6. THE PEOPLE'S LIBERATION ARMY (PLA) GENERAL LOGISTICS DEPARTMENT (GLD): TOWARD JOINT LOGISTICS SUPPORT

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INTRODUCTION

> "We believe that in the 21st century, when high-technology warfare becomes the main form of war, precision-oriented logistics is inevitably the way forward. Precision-oriented logistics reflects the nature of military logistics in the information age… to achieve effective support…with relatively small input, but relatively high efficiency."
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> - Cheng Kuaile and Zhang Ping, Logistics Command College, 2000[597]

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[597] Cheng Kuaile and Zhang Ping, "Precision-Oriented Logistics: Objective of [the] Logistics Revolution in the 21st Century," *Zhongguo junshi kexue*, 20 November 1999, translated in FBIS, 4 February 2000.

Of the myriad of modernization challenges the People's Liberation Army (PLA) faces to prepare to fight a modern, regional war under high tech conditions, logistics is one of the most complex. If the PLA hopes to realize even a limited, power projection capability, likely based around Rapid Reaction Units and other key assets, it must develop an effective joint logistics capability. Without this, China's conventional regional deterrent and its ability to underwrite its key national security objectives could be affected.

Accordingly, the PLA has targeted improved logistics to support joint combat as the main goal of its logistics reforms. This goal will be challenged by the realities of a large multi-generation inventory of equipment, limited resources, and influences and distractions from the PLA's continuing and unique involvement in administrative logistics, production, and support to the Chinese economy.

How the PLA, in general, and the General Logistics Department (GLD), in particular, address these challenges to transform PLA logistics into a high tech joint support system remains to be seen. Since China's ability to project military power will depend upon its logistics capabilities, it is a critical area to investigate. But assessments and measurements of the PLA's success or failure should avoid simplistic and direct comparisons to other modern military logistics systems, especially evolving Western logistics systems. Analysts should avoid assessments based on perennially limited information, that habitually disdain PLA logistics as a historically weak link. On the contrary, PLA logistics have proven highly adaptable and flexible to the situation. Often PLA logistics was not "pretty." It lacked efficiency, expended excessive personnel and other resources, or it failed to support decisive engagements. Significant shortfalls do exist. Nonetheless, PLA logistics has been proficient in providing sufficient operational support to massive numbers of personnel and equipment of mixed generations and origins that would make Western logisticians blanch. Their efforts to achieve a sufficiently effective joint logistics system with Chinese characteristics warrant sustained objective analysis.

This paper reviews the PLA's development of its logistics organization with focus on the top structure, examines its recent efforts to develop joint logistics, speculates on the GLD's influence within the PLA, and provides some thoughts on PLA modernization over the next ten years.

ORGANIZATIONAL HISTORY[598]

In the armed forces of developing countries, logistics has consistently been the slowest component to develop. Yet, logistics…provide one of the greatest constraints upon the buildup of these forces beyond a certain point. Modern China has proven no exception. Logistics…[was] a central weakness of the Nationalist military…Communist military forces…appreciated more fully the role of resupply in military operations, and this comprehension proved an important factor in their victory… Gillespie and Sims[599]

PLA logistics has been shaped by the unique political and economic history of the People's Republic of China. Through its support of internal revolution, repelling Japanese invaders and periodic border conflicts, as well as its deep involvement in national economic development, the PLA logistics system has developed distinctive characteristics. These will affect its latest modernization effort, which seeks nothing less than credible joint support of combat operations.

The development of PLA logistics has been particularly influenced by key experiences within four phases since the founding of the PLA:

- Revolutionary and Anti-Japanese Experience (1930s-1949)
- Korean War and Soviet Alliance and Assistance during the 1950s
- Political Struggle and Modernization (1959-1979); Troubles North and South (Sino-Soviet Border Conflict 1968 and Sino-Vietnam Border War)
- 1980-1989 - Opening to the West
- 1990-Gulf War; Taiwan

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598 Among the sources consulted in developing this historical review of Chinese logistics organization and operations were: Richard Gillespie, and John C. Sims, Jr., "The General Rear Services Department,", in William W.Whitson, , ed., *The Military and Political Power in China in the 1970s*, New York: Praeger, 1972 pp. 185-213; Harlan W. Jencks, *From Muskets to Missiles: Politics and Professionalism in the Chinese Army, 1945-1981*, Boulder, CO: Westview Press, 1982; Shuguang Zhang, *Mao's Military Romanticism: China and the Korean War, 1950-1953*, Lawrence: University of Kansas, 1995; and William W. Whitson, *The Chinese High Command: A History of Communist Military Politics, 1927-71*, New York: Praeger Publishers, 1971. See also Harvey W. Nelson, *The Chinese Military System: An Organizational Study of the Chinese People's Liberation Army*, second edition, Boulder, CO: Westview Press, Inc., 1981; You Ji, *The Armed Forces of China*, I.B. Taurus, 1999; *Handbook on the Chinese Armed Forces*, Defense Intelligence Agency, July 1976; Samuel B. Griffith, II, *The Chinese People's Liberation Army,* New York: McGraw-Hill Book Company, 1967; Gerald Segal, *Defending China*, Oxford: Oxford University Press, 1985; Paul Godwin, *Development of the Chinese Armed Forces*, Air University Press, Maxwell Air Force Base, June 1988; and Ngok Lee, *China's Defence Modernisation and Military Leadership*, New York: Australian National University Press, 1989.

599 Gillespie and Sims, p. 185.

Revolutionary and Anti-Japanese Experience (1930s-1949)

According to a Chinese reference, military logistics was established in the Red Army at the time of the founding of the army. By November 1931, the Red Army had organized to provide military supplies, ordnance, medical, transportation and other support. Red Army re-supply depended upon three sources - captured Japanese and Nationalist materiel and stocks; taxation and requisition; and troop production.[600] Since commanders personally managed logistics as an additional responsibility, specialization in logistical support was slow to develop.

In the second half of 1939, the Central Military Commission established a logistics organization to manage medical and other support. By 1942 the Eighth Route Army established a rear services department (*houfang qinwei bu*) with subordinate elements managing medical support, etc.

Logistical requirements expanded during the latter half of the 1940s, when the defeat of Japan and the subsequent outbreak of the Chinese Civil War made a greater amount of supplies and materiel available to the Red Army. During late 1945, the Red Army incorporated 300,000 rifles, 4,836 machine guns, 1,226 artillery pieces and 2,300 vehicles taken from the defeated Japanese army. In April 1946, they acquired armor from the Nationalists at the battle of Changchun, and anti-aircraft weapons from two Mukden arsenals in 1948. [601]

Between 1946-1950, PRC sources claim the military acquired a total of about 3.2 million small arms, over 300,000 machine guns, over 54,000 artillery pieces, 622 tanks, 189 military aircraft, and 389 armored cars, plus extensive stores of supplies.[602] An estimated 60% of all material the U.S. provided the Nationalist forces eventually became Red Army assets.[603]

In addition to equipment and supplies, by 1946 the Red Army logistics support faced the challenge of incorporating 75,000 Nationalist troops into the military, while managing logistics support to about 1.5 million demobilized Nationalist soldiers.[604] These additional resources dramatically increased the Red Army's need for expanded logistical management and control. Consequently, the logistical system became more regularized, and specialized logisticians developed.[605] Political commissars also played

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[600] Gillespie and Sims, p. 186-187.

[601] Ibid., p. 189.

[602] Ibid.

[603] Ibid, p. 190.

[604] Ibid., p. 189.

[605] Despite the Nationalists own logistics shortfall, once they were captured or surrendered, Nationalist soldiers and officers, many who had received U.S. training, may have helped the PLA develop a more centralized system. One PRC source noted the Guomindang military established a rear services organization as early as August 1937, and had strengthened centralization by 1946.

an increasingly central role in procurement of labor and materials, which relied on mobilization of local populations.[606]

By 1949, long experience with persistent shortages and irregular supply had taught the Red Army leadership the value of supply discipline. The revolutionary experience had also dramatized the necessity to adequately care for soldiers to sustain morale and cohesion. The importance of troop production to sustain self-sufficiency and lessen the burden on local populations was also demonstrated, as was the importance of mass mobilization, a primary role of the political commissar. At the same time, the easy acquisition of captured materiel and supplies, as well as the limited role airpower and naval forces played in the Red Army's decisive victory, left the PLA with an Army-centric experience of modern warfare. By the end of the civil war, the PLA possessed a large, but eclectic, supply of foreign equipment and materiel. From a logistical point of view, such a collection of mixed sources and equipment densities may have encouraged a continued tradition of flexibility, adaptability and improvisation, but it came at the expense of standardization, interchangeability, and regularization in supply, maintenance, and production.

