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**CIVIL-MILITARY RELATIONSHIP
AND REFORM IN THE DEFENCE INDUSTRY**

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ABSTRACT

Three factors have contributed to China's defence industry reform. They are Deng Xiaoping's resolute will to push defense industry reform, overall reform toward market economy system and the military's consciousness for the need of the defence industry reform. As time has gone by, direction for China's defence industry reform was gradually defined, and that created an environment conducive for innovation and to adapt to the changing economic environment. Many measures have been adopted, and the core idea being a gradual increase in competition in the economic sector. The implication for the civil-military relationship is that there might exist a consensus in both civilian and military sectors with regard to defence industry reform.

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CIVIL-MILITARY RELATIONSHIP AND REFORM IN THE DEFENCE INDUSTRY

Since the 1980s after the economic reform had started, China has gradually reformed its defense industry system. The purposes of the reform were two-fold. The first was to make the defence industry system more adaptable to the changing economic environment, namely the gradual move toward a market economy. The second, as a more recently announced goal, was to make the defence industry system more innovative so that China can indigenously manufacture advanced weapon systems without relying on imports from Russia or any other country. Actually, the two purposes are inter-related.

The Chinese leadership has known very well the deficiencies of their defence industry. Under the central command economic system of the pre-reform era, China's defence industry was characterised by compartmentalisation with serious self-sufficiency redundancies. The end results had been over-capacity in production capability, shortage of competition, lack of horizontal integration among different defence industries and lack of innovation in manufacturing advanced weapon systems.

Western research on China's defense industry reform has been extensive.¹ However, most of their research focused on one point: defence industry conversion, a policy initiated in the late 1970s by China's former chief architect, Deng Xiaoping, to diversify the defence industry system to produce civilian products. Despite the fact that these works have provided detailed analyses on how China implemented the conversion and its impacts, no overall picture has been provided to illustrate what direction Chinese leadership has planned for their defence industry and armament system as well as how this change was brought about.

This paper has three purposes. They are to exam factors impacting defense industry system; to investigate what reform measures have been made; and to consider the implication to the civil-military relationship.

It should be emphasised that this research focuses on the traditional defence industries rather than newly emerged high tech fields. The traditional defence industries denote the traditional "Big Five" fields, including shipbuilding, ordnance, nuclear, aviation and aerospace; while

¹ For instance, Paul H. Folta, *From Swords to Plowshares? Defense Industry Reform in the PRC* (Boulder, CO: Westview, 1992), John Frankenstein and Joern Broemmelhoerster(eds) *Mixed Motives, Uncertain Outcomes: Defense Conversion in China* (Boulder, CO: Lynne Rienner, 1997), and Mel Gurtov, "Swords into Market Shares: China's Conversion of Military Industries to Civilian Production," *The China Quarterly*, No. 134 (June 1993), pp. 213-241.

information, telecommunication, biotech and optoelectronics are left out. The defence industry conversion in the “Big Five” has been made since 1980s, while in the high-tech area, there have been the “863” and the “super 863” programmes.²

Market Factor

After more than twenty years of economic reform toward the market system and integration with the world economic system, market factors have affected China’s defence industry and armament system, and China has made corresponding adjustments.

Chinese defense planners have realised that under the market economy system, defence economic system is part of, and is heavily influenced by the market economy system.

The operation of defense economic system aims at meeting the goal of defense need. Under the guidance of state planning and market economy, manufacturing, exchange, allocation and consumption of defense products have formed a cycle. Like the operation of civilian economy, defense economy also involves objectives, actors, and operation mechanism. The defense economy is a rather independent operation system.³

This implies that defense economy have been regarded as part of market economy, though it is not of a purely market system.

