuver division structure, most group armies now have combinations of infantry and armor divisions *and* brigades, while four have an all-brigade structure.²⁰ With the Soviet model no longer the pattern for the future force, many units are still undergoing experimentation. PLA divisions are considerably smaller than U.S. equivalents and have less firepower.

A number of new mechanized divisions and brigades have been formed since the late 1990s, including a light mechanized infantry division and two amphibious mechanized infantry divisions. Heavy armored and mechanized infantry divisions and brigades comprise over 40 percent of ground force maneuver units, doubling the percentage of a decade ago. The army now has more amphibious forces than the PLAN, which has two marine brigades.²¹ At the same time, in the Nanjing Military Region a traditional army artillery brigade was transformed into a conventionally armed short-range ballistic missile brigade (with 12 to 16 launchers).²²

New air-defense brigades were also created by adding tactical surface-to-air missiles (SAMs) to AAA gun formations. (A number of AAA units without SAMs remain.) The number of helicopters of all types in the army has increased from about 135 in the mid-1990s to approximately 400 today.²³ This still-small number is organized into units of about 25 to 30 aircraft, with the units spread throughout the country.

In the 1990s, each military region formed an SOF unit of roughly 1,000 persons. These units can be delivered by parachute, helicopter, or sea. They principally conduct raids and long-range reconnaissance. (The bulk of the Chinese airborne force is in the PLAAF, which has an airborne army comprised of three divisions and a SOF unit.) Also, over the past decade a few psychological warfare units and high-technology communications, intelligence, and EW units have been created. In addition to targeting enemy communications and computer systems, high-technology units aim to interfere with or jam the guidance systems of enemy precision-guided munitions. Logistics support units have not been forgotten; the PLA understands its new equipment increases fuel, ammunition, and technical support requirements.

The PLA has adopted the term “revolution in military affairs (RMA) with Chinese characteristics” to describe primarily how it will build a smaller, more technologically advanced force through “mechanization and informationalization.”²⁴ Mechanization is the foundation for informationalization, which focuses on applying information technologies to procedures and equipment to enhance capabilities. The PLA acknowledges that its concept of RMA with Chinese characteristics is considerably different from more advanced militaries’ visions of RMA.

Reserves and militia. The active duty PLA has undergone major change, and the reserve force has undertaken similarly radical reforms in structure and mission since 1998.²⁵ Army reserve units are estimated to include about 42 infantry, artillery, and AAA divisions; 16 infantry, artillery, and logistics support brigades; and 7 chemical defense, engineer, and communications regiments.²⁶ Reserve infantry divisions are found in nearly every province and autonomous region, often with additional artillery and AAA reserve units. Since 1999, each military region has established a reserve logistics support brigade to sustain reserve and active duty operations. While many soldiers in the PLA reserve have served in active units, many reserve units recruit specialized civilians without prior service to fill specific technical needs. In time of war, reserve units can augment active forces or operate independently as local defense forces.

Over the past decade, militia forces have undergone major reorganization and reorientation, focusing mainly on the primary militia (ages 18 to 28) and less on the ordinary militia (ages 18 to 35), which is reportedly being reduced in size.²⁷ Militia units are found in villages and cities and in factories and commercial enterprises, including some foreign-owned companies. Many militia members have no active-duty service and receive only a few weeks of training per year. Militia units still perform the traditional roles of light infantry (especially in rear area support operations), air defense, and logistics support (particularly transportation and maintenance). In recent years, the role of urban militia has been highlighted, emphasizing air defense and repair of infrastructure damaged by long-range enemy attack. A variety of high-technology militia units have been formed to provide communications support and repair, as well as to conduct information operations.

In times of emergency, such as external defense, domestic unrest, or natural disaster, PLA reserves and militia elements are mobilized to support the active force. Manpower mobilization is one of the major responsibilities of the system of National Defense Mobilization Committees, which extends from national to county level and integrates mili-

tary, government, and Communist Party leaders at all echelons. These committees are involved in all aspects of civilian mobilization (equipment, materiel, communications, transportation, air defense, national defense education, and so on), and many are prepared to set up military-civilian command posts in time of crisis.