Despite the Red Army's success in providing support to the field, at the time of the founding of the PRC military logistics remained largely decentralized under the five field armies who sustained self-sufficiency.[607] Victory, nonetheless, provided impetus to consolidate and organize PLA logistics under a more centralized system. By 1949, the General Rear Services Department was established under the leadership of Yang Lisan, former head of logistics in the Second Field Army.[608]

Korean War and Soviet Alliance and Assistance during the 1950s

The Korean War alerted the PLA leadership to the "the importance of logistic[s]…in a modern war"[609] and the need for major change. When China entered the war, logistics support to the operations was carried out under the policy of "self-reliance and basing ourselves on home supplies. "[610] This policy, which the acting Chief of Staff, Nie Rongzhen, credited to Zhou Enlai, who oversaw details of logistics support of the Chinese People's Volunteers (CPV) from the rear, depended on the local

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606 Ibid.

607 Ibid., p. 191.

608 Whitson, William W., *The Chinese High Commmand,* Chart V. For discussion of Yang Lisan's role (which appears to be quite limited) to provide logistics support during the Korean War, see Shuguang Zhang, *Mao's Military Romanticism* and Chen Jian, *China's Road to the Korean War: The Making of the Sino-American Confrontation*, New York: Columbia University Press, 1994.

609 Nie Rongzhen, translated by Zhong Renyi, *Inside the Red Star: The Memoirs of Marshal Nie Rongzhen*, Beijing: New World Press, 1988, p. 645.

610 Ibid., p. 647.

population for food and the enemy for captured ammunition. It proved inadequate, however, outside China's borders.

As a consequence, Nie lamented, significant, even decisive, operations were squandered or prematurely cut short because of shortfalls in basic supplies, such as clothing, food, or ammunition.[611]

By the beginning of the Third Campaign, which began on December 31, 1950, the CPV, under the command of Peng Dehuai, began to lose momentum as its forces pushed retreating UN units below the 38th parallel, capturing Seoul, and penetrated south. Mao Zedong sought a decisive victory that would throw UN forces off the peninsula, but stretched supplies lines and inadequate logistics proved insurmountable, and the CPV was eventually forced to withdraw north. UN forces regained control of Seoul.

In his Cultural Revolution "confessions" Peng explained the predicament his exhausted forces faced to carry out Mao's expectations. "[Having] fought three major campaigns in a row in severe winter," he wrote, and having endured relentless punishment from "enemy bombers…our supply lines had now been extended, [so] it was very difficult to get provisions,"[612]

To address the urgent shortfalls, the Central Military Commission directed the Northeast Military Command to hold a special logistics meeting in early 1951. This convened on January 22-30 in Shenyang, and resulted in several improvements in ground and rail transportation support to the war.[613] But problems continued. In May 1951, Peng sent Deputy Commander Hong Xuezhi to Beijing to urge that an operational unified logistics command be set up to direct all support, including protection of supply lines. The military leadership agreed, but to his dismay, Hong was selected the CPV logistics commander. He, like many revolutionary veterans at the time, disdained logistics. He accepted command only with the promise that he would not have any logistics responsibilities after the war.[614]

From 1950 to 1954, Hong Xuezhi concurrently served as the Deputy Commander and Commander of Logistics of the Chinese People's Volunteers (CPV). Under his leadership, the basis for a modernized operational logistics system was established. During the war, China's power projection and support capabilities sufficiently developed to support one million soldiers and underwrite an operational stalemate against a modern, advanced opponent outside China's territory.

Huang Gezheng, a protégé of Peng Dehuai, served as the Director of the General Rear Services Department (GRSD) from 1954 to 1956. After the war, Hong Xuezhi, also closely associated with Peng, became the GRSD director in 1956, while Huang was

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611 Ibid., p. 646.

612 Peng Dehuai, translated by Zheng Longpu, *Memoirs of a Chinese Marshall*, Beijing: Foreign Languages Press, 1984, p. 478.

613 Shuguang Zhang, p. 168

614 Ibid., p. 171.

promoted to Chief of the General Staff.[615] Together – Peng, Huang and Hong – were closely linked to Sovietization. During most of the 1950s, PLA logistics operations and organization developed along the Soviet model. The major focus of Soviet assistance, however, concentrated on the development of China's defense industries. About one half of all equipment the Soviet Union delivered to China "was intended for military enterprises and plants,"[616] which closely involved military production organs of the GRSD.

Political Struggle and Modernization (1959-1979); Troubles North and South (Sino-Soviet Border Conflict 1968 and Sino-Vietnam Border War)

The deterioration of Sino-Soviet relations beginning in 1958, the fall of Minister of Defense Peng Dehuai at the Lushan Conference in 1959, and the subsequent Soviet decision to withdraw its advisors from China in July 1960, [617] all affected GRSD operations as national politics devolved toward the Cultural Revolution (1966-1976). Qiui Huzuo replaced Hong Xuezhi within two months of the purge of Minister of Defense Peng and the rise of Lin Biao, former commander of the Fourth Field Army.

During the 1960s and 1970s, the GRSD became involved in advanced weapons (nuclear) production, as well as its traditional role in conventional military and civilian types of production. The organization, unlike the General Political Department (GPD), weathered the rough waters of the Cultural Revolution (1966-1967), especially the excesses of 1966-1967, but the experience left a complex legacy on PLA logistics.

The organization was credited with protecting military production from disruption and sustaining critical operations of the essential national rail system, but it could not avoid being drawn into political struggle. Many older professional soldiers were purged, and some operations were disrupted. Weapons were taken from logistics storage facilities to arm competing factions. Political commissars suffered most, as did those who were closely associated with Peng Dehuai and Soviet-style professionalism.

Up until Soviet border tensions in the late 1960s abruptly ended the escalating internecine violence and the Red Guards were sent down to the countryside, the GRSD was also credited with providing effective logistical support and transportation to over 50 million Red Guards.[618] Once the military intervened in the day to day running of the country, the GRSD continued to play a key role in sustaining and operating vital national logistical systems.

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[615] Gillespie and Sims, p. 197.

[616] Goncharenko, Sergei, "Sino-Soviet Military Cooperation," in Odd Arne Westal, ed., *Brothers in Arms: The Rise and Fall of the Sino-Soviet Alliance, 1945-1963*, Washington, D.C: Woodrow Wilson Press, 1998, p. 160.

[617] Ibid., p. 361.

[618] Former Red Guards marvel at how efficiently the train system supported them as they freely traveled throughout China – enjoying free transportation, food and lodging wherever they went.

For the PLA, the 1968 border tensions with the Soviet Union were a mixed blessing. The tensions provided good reason to contain the excesses of the Cultural Revolution, but also revealed PLA operational and logistics weaknesses, as the PLA shifted its attention to the threat of a stronger, nuclear power along its entire northern border. Mao responded to the nuclear threat by exhorting the people to "dig deep and store grain" to survive attack of the capital and elsewhere throughout the country, stressing cover and concealment of vital operations.

By the end of the 1970s, PLA logistics retained its unique traditions of self-sufficiency and military production,[619] as well as its foundational Soviet influence. As Deng Xiaoping returned to power and initiated a national policy of reform and opening to the West, the basis for "macro-level policy management of the military economic production system" that would balloon into PLA, Inc. in the 1980s and 1990s, was well-established within the GRSD by 1977.[620]

1980-1989: Opening to the West

Following the Third Plenum of the 11th Central Committee in December 1978, the sixty-seven year old Hong Xuezhi, once again, assumed responsibility for PLA logistics. He headed the successor organization to the GRSD, the General Logistics Department (GLD), from 1980 to 1987.[621] Between 1985-1987, Hong concurrently served as GLD Director and Political Commissar.[622]

The conflict with Vietnam in 1979 "proved to be a testing ground for Chinese military doctrine, its soldiers and equipment."[623] The "lesson" revealed numerous logistics weaknesses to the GLD:[624]

- Transportation and supply. Both were inhibited by shortages in ground and air transportation. Transportation was provided with a mix of foreign and domestic ground vehicles, including some armored vehicles. PLA forces moved primarily on foot. Vietnamese forces, in contrast, were mobile.