If the defence economy is part of a market economy, and defence items are regarded as commodities, it is necessary to distinguish suppliers and consumers, and to establish relevant norms:

... under the socialist market economy, if defence items are commodities, there is a need to establish market for the defence items, and it is required by the objective need of market economy system. ... In order to establish a genuine market for defence items, it is necessary to distinguish suppliers and consumers as the first step. No real market can be developed if no such distinction is made.⁴

The supplier-consumer distinction will have consequential effect on the behaviour of both actors. Chinese defense planners have realised that if the military can identify themselves as consumers, and is offered sufficient authority and responsibility, then the military sector will

² For an excellent analysis on the “863” program and China’s high tech areas, see Evan A. Feigenbaum, *China’s Techno-Warriors—National Security and Strategic Competition from the Nuclear to the Information Age* (Stanford, CA: Stanford University Press, 2003).

³ Yu Liankun, *Zhongguo guofeng jingji yuxing yu guanli* [China’s Defense Economy: Operation and Management] (Beijing: NDU Press, March 2002), p. 10.

⁴ [Unless otherwise noted, all discussions on the concept of supplier-consumer are drawn from](#) Yu, *ibid*, pp. 40-68.

Deleted: For related discussion, see

act like a resource allocator, spending limited resource in more efficient and efficacious way. The distinction will also bring positive effect toward suppliers, making Defense Industry Enterprises (DIEs) truly responsible for profit and loss.

The Chinese also realised that government function has to be adjusted under the market economy system. The Government has to handle macro policies, i.e. the institutionalisation of the armament industry system. This includes systems of decision-making, policy implementation, and policy oversight. Reform in the armament industry system is part of the overall administration reform programme in the context of the deepening market economy system.

Furthermore, China is also aware that suppliers of defense items can be opened under a market economy. “Market economy will facilitate the opening up of suppliers, allowing non-state own enterprises (SOEs) to be involved in the production of defense items except some special cases”. The conceptual change may break up the established monopoly of defence items supply, allowing new suppliers of non-SOE to become defence suppliers. As a result, a mechanism of competition on defense market will hopefully emerge.

In fact, defence related reform has been put in line with China’s economic reform. Liu Huaqing’s memoir indicates this trend. He says:

On June 17, 1988, after several rounds of discussion in the military, the ‘Working Outline for Boosting and Deepening Reform in the Military’ was formally promulgated. The outline points out that ...Continuous deepening reform in the domestic economic and political areas has required the military to take appropriate measures for its military construction and reform.⁵

This indicates that Chinese military knew well that defense industry sector had to be reformed to be line with economy included transformation.

Reform of SOE in the Late 1990s

Defence Industry Enterprise (DIE) was of SOE, and any SOE related reform applied to the DIE. Reform of SOE could be attributed to the adoption of a market economy oriented reform since 1980s. In general, reform of the SOE in the late 1990s was directed toward building modern business management systems. The purpose was to address the real problems constraining the development of SOE, which include tackling the SOEs’ property right issue so that the SOE could be responsible for profit and loss. Reform in the late 1990s

⁵ *Liu Huaqing Memoir* (Beijing: Liberation Army Publisher, August 2004), p. 554

was different from those done in the previous years which focused on offering SOEs incentives without tackling property right.⁶

Beginning in November 1994 and based on modern business management system, China started to reform the SOE. The purpose was to establish a modern business institution. Specifically speaking, it emphasised that there should be a property right system with clear rights and responsibilities, politics should be separated from business management and a scientific approach should be pursued in business management. The new reform measures were applied to the defence industry system.

To be more precise, a modern business management system denotes the establishment of corporation system. In other words, the new reform measure aimed at transforming SOEs through asset re-assessment and delineation of property right so that SOEs could be completely transformed. Moreover, Chinese leaders expected that transformed SOEs to absorb capital from other private or government sectors and to be eventually completely responsible for its own profit and loss. It was also expected that the overall economic structure could be improved through this kind of reform.