Personnel system. The PLA is a conscript force led by a contingent of volunteer noncommissioned officers (NCOs) and officers. In 1999 the conscription period was reduced to 2 years for all PLA conscripts.²⁸ The government brought in new soldiers from the countryside and cities in proportion to the population breakdown (70 percent rural/30 percent urban). Some conscripts were posted near their homes, although many serve in units assigned to other parts of the country. Near the end of their service period, some tactically proficient and politically reliable conscripts can volunteer to become NCOs and serve up to 30 years.

Also in 1999, the PLA implemented a new NCO system, NCO duties expanded, and the number of NCOs increased as the numbers of officers and conscripts were reduced. In recent years the PLA began enlisting limited numbers of civilians with special skills to become NCOs (enlistees undergoing only short, introductory training), but most NCOs come up from the ranks. In 2003, the CMC instituted a two-decade program to improve the quality of officers and NCOs through education and training.²⁹ This program was influenced, in part, by the study of foreign military systems, especially the role of the NCO, and recognizes that professional NCOs and officers cannot be created overnight. Most NCOs receive training at NCO schools or at some officer academies. They are divided into six grades, each with a specified term of service that is extended on promotion. As their numbers increase, NCOs are assigned new leadership and technical jobs. For example, NCOs are gradually replacing company mess officers (whose duties are similar to U.S. company supply sergeants).

New PLA officers come from four sources: graduates from civilian universities who elect to join after graduation; “national defense students” from civilian colleges who attend on scholarships and are committed to serve in repayment for their scholarships; cadets from PLA military universities and academies; and soldiers selected from the enlisted ranks. Officers are assigned duties in five categories: military (or operational), political, logistics, armaments, and specialist-technical. Their rank structure is similar to the U.S. Army’s (second lieutenant through colonel), but the PLA adds a senior colonel rank (division commander) and does not have brigadier generals. Instead, its major generals wear one star, lieutenant generals

two, and full generals three. In addition to military ranks, officers are assigned duty position grades, or posts, which extend from platoon leader through each level of command to CMC vice chairman.³⁰ Duty position grade takes precedence over military rank. In the PLA, unit commanders serve side by side with political officers who, as a rule, hold the same duty position grade and have the same military rank (although occasionally one officer might outrank the other). The commander and political officer are jointly responsible for the performance of their unit.

Weapons and equipment. Since 1999, PLA ground forces have received a variety of new Chinese-made weapons and equipment, including main battle tanks, amphibious tanks, armored personnel carriers, self-propelled artillery, tactical SAM and AAA systems, and small arms. A number of new support vehicles and items have also been deployed (forklifts, maintenance vans, fuel tankers, field kitchens, and ambulances). Of significance is that Chinese electronics and aviation industries have provided computers, satellite and microwave communications, optical fiber links, night-vision goggles, frequency-hopping radios, battlefield surveillance equipment, and unmanned aerial vehicles. Imports from Russia are limited mostly to Mi-17-series helicopters and precision-guided munitions and technology.³¹ Many of the above items were displayed at a large military parade in Beijing on 1 October 1999. A good source for photographs and technical descriptions of PLA equipment is the Chinese Defence Today website.³²

Not all units can be reequipped at the same time. Most still have a mix of high-, medium-, and low-technology equipment. Initially, the Army assigned new equipment to divisions, but by 2002 a few newly formed brigades received new equipment. The PLA recognizes that it takes time to achieve combat readiness after units receive new weapons; it has therefore set the general goal of achieving combat readiness with new equipment to within a year of its arrival at a unit. The PLA also accepts that it remains technologically less advanced than many other militaries. As a result, leaders often challenge soldiers to find new ways to use existing equipment to defeat a high-technology enemy. In 1999, the CMC replaced 1980s regulations with new doctrine outlining how the PLA will make “preparations for military struggle” and conduct future military operations. Based in large part on careful examination of foreign military campaigns of the 1990s, updated doctrine emphasizes joint operations and incorporates lessons learned about the effectiveness of modern technology while still emphasizing the importance of man and the support of the Chinese population. The PLA also

retains other traditional concepts, such as speed, surprise, deception, stratagem, and the decisive role of the offense. The conduct of joint operations is an important element of all levels of professional education, and the PLA has published many books and articles to explain it.