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[619] Gillespie, Sims, "The General Rear Services Department," pp. 185-213.

[620] Gillespie and Sims,. See also Mulvenon , *Soldiers of Fortune,* Armonk, NY: M.E. Sharpe, 2001.

[621] One Chinese source claims the GRSD was renamed the GLD as early as 1960, but this contradicts other sources.

[622] *Who's Who in China: Current Leaders*, Beijing: Foreign Languages Press, 1989, p. 215.

[623] Singler, Alan J., "The People's Liberation Army in Vietnam and Changes in PLA Military Doctrine," in *How They Fight: Armies of the World*, Washington, D.C.: U.S. Army Intelligence and Threat Analysis Center, June 1995. Also see *Handbook of the Chinese People's Liberation Army*, and *From Muskets to Missiles.*

[624] Singler, p. 9.

- Communications. Below the regimental level communications were insufficient to assure secrecy and effective coordination. In contrast, Vietnamese forces were well supplied with modern radios and field phones. Poor communications between the front and support elements caused supply convoys to miss their rendezvous with combat troops.
- Ammunition. Lacking tactical air support, PLA combat forces expended excessive rates of ammunition. Supplies were exhausted at the regimental level before resupply could be provided.

Analysis of China's war in Vietnam caused the PLA to make major shifts in its doctrinal thinking, to emphasize "firepower, synchronization, and economy of force."[625]

By 1985, the GLD's organization was not significantly different from that of the GRSD. In 1977, for example, (see Figure 6.1) the GRSD had ten subdepartments. It also exercised direct control over GRSD Enterprises and the Military-Industrial Complex and elements of the Service Arms (Railroad Engineers and Construction Engineers). Additionally, the GRSD coordinated with the Capital Construction Engineering Corps and had staff supervision over logistics support within the Main Forces and the Military Region.

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[625] Ibid., p. 10.

Figure 6.1 General Rear Service Department - 1977

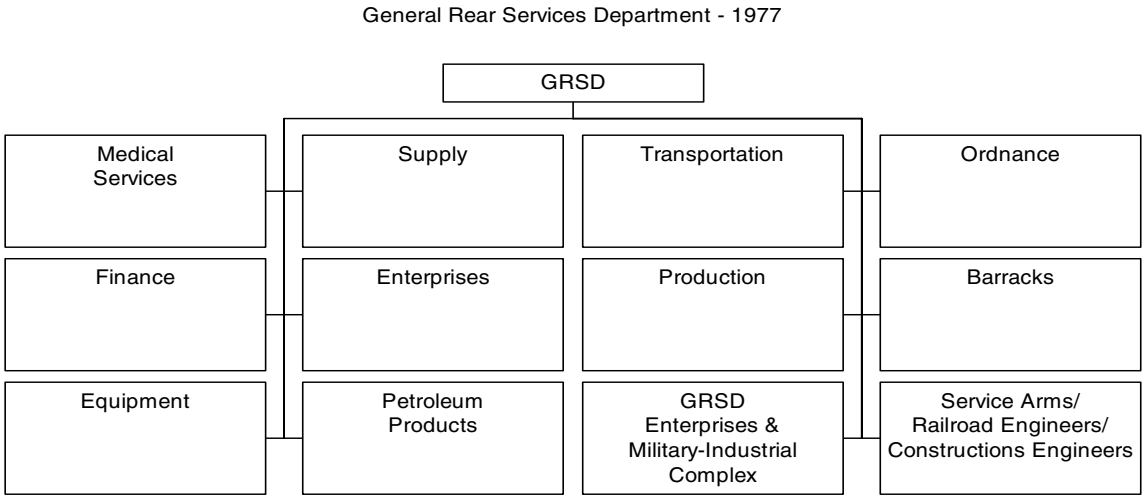

Figure 6.1, Based on Chart V, in Harvey W. Nelson, *The Chinese Military System*, Boulder, CO: Westview Press, Inc., 1981, which was, in turn, based on Gillespie and Sims, p. 194, and Jencks, Chapter 6.

By 1985, GLD consisted of ten subdepartments (Figure 6.2). Functional elements included – Armament, Finance, Fuel, Health, Military Supplies, Science and Technology, and Capital Construction and Barracks. The new Science and Technology Subdepartment, headed by Ye Daxun, was added to oversee acquisition and development of technological improvements, while the addition of the Capital Construction and Barracks subdepartment formalized and centralized GLD command and control.

Figure 6.2 General Logistics Department - 1985

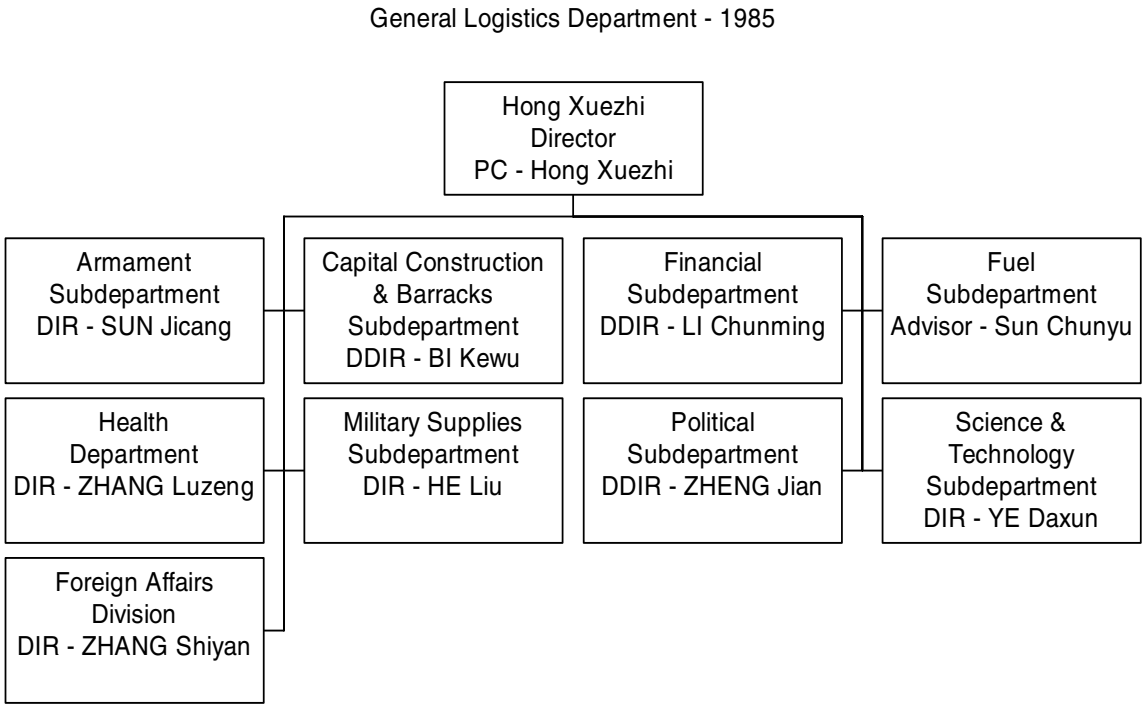

Figure 6.2 based on, *Directory of P.R.C. Military Personalities*, Defense Liaison Office, U.S. Consulate General, Hong Kong, April 1985, pp. 23-25.

Additionally, a Political Subdepartment and the Foreign Affairs Division, headed by Director Zhang Shinyan, were added. The latter provided an interface for the GLD's increasing business contacts with the outside world.

In 1986, the Production Management Subdepartment (PMD) was established in the GLD to manage PLA enterprises and businesses.[626] Production Management Offices (*Shengchan jingying banggongshi*) were created at each level of the PLA logistics system to oversee the management of "regional and unit-level conglomerates."[627]

By 1989 (Figure 6.3), the GLD staff expanded to include 15 subordinate elements: Armament Department, Capital Construction Department, Financial Department, Fuel Department, Health Department, Material Subdepartment, Military Supplies Department, Military Transportation Subdepartment, Political Department, Qinghaii-Xizang Army

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626 Mulvenon, *Soldiers of Fortune*.