The reform measure was further confirmed in September 1999. At the 4th Plenary meeting of the 15th Party Congress, the resolution on “CCP Central Decision on the Major Issues of the Reform and Development of SOEs” pointed out that multiple sources of capital are conducive to the normative development of corporation governance, and that except for a few SOEs that have to be monopolised by the state, there was a need to actively develop corporation with multiple sources of capital investment. Under the policy of multiple sources of capital investment, the private sector could invest in large and medium SOEs, while regular state monopolised SOEs [*guo you du zi gong si*] should be jointly invested as much as possible by other SOEs.

In addition, some other measures were adopted to bolster the SOE transformation. These included export tax return, anti-smuggling action, stepping-up bankruptcy and merging, establishing social welfare/support system, lower bank loan interest, practicing debt-to-equity and increasing technology investment for SOEs. The purpose for these measures was to create a favorable external environment so that large and medium SOEs were able to

⁶ For the content of the late 1990s reform of SOE, see Yuan Gangming, “Guoyou qiye gaige zhengce: zhuanxing yu tuokun” [SOE Reform Policy: Transformation and Bail-out], in Chinese Academy of Social Science Public Policy Studies Center and Hong Kong City University’s Public Management and Social Policy Center (eds), *Zhongguo gonggong zhengce fenxi 2001* [Analysis on China’s Public Policy, 2001] (Beijing: CASS Publisher, January 2001), pp. 75-95. It should be noted that the period cited here started from 1994 when China attempted to build up modern business management system.

establish a modern business management system, and could be bailed out of money loss situations.⁷

Reform of Science and Technology System

The market oriented economic reform also resulted in change in science and technology (S&T) systems, which, in turn, brought necessary reform on the defence industries. The “Big Five” systems were all of SOEs, and they had many scientific and technological research institutes. Therefore, S&T reform heavily affected the defence industry.

The purpose for China’s S&T reform was to address a chronic problem, namely to integrate S&T with economic need so that S&T can serve economic need and be tied with industrialization. It was also important that continuous S&T innovation was strengthened and that new mechanism for transforming S&T result into market products could be formed. With these desired goals, China hoped that they could cope with the rapid development of S&T and increased competitiveness in the world.⁸

The mid-1990s was a turning point period for China’s S&T reform. Prior to that period, like those of SOEs reform, S&T reform focused more on offering incentives, including to allow S&T units to adopt responsibility system and S&T personnel to transfer to other sectors. Other incentives were the establishment of the technology market; adopting new appropriation system for different types of S&T units, encouraging the establishment of private S&T enterprises, integrating S&T institutes with business groups, or having S&T institutes merge with business groups, as well as undertaking asset re-assessment of the S&T institutes.

However, the above S&T reforms were not been able to tackle the critical S&T development problem since 1949. That was the separation of S&T development from the economy. There was no doubt that the Chinese government had invested tremendous resources on S&T development. Nevertheless, all indicators pointed out that under the central command economic system, all S&T investment had been unable to meet industrial demand; it had been a S&T policy resulting in no industrial products for civilian purpose.⁹ Under this

⁷ It should be emphasized that it is difficult to measure to what extent these measures could really bail money loss SOE out. At least, it would take many years rather than three years as stated at the executive branch report made to the 9th National People Congress held in March 1998.

⁸ The content of S&T reform in this section is cited from Hanpo Wang, “Keji zhengce: shishi kejiào xingguo zhanlue” [S&T Policy: Implementing the Strategy of Bolstering the Nation through Scientific Education], *Zhongguo gonggong zhengce fenxi 2001*, *ibid*, pp. 150-183.

⁹ Evan Feigenbaum’s research points out that China’s process for developing A-bomb, missiles, and satellite has been able to meet modern high tech management style. For instance, peer review process was adopted. However, it was policy demand oriented and it was adopted regardless of any cost. This approach was different

circumstance, China had to import many products, equipment and technologies to meet social and economic demand. This separation had created tremendous resource waste and had made China unable to accumulate capital for further S&T development.