Training. The Military Training and Evaluation Program (MTEP), which sets standards for training and evaluation of all types of units and headquarters elements, guides PLA training for both active and reserve units.³³ The MTEP is modified according to new requirements and the acquisition of new capabilities. The General Staff Department formulates annual training tasks, which vary according to military region and service. Units often receive specific topics for experimentation in order to develop and refine tactical procedures such as night, high-altitude, or logistics operations. Units study successful lessons learned, and if they are applicable to other units, they are disseminated throughout the force. Many experiments are discarded.

Chinese ground forces are involved in a range of training activities throughout the country. Units prepare for missions appropriate to local situations (coastal, interior, desert, mountain, and so on) and train to defend against external threats, to foil terrorists, and to conduct disaster-relief operations. Many tasks are highlighted during field deployments, but nearly every major exercise includes rapid mobilization and deployment from garrison and defense from long-range air or missile attack. Units might be in the field for several months while undergoing progressive training from small-unit to group-army exercises.

Since 1996, the PLA's main training focus seems to be on amphibious operations. Four major amphibious training bases have been designated along the coast, and many units have built smaller amphibious training areas locally. Over the past 5 years approximately one-quarter or more of all army maneuver divisions and brigades have trained to some extent for amphibious operations. The Nanjing and Guangzhou military regions opposite Taiwan are the sites of most amphibious training, but some units from the Jinan, Shenyang, and Beijing military regions also participate. In contrast to 10 years earlier, units have crossed military region boundaries during a few exercises.³⁴

Live-fire and force-on-force confrontation exercises are integral elements of the training cycle, which culminates in annual evaluations. In garrison, unit training halls are equipped with computers and weapons simulators to prepare for all aspects of field training. Computer wargames, often played from multiple locations, are becoming common.

Logistics. Functions considered logistics in the U.S. Army are managed by two PLA systems, one headed by the General Logistics Department, the other by the General Armaments Department. The PLA is developing joint logistics structures centered in the military regions to support forces of all services. Logistics units provide general-purpose supplies (food, water, uniforms, transportation, medical support, and so on) while armaments units provide specialized supplies (such as ammunition) and services (maintenance and repair support). A major component of reform is outsourcing, or contracting, with civilian enterprises for goods and services such as dining facilities management, grain storage, fuel and some spare parts provision, and some maintenance.³⁵ Also, in the event of war, the PLA will mobilize and integrate civilian personnel and materiel into the force at least in the war zone and possibly throughout the Nation to support any campaign lasting more than a few days. Such mass mobilization is another of the traditional People's War concepts that have survived into the 21st century.

Soldiers' standard of living. The Chinese Government states that a large part of official defense budget increases in recent years has gone to improving the standard of living for all PLA personnel. This statement is true. Improving living standards is especially important in maintaining troop morale as most of the rest of the country gets richer and fatter. Accordingly, soldiers have been issued new uniforms, including Kevlar-type helmets, and berets, and units have developed colorful identification patches to be worn on uniform sleeves. Pay and benefits have increased substantially, albeit from a low base. Ration allowances have been consistently increased to provide a greater variety of food and beverages in garrison and in the field. Barracks throughout China have been rebuilt and refurbished and conveniences such as washers, dryers, and air conditioners added. Modern communications, entertainment equipment, and computers are available to troops in numbers unimagined a decade before.

Education. To keep up with the changes in force structure and doctrinal developments, the PLA has also reformed its system of schools and academies. Like the rest of the force, the system has decreased in size. Many institutions have been consolidated with others, reassigned to local governments, or closed down altogether. Courses of study have been modified to reflect new joint doctrine and new missions such as disaster relief and peacekeeping operations. New schools for NCOs have been established and long-distance learning encouraged using the Internet. Officers now can pursue advanced degrees in over 50 PLA institutions and in civilian schools in China and abroad.

As its equipment becomes more advanced and its doctrine more complex, the PLA understands the need for highly educated, technically proficient personnel. Chinese leaders also accept that achieving their goals will take years, perhaps decades, to accomplish.

More Changes Ahead

Despite the slow, long-term nature of PLA modernization, Chinese military officers will obey their civilian leaders' orders and execute assigned missions to the best of their ability. The longer they have to modernize and prepare for those missions, the greater their chance of success. Beijing's own estimate of another 10 to 20 years for the modernization program to reach advanced standards is realistic.³⁶ In the meantime, ground forces will focus on building SOF, long-range missile, helicopter, and high-technology units to be used in the early stages of a campaign to support the missile, air, and naval forces that most likely will engage the enemy. Large-scale amphibious operations will probably not come early in future campaigns, but nevertheless, the PLA continues to prepare for that contingency, just as it prepares to repel threats along its land borders.