627 Ibid.

Depot Subdepartment, Vehicles and Vessels Department, Foreign Affairs Office, HQ Department, Wuhan Base Command, and Xi'an Base Command.

Figure 6.3 General Logistics Department - 1989

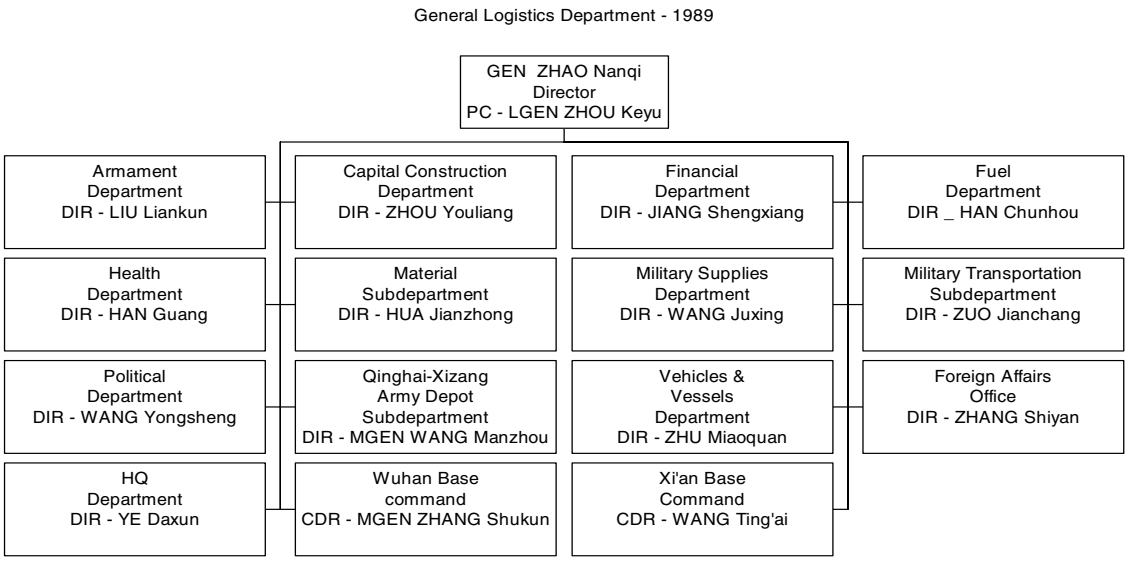

Figure 6.3, based on *Directory of P.R.C. Military Personalities*, Defense Liaison Office, U.S. Consulate General, Hong Kong, 1989, pp. 27-29.

1990-Gulf War; Taiwan Exercises (1995-96)

After the Tiananmen crisis in June 1989, the PLA logistics' traditional involvement in production and business significantly expanded, and the GLD staff grew accordingly to manage these highly diversified operations. In 1991 (Figure 6.4), the GLD had 20 subordinate elements: Armament Department, Capital Construction and Barracks Department, Finance Department, Fuel Department, Health Department, Material Department, Military Supplies Department, Military Transportation Department, Political Department, Qinghai-Xizang Army Depot Department, Vehicles and Vessels Department, Management Bureau, All-Army Land Management Bureau, Foreign Affairs Office, HQ Office, All-Army Birth Planning Office, Wuhan Base Command, Xi'an Base Command, Engineering General Unit, and Directly Subordinate Subdepartments.

Figure 6.4 General Logistics Department - 1991

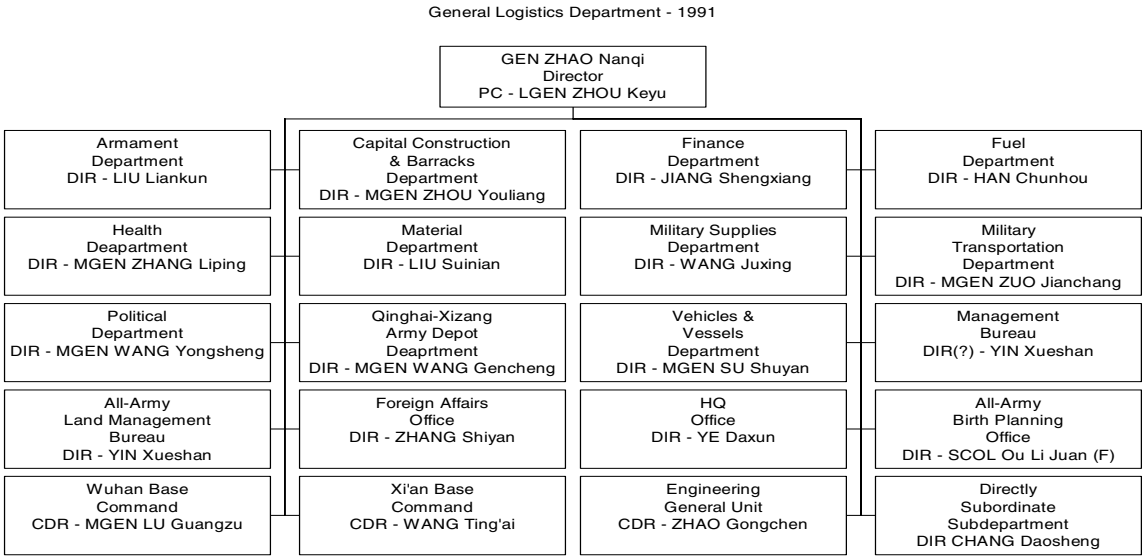

Figure 6.4, based on *Directory of P.R.C. Military Personalities*, Defense Liaison Office, U.S. Consulate General, Hong Kong, June 1991, pp. 20-23.

By 1994 (Figure 6.5), the GLD grew to 23 elements. Compared to the 1991 structure cited above there were several changes and additions. The Fuel and Material Departments were combined into the Material and Fuel Department, headed by Director Su Shuyan. The Military Supplies Production Department, Production Management Department, Army-Run Enterprise Bureau, Office in Shenzhen were added to manage the PLA's burgeoning business operations. The Military Mine Bureau, which oversees all precious metal exploitation, and Nenjiang Base were also added.

Figure 6.5 General Logistics Department - 1994

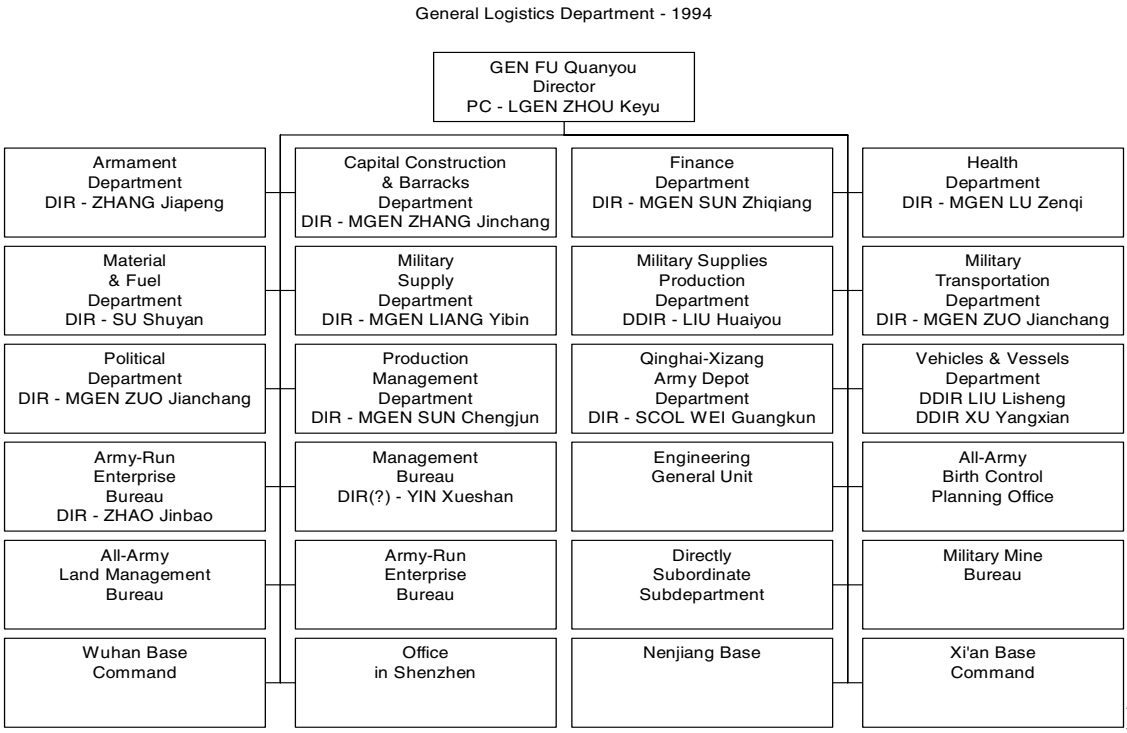

Figure 6.5 based on, *Directory of P.R.C. Military Personalities*, Defense Liaison Office, U.S. Consulate General, Hong Kong, October 1994, pp. 23-27.

Between 1995 (Figure 6.6) and 1996 (Figure 6.7), the GLD remained at 24 staff elements directly under GLD, but made some changes. First, the Military Mine Bureau appears to have been at least temporarily dropped from the GLD organizational chart. Second, a Headquarters Department (*Siling Bu*), under the Chief of Staff, Major General Yang Chengyu, was added. Also added was the Military Communications and Transportation Department (*Junshi Jiaotong Yunshu Bu*).

Figure 6.6 General Logistics Department - 1995

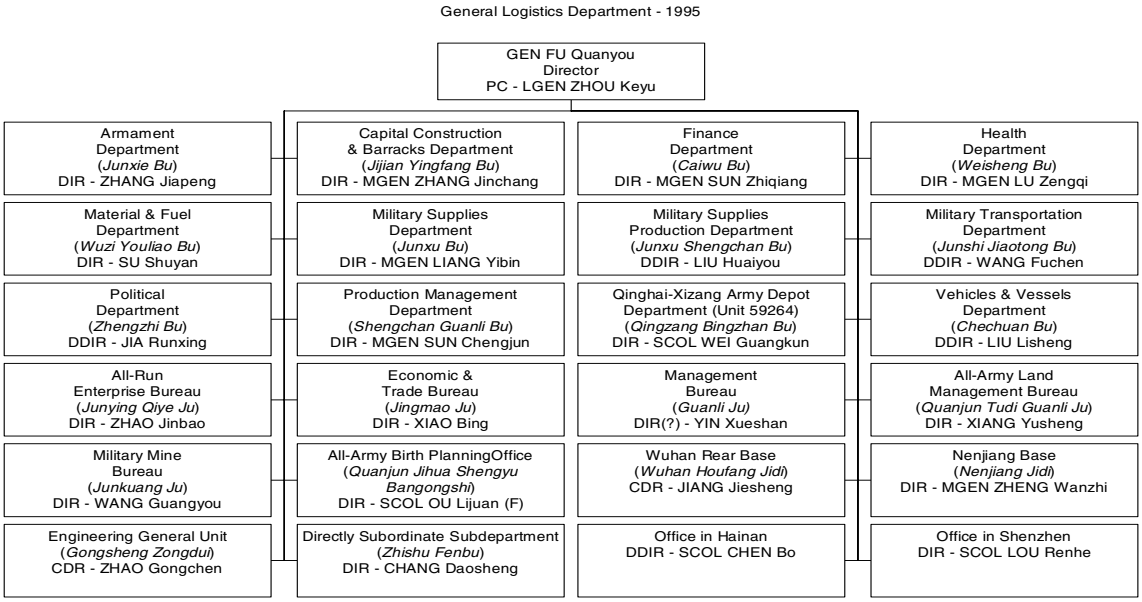

Figure 6.6, based on, *Directory of P.R.C. Personalities*, Defense Liaison Office, U.S. Consulate General, Hong Kong, October 1995, pp. 25-29.

Figure 6.7 General Logistics Department - 1996

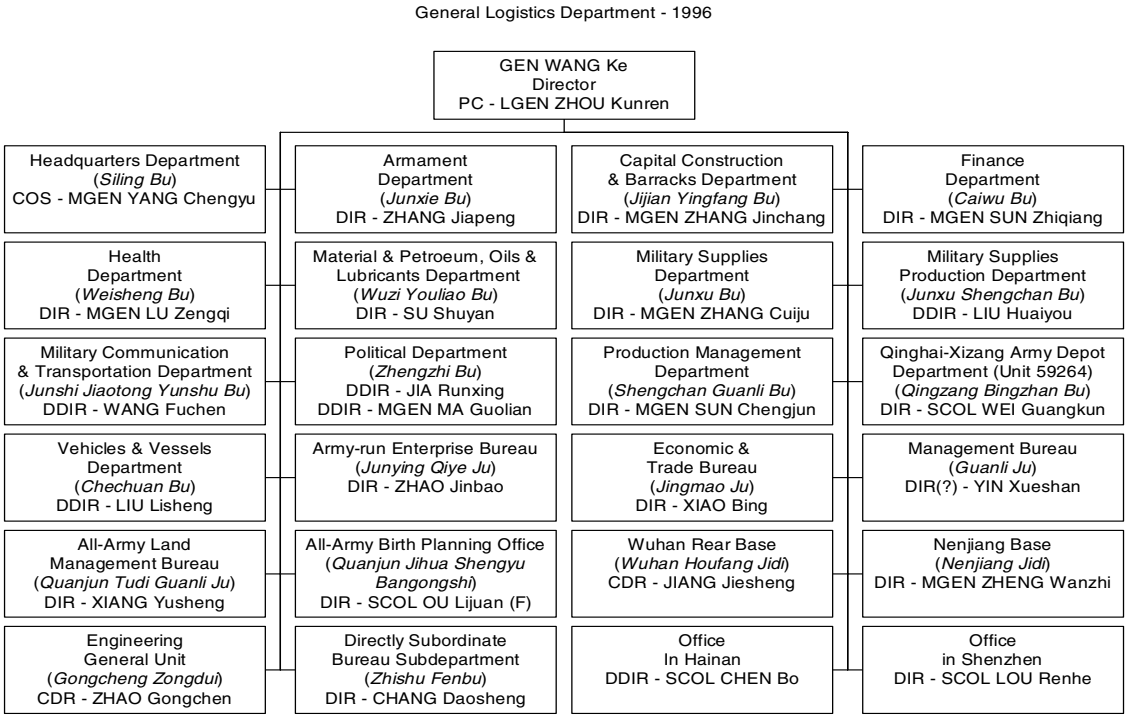

Figure 6.7 based on, *Directory of P.R.C. Military Personalities*, U.S. Consulate General, Hong Kong, October 1996, pp. 21-24.

In 1997 (Figure 6.8), on the eve of the order for the PLA to withdraw from business, the GLD, under General Wang Ke, reached a record size of 25 staff elements. Compared to 1996, the PLA General Hospital Number 301 was highlighted as a separate element of the Health Department. The Military Mine Bureau was once, again, shown as part of the GLD subordinate staff, but the Armament Department was removed.