By monitoring Chinese media, observers can follow to some extent the type, size, and content of some PLA training; however, accurately judging the quality of training or proficiency of units is problematic. While the PLA has certainly improved its capabilities over the past decade, much of its training still appears to be relatively rudimentary. For example, despite the emphasis on joint operations, no PLA officer has actually planned for or commanded under combat conditions the type of operations the new doctrine envisions. Tellingly, in the past 2 years the PLA has created the term integrated joint operations to remind commanders that they must include all elements of combat power in exercise scenarios and training. Furthermore, the PLA does not train for or even have the doctrine to execute what the U.S. military considers close air support, and the number of helicopters in the force is so small as to severely limit the size and frequency of airmobile training. The PLAAF's large-transport fleet is also extremely small, which significantly affects force projection. Nonetheless, PLA leaders understand its capabilities and shortfalls—better than most outside analysts do.

The U.S. military's experiences in modernizing and transforming should provide us some appreciation for the difficulty the PLA faces in executing a modernization program composed of so many parts. But the Chinese are patient and resolute. With the country continuing to apply more money to the process, the PLA's progress deserves close study and objective analysis. **MR**

NOTES

1. Most foreign military analysts recognize that for many years the People's Liberation Army (PLA) has shifted the priority of effort to the PLA Navy (PLAN), the PLA Air Force (PLAAF), and the Second Artillery. The Chinese Government confirmed this prioritization in "Revolution in Military Affairs with Chinese Characteristics," *China's National Defense in 2004*, 27 December 2004, on-line at <http://english.chinamil.com.cn/special/cnd2004/contents_04.htm>, accessed 5 October 2005.

2. Andrew J. Nathan and Robert S. Ross, *The Great Wall and The Empty Fortress: China's Search for Security* (New York: W.W. Norton & Company, 1997), 144.

3. The four general headquarters departments are the General Staff Department, General Political Department, General Logistics Department, and General Armaments Department. The PLAN, PLAAF, and Second Artillery have separate national-level headquarters while the general headquarters departments serve as the army national-level headquarters. The People's Army Police's (PAP's) national headquarters in Beijing is distinct from PLA facilities. PAP headquarters has provincial-level commands throughout the country that are separate from PLA headquarters. Military regions headquarters are joint, administrative headquarters that command PLA, PLAN, and PLAAF units in their areas of responsibility. In time of war, military region headquarters will be the basis of the war zone headquarters, which is likely to be augmented, and perhaps commanded, by officers from the four general headquarters departments.

4. In U.S. terminology, paramilitary forces are "forces or groups which are distinct from the regular armed forces of any country, but resembling them in organization, equipment, training, or mission" (Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms* [Washington, DC: U.S. Government Printing Office (GPO), 1994], 321).

5. The PLA maintains order within its ranks through unit chains of command and garrison headquarters. Garrison commands maintain local discipline and provide courtesy patrols and vehicle checkpoints that have authority only over military personnel and vehicles. The PAP has no role in maintaining internal discipline within the PLA as would true military police. In time of war, PAP and militia units might perform the military-police functions of rear-area security and traffic and population control.

6. The chain of command for the militia extends from military regions to provincial military districts to military subdistricts and finally to People's Armed Forces departments that operate closely with local government and party organizations.

7. See "33,761 Unqualified Policemen Dismissed in Clean-up Campaign," *Xinhua Online*, 7 January 2004, at <<http://us.china-embassy.org/eng/xw/58000.htm>>, accessed 5 October 2005.

8. U.S. Department of State, "China (includes Tibet, Hong Kong, and Macau): Country Reports on Human Rights Practices—2004," 25 February 2005, on-line at <www.state.gov/g/drl/rls/hrrpt/2004/41640.htm>, accessed 5 October 2005.