Figure 6.8 General Logistics Department - 1997

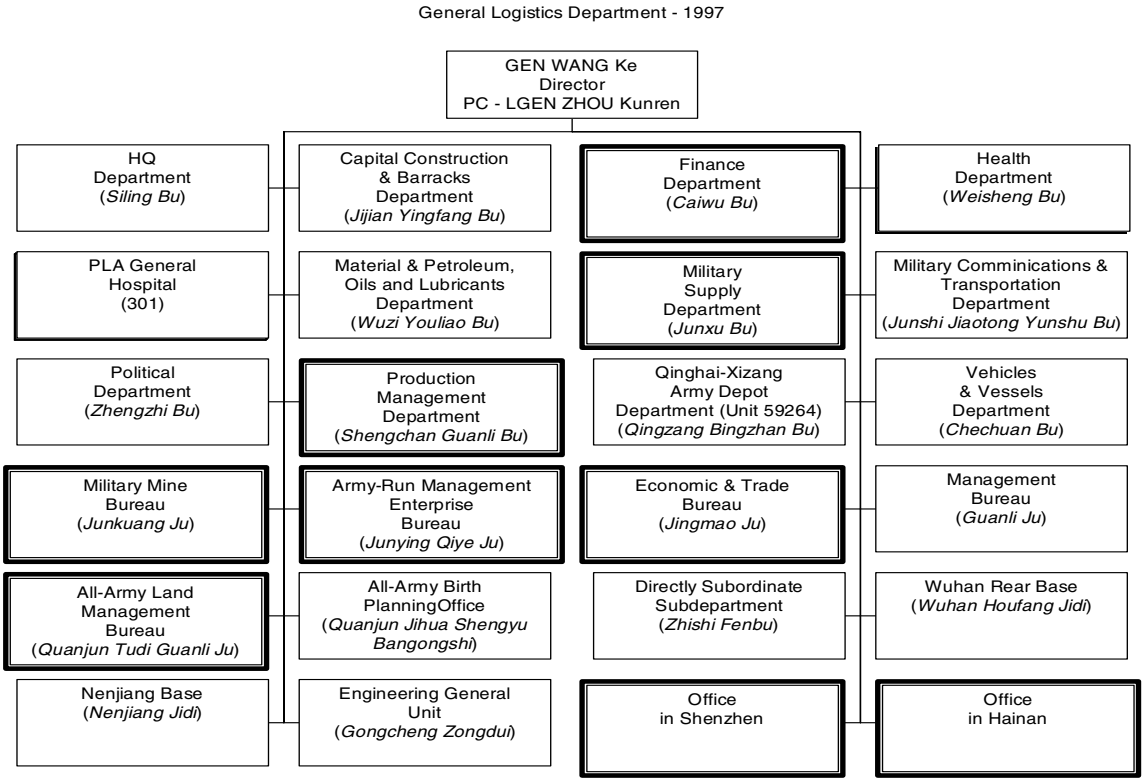

Figure 6.8, based on *Directory of PRC Military Personalities*, SEROLD Hawaii, Inc., Aiea, Hawaii, August 1997, pp. 25-27. Prominent business related staff are highlighted. See Mulvenon, *Soldiers of Fortune*.

In 1998 and 1999 (Figure 6.9), following the move to have the PLA withdraw from business, the GLD staff dramatically downsized back to early 1980 levels more consistent with its traditional span of control, although the Armament Department most likely remained under the newly created General Armament Department (GAD). Sixteen subordinate staff elements remained: the Headquarters Department, Capital Construction and Barracks Department, Finance Department, Health Department, PLA General Hospital (301) under the Health Department, Material and Petroleum, Oils and Lubricants Department, Military Supplies Department, Military Communications and Transportation Department, Political Department, Production Management Department, Qinghai-Xizang Army Depot Department (Unit 59264), All-Army Land Management Bureau, Military Mine Bureau, Wuhan Rear Base, Nenjiang Base, and the General Engineer Unit.

Seven staff elements associated with the megalithic PLA, Inc. that were eliminated included:

- Military Supplies Production Department (*Junshi Jiaotong Yunshu Bu*)
- Army-Run Management Enterprise Bureau (*Junying Qiye Ju*)
- Economic and Trade Bureau (*Jingmao Ju*)

- Management Bureau (*Guanli Ju*)
- Directly Subordinate Departments (*Zhishi Fenbu*)
- Office in Hainan
- Office in Shenzhen

The Vehicles and Vessels Department, which dated back to the early 1990s, may also have been removed from GLD, due to its business connection, or it may have been incorporated into staff elements within GAD.

The All-Army Birth Planning Office (*Quanjun Jihua Shengyu*), headed by Senior Colonel Ou Lijuan since its appearance in 1990, was also eliminated. This, however, had no effect on GLD command and control since it likely cut a non-operational and non-profitable administrative distraction.

Figure 6.9 General Logistics Department - 1998

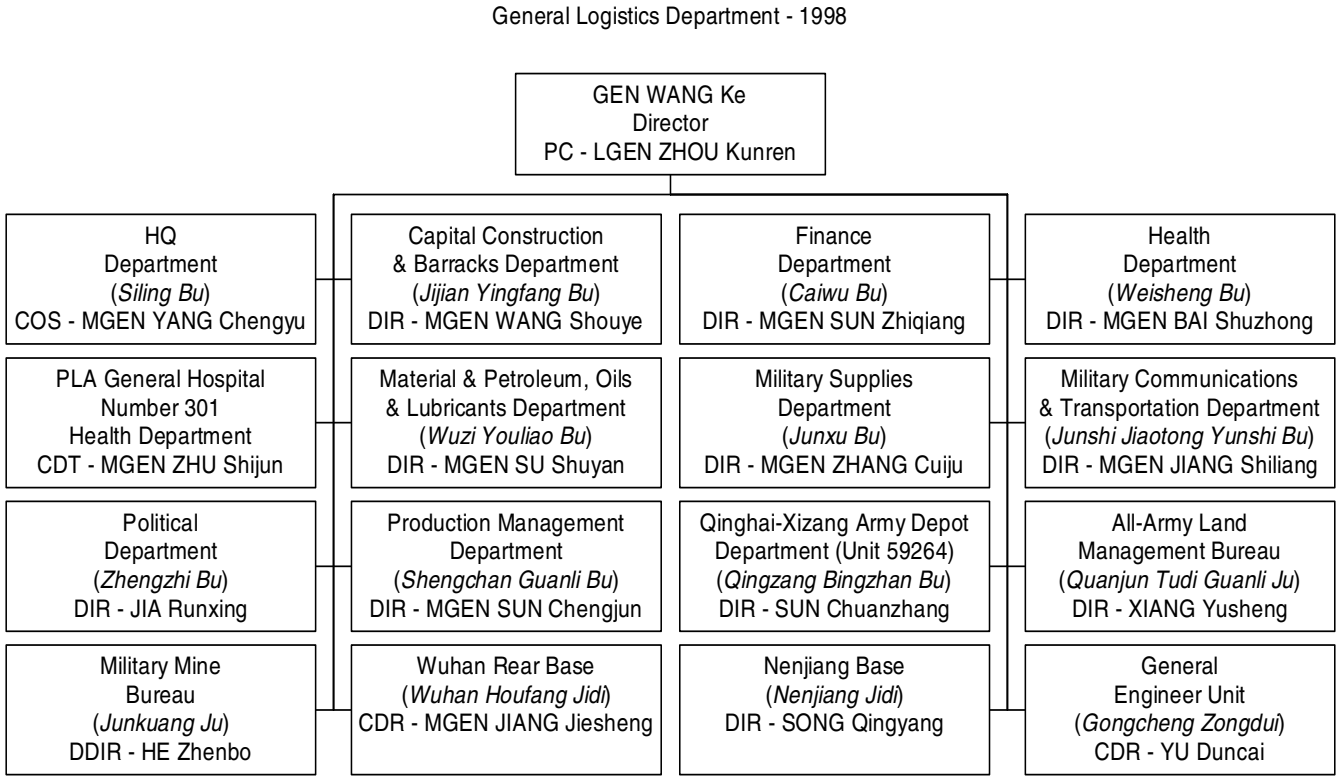

Figure 6.9, based on *Directory of PRC Military Personalities*, October 1998, pp. 24-28; and *Directory of PRC Military Personalities*, October 1999, pp. 24-25.

INTELLECTUAL INFUSIONS : EDUCATION AND TRAINING

Technological innovation, application, and production are essential to the transformation of the PLA's logistics into a modern joint logistics system. Without an indigenous production capability, however, foreign acquisition of technology and materiel can only

take the PLA so far. It may be possible to buy advanced materiel and equipment, but if operators and logisticians cannot provide adequate maintenance and sustainment, it will perform below its operational capability. Although this may prove good enough for a deterrent and/or response, the PLA clearly seeks to improve its logistics. Recognizing the importance of people to logistics innovation and high-tech efficiency and operations, the GLD has sent more than 2,000 people overseas to study in such areas as logistical command, medicine and health, logistical engineering, military economics, and linguistics. Since the early 1980s, over one half of all PLA people sent abroad to study have been sent by the GLD. They have been sent to over 30 countries, including the United States, Great Britain and Japan. In recent years, GLD scientists and technicians have also made over 6,000 trips overseas for academics exchanges and other short visits.[628]

Although the actual rate of return of GLD personnel who have studied abroad is not known, returned students and researchers have been credited with major contribution in military medicine, for example. One of China's historic challenges has been to effectively infuse the knowledge and experience of its returned intellectuals into its own modernization efforts. Too often returned intellectuals who could conduct advanced research and apply this to production and operations suffered sanctions upon return to China for their foreign connections, or were ignored. Even under the best of times, intellectuals often have found their research inhibited by poor working conditions, under-funding, and bureaucratic and/or political micro-management. If the GLD hopes to develop an effective joint support capability, it will have to depend upon its intellectual talent, as well as its increasing ties to civilian research institutions and universities to enhance its capabilities through experimentation and innovation. Its internal logistics academies (Figure 6.10) will also need to keep pace with advanced logistics technologies and methodologies, while developing indigenous solutions and innovations within its own conditions and capabilities.

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628 Zhang Dongbo, Yuan Ansheng and Feng Xiaosong, "Chinese Soldiers Marching Towards the World – Feature on Personnel in General Logistics Department Who Return From Studies Abroad," *Xinhua*, 28 Decmber 1999, in FBIS, 30 January 2000.

Figure 6.10 Military Logistics Acedemies and Universities

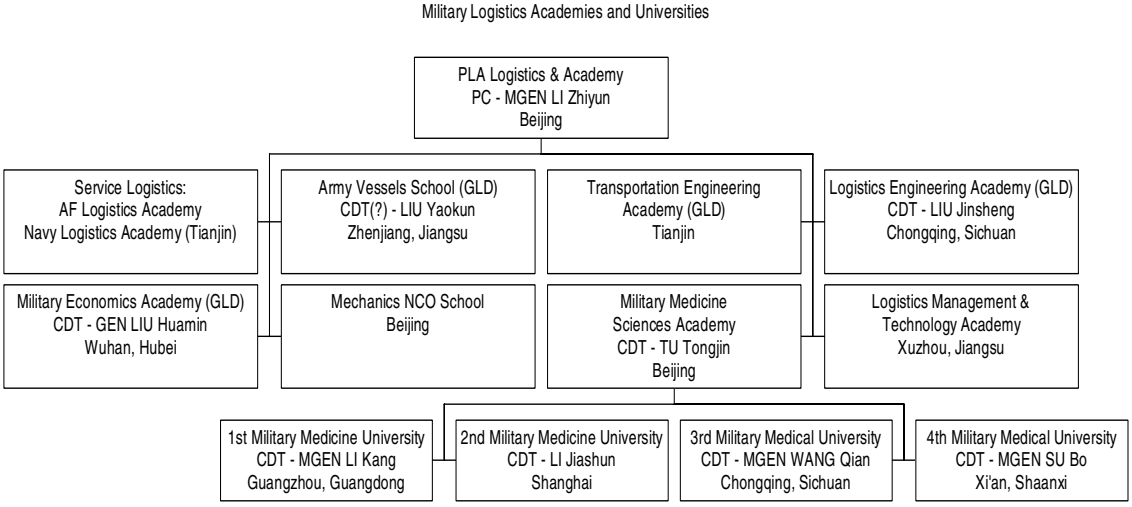

Figure 6.10, based on *Directory of PRC Military Personalities*, October 1999, pp. 201-211.

Chinese Military Diplomacy with Logistics Characteristics[629]

In addition to sending GLD personnel overseas to study, attempting to attract young intellectual talent into logistics work, and enhancing its ties to universities and relevant research institutes, the GLD, as part of an overall PLA diplomacy effort, has also actively sought to expand and deepen its understanding of advanced logistics operations through military-to-military contacts, such as functional exchanges and high level visits. General Wang Ke, Director of the GLD, and members of his staff have headed numerous logistics delegations to various countries, including the U.S. within the last several years. In addition, other members of the GLD have also been included in other visits. Delegation members are characteristically well versed and well prepared to learn from these visits. PLA personnel, including logisticians, characteristically ask very specific and insightful questions of their hosts that reflect a very specific and professional knowledge of all aspects of modern logistics within a high-tech environment.[630]

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629 Kenneth W. Allen and Eric A. McVadon, *China's Foreign Military Relations,* Washington, D.C.: The Henry L. Stimson Center, October 1999, pp. 34-37.

630 Based on discussions and personal experience with PLA delegations between 1996-1998.

Some observers assert that logistics may be one of the most beneficial areas of the PLA's foreign military exchange program over the last ten years. [631] It has also become one of the most sensitive areas, since it can directly enhance the PLA's power projection capabilities. In combination with the GLD's research of military logistics information readily available on the Internet and elsewhere, as well as international logistics exhibitions that China has hosted in Beijing in 1987, 1993, and, most recently, in May 1998, the GLD has collected extensive information for consideration in carrying out its ten year logistics modernization program.

LOGISTICS STRATEGY AND DOCTRINE

> "The focus of logistics support will shift from reliance on quantity to reliance on speed and information, making full use of the technologies of informationization and digitization and delivering an appropriate amount of resources to the front in the right place at the right time. The degree of precision of logistic support in terms of time, space, variety, quantity, and the deployment of strength becomes a sign of effective support." Cheng and Zhang, Logistics Command College, 2000[632]

After an initially stunned reaction, more sober assessments of the Gulf War in recent Chinese military writings have targeted deficiencies in U.S. logistical support. These analyses closely parallel American logisticians and operators own conclusions. Among the U.S. logistics shortfalls discussed in Chinese writings are: insufficient strategic mobility, high expenditure of munitions and other classes of supply, excessive time needed to establish sufficient stockage prior to start of operations, etc. [633]

Recognizing the operational and conceptual challenges of logistics support in a high-tech environment, but also understanding the realistic constraints the PLA's faces in modernizing its logistics support, reform since the mid-1990s has concentrated on increasing efficiency. To accomplish this, units have been exhorted to reduce or

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631 Allen and McVadon, pp. 35-36. See also *Xinhua* (English) on 25 and 28 May, 1998, regarding the China Military Logistics '98 Exhibition. Logistics '98 attracted over 300 companies from over 20 countries. Displays range from low-tech subsistence and other basic support items to high-tech equipment and materials. Like previous exhibition, the 1998 like the previous two, attracted numerous foreign logistics displays, ranging from low-tech subsistence to high-tech .

632 Cheng Kuaile and Zhang Ping, "Precision-Oriented Logistics: Objective of [the] Logistics Revolution in the 21st Century, *Zhongguo junshi kexue*, 20 November 1999, translated in FBIS, 4 February 2000.

633 See Michael Pillsbury, "Weaknesses in [U.S. Military] Logistics," in *China Debates the Future Security Environment*, Washington, D.C.: National Defense University, 2000, pp. 73-83.

eliminate lingering business operations, through "socialization" (i.e., civilianizing). Under the goal of establishing a joint logistics system, some types of common support, such as medical, petroleum, and ground vehicle maintenance are being consolidated as joint support operations for all Services.

Chinese military writers have paid attention to the U.S. Army concept of "focussed" and especially the U.S. Marines' concept of "precision" logistics. These American concepts developed from recognition that it took far too long to build up stockage for the Gulf War, while some supplies were duplicated or wasted because of tracking difficulties, and port distribution was hampered.

Influenced by its revolutionary heritage and its post-1979 business involvement, the PLA is challenged to support overall economic development, provide for the basic needs and quality of life of the soldiers and officers, continue approved military production, as well as support operational joint logistics.

In April 2000, General Wang Ke article's entitled "Less investment, higher efficiency" [634] discussed the key requirements of PLA logistics under President Jiang Zemin's modernization guidance, in order to accomplish its multifaceted goals:

- Joint logistics of the armed forces
- Standardization of military supplies
- Monetary system of officers' welfare
- Socialized logistics supply system
- Scientific management of logistics

While logistics reforms stress the essential need to realize efficiencies and civilianize logistics, all these efforts are ultimately focussed on improving joint logistics support to combat operations.