9. Ibid.

10. The PLA's secondary mission is domestic security, and it indeed has the potential to become involved in controlling civilian demonstrations and riots as it did in 1989. However, in the 16 years since the Tiananmen Square massacre, China has strengthened Ministry of Public Security police and PAP forces to the point where the PLA is not required to routinely control civil disturbances. While the presence of PLA units throughout the country might ensure that the many thousands of demonstrations and riots that occur each year do not get out of control, the Chinese Government and PLA leaders clearly prefer the Ministry of Public Security and PAP to be the first and second lines of defense for domestic security, with the PLA providing the third line of defense only as a last resort. With regard to violent domestic terrorism, however, the PLA might take a more active role, along with the police and PAP, in hunting down armed extremists, particularly in western regions of China.

11. In the early decades of the People's Republic of China, the military controlled defense industries. As China has undergone economic reform, defense industries have separated from the military and are now completely civilian-run enterprises, although the PLA assigns a small number of military representatives to defense factories. Chinese defense industries are divided into six sectors (nuclear, aerospace, aviation, shipbuilding, ordnance, and electronics) and provide the bulk of the weapons and equipment the PLA uses. Defense industries also have a number of import-export companies authorized to buy and sell arms, equipment, and technology on the international market. Although import-export companies (like NORINCO, CPMIEC, and Great Wall) have seller-to-buyer connections with the PLA, the PLA does not control their business dealings. The State Commission of Science, Technology and Industry for National Defense (COSTIND) supervises the defense industrial sector. Before 1998, COSTIND was part of the PLA national headquarters organization. In April 1998, COSTIND disbanded, and its military officers returned to the PLA. (Most went to the newly formed General Armaments Department.) COSTIND then reformed again under the State Council, this time with only civilians in the "new" organization. The PLA does control a small number of factories that employ civilian workers to produce some military items (but not weapons) the PLA uses. Apparently, the number of these PLA-run factories is decreasing.

12. As part of the 500,000-man reduction between 1997 and 2000, 14 PLA divisions were transferred to strengthen the PAP.

13. *China's National Defense in 2004*, "Revolution in Military Affairs." Chinese sources do not detail the number of people in each service or the reserve force. In *The Military Balance, 2004-2005* (London: Oxford University Press, 2004), 170, The International Institute of Strategic Studies (IISS) estimates "some 2,255,000." Unlike other countries' armies, the PLA's active duty figure includes an unknown number of uniformed civilians (without military rank) who work for the PLA in a variety of technical, medical, educational, and administrative roles, similar to U.S. Department of Defense (DOD) civilians (who are not counted as active forces). In June 2005, regulations were issued to allow the PLA to hire civilian contract workers, who will also wear uniforms but not be counted on active duty rosters. See "Chinese Army to enroll nonmilitary personnel on contract basis," *People's Daily Online*, 5 July 2005, at <http://english.people.com.cn/200507/05/en20050705_194081-h.htm/>, accessed 5 October 2005.

14. Personnel numbers are from *The Military Balance, 2004-2005*, ed., Christopher Langton (Oxford: Oxford University Press, 2004), 170-72. These numbers

include approximately 255,000 in the PLAN, 400,000 in the PLAAF, and 100,000 in the Second Artillery.

15. "National Defense Mobilization and Reserve Force Building," *China's National Defense in 2004*, 27 December 2004, on-line at <http://english.chinamil.com.cn/special/cnd2004/contents_07.htm>, accessed 5 October 2005.

16. China's defense budget equates to nearly \$8 billion in 1995 and \$30 billion in 2005. The 1995 figure is from *China's National Defense, July 1998* (no other information available). The 2005 figure is from "NPC proposes \$30 bln military spending for 2005," *China Daily Online*, 4 March 2005, at <www.chinadaily.com.cn/english/doc/2005-03/04/content_421866.htm>, 5 October 2005.

17. A recent RAND report estimates total defense expenditure to be 1.4 to 1.7 times the officially announced number. This estimated range of spending is considerably smaller than DOD's estimate of two to four times the announced budget made in DOD's series of reports to Congress on the Chinese military. Other sources have made even higher estimates of actual spending. The Chinese Government disputes all of these estimates. My personal guess falls at the lower end of this spectrum as official defense budgets increase. I would also argue against including funds for the PAP and subsidies to Chinese defense industries (as some estimates do) in the PLA budget. See Keith Crane, Roger Cliff, Evgen Medeiros, James Mulvenon, and William Overholt, *Modernizing China's Military: Opportunities and Constraints* (Santa Monica, CA: RAND, 2005), on-line at <www.rand.org/pubs/monographs/2005/RAND_MG260-1.pdf>, accessed 5 October 2005.