In addition to making major changes to internal logistics operations and developing an effective logistics system, PLA military writers have also evaluated ways to maximize their efforts by exploiting potential vulnerabilities of more advanced militaries' logistics systems. Using the U.S. military logistics in the Gulf War as a case study for analysis, the PLA has assessed how a weaker power might defeat or deter a stronger power by applying tactics under a strategy of defeating the superior with the inferior (*yiruo shengqiang*).[635]

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[634] Wang Ke, "On Strongly Promoting Logistics Reform to Raise the Economic Efficiency of Our Armed Forces," *Zhongguo junshi kexue*, 20 April 2000, pp. 6-11, in FBIS, 20 April 2000.

[635] See "Weaknesses in Logistics," pp. 73-83.

REFORMS AND RESTRUCTURING

Logistics Force Structure

In late 1999 General Wang Ke, GLD director, discussed the Central Military Commission decision to carry out a major overhaul of the PLA logistics system. The new structure integrates "fragmented logistics units" of the PLA Army, Navy, and Air force to provide regional joint support under the "joint battle zone logistics support" concept. Under the new joint logistics system, the "military regions' logistics departments and…branches…will be responsible for the unified supply of materials and…general services" to units within the three battle zones or where required. The joint logistics system is charged with providing "unified leadership, management, planning, construction, and use of…home-front facilities [such] as warehouses, hospitals and material stations" to support joint operations.[636]

Earlier in 1999, President Jiang Zemin signed the "PLA Joint Logistics Regulations," which was said to be "the single most crucial change in the PLA logistics support systems since the founding of the PRC." This system, which is the first time in its history the PLA will practice "joint logistics." By the end of 1999, General Wang Ke announced the PLA had reduced "7,600 military logistics forces" through a redistribution of logistics tasks in 850 units, which resulted in a savings of 80 million yuan.[637]

ROLE AND INFLUENCE OF THE GENERAL LOGISTICS DEPARTMENT

"Logisticians are 'unheroic, spineless, and sterile'." Hong Xuezhi[638]

The role and influence of logistics operations and leaders within the PLA has been unique to the PLA's history and its special relationship as the ultimate guarantor of the Chinese Communist Party (CCP). In the history of other militaries, such as the U.S., logisticians have played a secondary role to combat leaders. Logistics force structure is often the first to be cut or relegated to the reserves during budget cutbacks and force reductions, and significantly, no logistician has ever reached the level of Chief of Staff of the Army or Chairman of the Joint Chiefs of Staff. The role and influence of logistics within the U.S., consequently, has depended on the logistical awareness of combat leaders themselves.

Although an operational bias against logisticians also has existed in the PLA since its foundation, as Hong Xuezhi's quote above indicates, the influence of logisticians in

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636 *Zhongguo tongxun she*, 23 February 1999, in FBIS, 28 February 1999.

637 *Xinhua*, 7 December 1999, in FBIS, 7 December 1999.

638 Shu, p. 171.

the PLA has been complicated by the interrelationship between the General Political Department's Political Commissar system and support. Up until at least the 1980s, leaders of the GRSD and GLD moved back and forth between political and logistics assignments. At the lower levels a core of younger technicians did develop, but these logisticians have yet to assume top-level positions.

The heritage of politicized logistics from the Red Army period until at least the Cultural Revolution provided GLD leaders with a considerable degree of political influence. There is no indication, however, that this was translated into more resources and support, as one might expect in a Western military. It may, however, have provided the basis for sustained tolerance, even enthusiastic support, of escalating and diversified business operations throughout the 1980s and 1990s, despite signs of abuse and corruption.

Since the late-1990s, Jiang's order for the PLA to withdraw from business has resulted in a dramatic cut to the GLD staff. More than one half of its headquarters has been eliminated or reassigned. The creation of the General Armament Department (GAD) and the loss of the GLD armament subdepartment may further reflect a decline in the GLD's power and influence. If this assessment is correct, it remains to be seen how durable and significant (either as help or hindrance) this downsizing and withdrawal from business will be for the GLD to lead the effort to develop effective joint logistics for combat operations within the next ten years.

The GLD will likely continue to play a key role in the military budget through the finance office. It will also remain involved in some types and levels of production, and will still be in a position to take advantage of some business opportunities as it socializes logistics functions.

The GLD already has made significant progress in improvements in quality of life, monetization, etc. that directly affect the morale and quality of the PLA officers and soldiers. Now the challenge is to revolutionize logistics support to combat for a regional high-tech war context.

CONCLUSIONS - IMPLICATIONS

The weight of available information on the PLA modernization appears to support the prevailing analytical view that routinely stresses PLA weaknesses and shortfalls; perennial gaps between aspirations and implementation; and evolutionary (rather than revolutionary) change. Logistics is no exception. The unique link between logistics support and inefficient military and civilian state production, as well as the diversion of personnel and resources into self-sustainment, suggest that PLA logistics will be severely challenged to develop an effective joint logistics system within the next ten years. We should not count PLA logistics out of the high-tech support game just yet, however. The PLA/GLD leadership is taking appropriate steps in the right direction to realize this goal.

Based on its history of flexibility, adaptation, and continual improvement, PLA logistics has the potential to ruin someone's day in a regional crisis, and to effectively ensure deterrence during peace. PLA logistics may not be able to support a decisive large-scale war without major additional investment, but the PLA may be more successful in developing a modest, modern conventional force projection capability.

The PLA leadership does appear to fully realize the military shortfalls. They also understand how future wars will be fought. While making major improvements to the force, they will aggressively search for shortcuts and/or vulnerabilities that their less advanced military can exploit. They also will continue to demonstrate a mastery of the psychological dimension of national security. While displaying some selective transparency, they will continue to conceal their strengths and weaknesses. They continue to reassure regional and global powers of their peaceful intentions and insecurities. They also, however, will keep people guessing about the PLA's actual and future potential to underwrite a credible deterrent.

In many ways, this is an excellent time for China to pursue regional and international security objectives. It can enjoy the benefits of a divided American polity, and rather benign assessments of China's military potential and capabilities. This period of uncertainty outside China's borders can provide China and the PLA with continued breathing space to address internal problems and continue to enhance its comprehensive strength.

For analysts of China's military, only hindsight may likely settle any argument over how successful China will be in achieving its military aspirations, and what this mean for the U.S. and its allies, as well as regional powers. In the end, the PLA, including its joint logistics support, will do what it can with what it has at whatever cost it takes. This may or may not prove to be enough at the time it is needed.

We do know, however, that the PLA actively seeks a high-tech military capable of fighting a regional war, if necessary. We know China combs the world for military knowledge, materiel, and equipment that will help it fight a high-tech war. We also know the PLA extensively studies the strategy and operations of world militaries, including the U.S., which it has at least indirectly identified as a future opponent. These in themselves warrant fresh investigation, reflection, and debate over the development of PLA military operations that seriously considers the implications of even limited and focussed success in the development of its joint logistics and combat operations.

APPENDIX A LEADERSHIP

Yang Lisan (1949-53)
Huang Gezheng (1954-56)
Hong Xuezhi (1956-59)
Qiu Huizuo (1959)
Zhang Zhen
Zhang Congxun (1975)
Hong Xuezhi (1980-87); also PC 'til 1987
Zhao Nanqi (1988-92)
Fu Quanyou (1992-94)
Wang Ke (1995-present)

The current director of the GLD, General Wang Ke, was born in 1931 in Xiaoxian, Anhui Province. He joined the CPC in 1947. Wang Ke has some political commissar experience. He was a deputy political instructor of the Third Field Army in 1949. He participated in the Jiaozhou-Jinan counter-attack and Huai Hai Campaign. He served as a battalion commander in the Korean War in 1953. In 1956 he served concurrently as the deputy commander and chief of staff of an artillery regiment of the CPV in 1956. After the Korean War he served in various artillery-training assignments in the Beijing area and Lanzhou Military Region, including political commissar of the garrison division from 1972-1978. He was granted the rank of Lieutenant General in 1988, and promoted to General by 1994. He was identified as the Director of the GLD in 1995. Wang replaced General Fu Quanyou, who was promoted to Chief of the General Staff. Unlike previous GRSD/GLD directors and General Wang Ke, General Fu official biography does not reflect any political commissar positions. He commanded from the company to the army level, and served in numerous chief of staff positions. He served in Korea as a battalion commander during 1953-56. See *Who's Who in China: Current Leaders*, Beijing: Foreign Languages Press, 1989, and *Directory of P.R.C. Military Personalities*.