18. The outline of force structure is from IISS, *The Military Balance 1996-1997* (New York: Oxford University Press, 1996), 179, on-line at <www.oup.com/us/catalog/general/subject/Politics/InternationalStudies/StrategicSI/?view-usa&ci=0198292171>, accessed 5 October 2005.

19. Current force structure is based on an order of battle compiled from the *Directory of PRC Military Personalities, October 2004* (Honolulu: Serold Hawaii, Inc.) and updated using reports from the Chinese media over the past year.

20. Chinese sources indicate that in the future the PLA will form more group armies with all-brigade structures. See "Chinese military to be restructured," *People's Daily Online*, 13 July 2005, at <http://english.people.com.cn/200507/13/eng20050713_195881.html>, accessed 5 October 2005, and "Military urged to earnestly implement the new authorized establishment," *PLA Daily Online*, 12 July 2005, at <http://english.chinamil.com.cn/site2/news-channels/2005-07/12/content_248285.htm>, accessed 5 October 2005. Needless to say, when a group army is composed only of brigades, it more closely resembles a U.S. Army division than a corps, its putative equivalent.

21. One of the two marine brigades was formed from an army division transferred to the PLAN in the late 1990s.

22. Over the past 15 years the Second Artillery has deployed up to 7 conventionally armed short-range ballistic missile brigades and modernized its medium-range and intercontinental ballistic missile force.

23. IISS, *The Military Balance 1996-1997*, 180, and *The Military Balance 2004-2005*, 170. The U.S. Army has over 4,000 helicopters to support a force about one-third the size of the PLA ground force.

24. See *China's National Defense in 2004*, "Revolution in Military Affairs."

25. For the Chinese, the term reserve force includes PLA reserve units and the militia. Both organizations are composed mostly of civilians who do part-time military duty. PLA reserve units have a small cadre of active duty personnel and are commanded by PLA provincial military district headquarters. Militia units come under the command of local People's Armed Forces departments manned by PLA personnel who coordinate closely with local political leaders.

26. The number of reserve units is based on the order of battle compiled from the *Directory of PRC Military Personalities*, updated with new information from the Chinese media in the past year.

27. The ordinary militia could conceivably number in the tens of millions; however, much of the ordinary militia probably consists of lists of the names of (untrained) people to be mobilized in case of emergency. How to manage and train such a large part-time force for efficient operations is problematic. Chinese leaders realize this and, therefore, focus development more on the smaller, but still numerically large, primary militia.

28. Previously, ground troops served for 3 years; PLAN and PLAAF personnel served for 4 years. Conscripts enter service only once a year, in the fall, and people from the same pool of 18- to 22-year olds might be assigned to either the PLA or PAP.

29. *China's National Defense in 2004*, "Revolution in Military Affairs."

30. The Central Military Commission (CMC) chairman is usually the president of the country and general-secretary of the Chinese Communist Party; he does not hold military rank. Duty-position grade levels apply to commanders and political officers and also include grades at the deputy organizational level. Officers serving on staffs will have lower grade levels than principal commanders and commissars in the unit. For example, a staff officer in the operations section of a brigade or regiment probably will have a duty-position grade level equivalent to battalion or lower. Simply put, what you do in the PLA (that is, your duty position) is more important than your rank. PLA regulations stipulate that officers are to be addressed first by their duty position (for example, Commander Zhang). Military rank (or the word comrade) should be used only if the duty position is not known.

31. The PLA has imported some SA-15 surface-to-air missiles (SAMS) from Russia, but they are probably deployed in support of SA-10/20s found in the PLAAF.

32. *Chinese Defence Today*, on-line at <www.sinodefence.com/default.asp>, accessed 5 October 2005.

33. Some sources call the Military Training Evaluation Plan (MTEP) the Outline of Military Training and Evaluation.

34. I derived training activity levels from personal study of Chinese media reports since 1998.

35. The Chinese also use the terms socialization or socialized support for outsourcing.

36. While China's modernization is progressing, other militaries will also have progressed (or not) from their current status. Therefore, we must judge PLA capabilities to accomplish specific missions by the PLA's improvement in absolute terms over its own previous standards as well as in relative terms against the capabilities of its potential foes.

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