China launched a new round of S&T reform in 1999. The purpose for this round of new reform was to enhance China's S&T competitiveness under the trend of globalisation and to reverse the chronic institutional problem. To be more specific, three goal were set for the new round of S&T reform, and they were: to strengthen technological innovation, to develop high-tech products, and to realise industrialisation of S&T products. All measures were endorsed for achieving the three goals.

Major reform measures have been adopted since the 1999. These included concentrating national resources to pursue breakthrough of S&T development, having high-tech help facilitate the upgrade of traditional industries and making enterprises the main agent for technological innovation and to upgrade enterprises' innovation capability. Other measures consist of stepping up institutional reform of S&T institutes, allowing S&T institutes to integrate technology development with economic and social demand, selectively provide support to high tech development areas and making these areas major bases for innovation and export. Furthermore, equally important reforms are seen in tax and financial incentives, the development of private S&T enterprises and the revision of relevant regulations and rules for performance evaluation and awards.

The Military's Attitude

This involves the impact of civil-military relations on defence industry reform. The Chinese military has been perceived as a powerful system able to thwart whatever measures adopted by the top leaders. In fact, this was not the case for defence industry reform. At least, it seems that the Chinese military does not have different opinions with regard to defense industry reform. This can be attributed to several reasons. The first was the Deng Xiaoping factor. Deng was determined to push economic reform as the first priority, placing defence modernisation as the last of the Four Modernization programme. Under Deng's instruction, defence industry reform through the defense industry conversion has to be executed despite that this reform was likely to bring un-certainty.

Liu Huaqing's memoir vividly articulates the Deng Xiaoping factor. According to Liu:

from that modern high tech business, in which production cost and market identification have to be taken into consideration. See Feigenbaum, op. cit.

In July 1978, after hearing report by the Fifth Machinery Industry Ministry (later, Ordinance Ministry), he (Deng) instructed, the road that we are taking is, under the state's unified planning, to take the military as the priority and to combine civilian and military. The general principle is to have half of factory employees involved in civilian products. This path is correct." "It is not a matter of the Fifth Machinery Industry Ministry, but also for Third Machinery Industry Ministry (later, Aerospace Ministry). The Fourth (later Electronics Ministry) and Sixth Machinery Industry (later Shipbuilding Ministry) Ministries are of civilian-military integration.¹⁰

The second reason was problems and flaws found by China regarding their own defence science and technology system. Chinese military leadership had in-depth understanding of the problems and flaws and indicated that reform in this sector needed to be done as early as possible, before the technological distance between China and advanced countries further widened.

Liu Huaqing clearly points out these problems in his memoir. In portraying the need to set up the CMC Commission for Science, Technology, and Equipment in November 1977 as a planning and coordination body, he says:

...Management system at that time was compartmentalized, and chaotic, and there were four horse dragons within the military... Horizontally, it was separated between conventional and advanced (weapon), as well as in-military and contract out; in the whole process of program development including scientific research, test, production, procurement, allocation, storage, maintenance and repairment, and phase-out, each relevant military agency was responsible for certain parts, Defense Science Commission and Defense Industry Office for the first part (not explicitly specified what is the first part), the General Staff Department does the mid-parts (not explicitly specified what is the mid-parts), the General Logistics Department for the end portion (not specified what is the end portion). This kind of compartmentalized management not only hampered horizontal coordination, but constituted serious obstacle for the life cycle management. It was not favorable to raise efficiency, to shorten time period needed for R&D, and to save resources.¹¹

According the *Liu Huaqing Memoir*, he made several recommendations with regard to defense S&T system. His main recommendation was to centralise all R&D&production in one agency. He points out that, ". . . with the fact that this nation's industrial system is

¹⁰ *Liu Huaqing Memoir*, op. cit., pp. 380

¹¹ *ibid*, p. 383.

transitioning into a true business entity, the administration system of the defense S&T & equipment has to be centralized".¹²

After the establishment of the COSTIND in 1982, Liu Huaqing continued to indicate the problem in the administration system. He says:

After the establishment of the COSTIND, unified management of research and development as well as production of arms and equipment has been accomplished. However, some defense industrial units have not been integrated with the COSTIND yet, and this needs to be further resolved. There are still some major problems between research and development administration units and end users, between defense industry and civilian industry systems, and this needs unified leadership and organization coordination...Only R&D, production, and end users work together closely, smooth development of arms and equipment of our Army can be assured.¹³

The third reason had to do with the fact that the military and defence industry were actually of two different systems, although they were both under the military umbrella. Unlike the defence industry system, which was likely to have suffered as a result of defense industry reform, the Army's position was simple and straightforward, that is as long as advanced weapon and equipment could be delivered, they, as end users, supported whatever reform was taken in the defence industry system.

New Framework of Armament System

Affected by the market oriented SOE and S&T reform, beginning in late 1990s, China launched a large scale overhaul of its armament system, and a new armament framework was emerging since that period.

In 1998, an organisational adjustment started from the official armament administration. The adjustment contained three elements. The first was to establish a General Armament Department (GAD) under the highest military authority, the Central Military Commission (CMC). Established on 5 April 1998, the GAD is responsible for integrating the all army's S&T research and development, test and evaluation, and the military's arms procurement. The GAD was devised by merging all the test, evaluation and rocket launch units of the old Commission of Science, Technology and Industry of National Defense (COSTIND),¹⁴ the General Staff Department (GSD)'s Equipment Department, and arms export units.¹⁵

¹² *ibid*, p. 384.

¹³ *Ibid*, pp. 386-387.

¹⁴ The old COSTIND, established in 1982 by merging the CMC's Defense Science Commission and the State Council (SC)'s Office for National Defense Industry, was responsible for R&D, test, evaluation and production

The second was to reform the old COSTIND and to further separate politics from enterprises in the defence industry sector.¹⁶ The new COSTIND, carrying the old name after being reformed, has become a purely civilian agency under the State Council. It has not led all the DIEs any more under the separation principle. Its mission has become to oversee the production of military items, help DIEs undertake conversion and conduct product standards setting. In other words, the authority of the new COSTIND has declined and it has become a regulatory and planning agency.¹⁷

The third was to re-structure DIEs, and the step was taken from March 1998 onward. The main step was to split each of the “Big Five” into two relatively equal enterprises groups. The original “Big Five” were China Nuclear Corporation, China Shipbuilding Corporation, China Ordnance Corporation, China Aviation Corporation and China Aerospace Corporation.

The new ten groups are: China National Nuclear Corporation, China Nuclear Engineering and Construction (Group) Corporation, China State Shipbuilding Corporation, China Shipbuilding Industry Corporation, China Aerospace Science and Technology Corporation, China Aerospace Science and Industry Corporation (re-named in September 2001 from China Aerospace Mechanico-Electronic Group Corporation), China Norinco Group Corporation, China South Group Corporation, China Aviation Industry Corporation I and China Aviation Industry Corporation II.

A new armament system started to emerge after the above three-element reform. The China’s constitution stipulates that the State Council (SC) is responsible for leading and managing defence construction, the CMC for leading the nation’s armed force. Atop of them is the CCP Politburo, and below the two is the State Special Commission (SSC).¹⁸ The predecessor of the SSC was the Central Special Commission (CSC), which was formed in the 1960s and who reported directly to the Politburo. The CSC was likely to be demoted into the

of defense S&T, served as a bridge between defense industry sector and the military to assure that the military’s need could be met. It was under the dual leadership of the CMC and SC. For a description of the old COSTIND’s functions, see *Dandai zhongguo deguofang keji shiye* [The Development of Contemporary China’s Defense Science and Technology] (Beijing: Dandai zhongguo Publisher, 1992), pp. 133-134.

¹⁵ For an analysis on the organization of the GAD, see Harlan Jencks, “The General Armament Department,” in James C. Mulvenon and Andrew N. D. Yang (eds), *The People’s Liberation Army as Organization* (Santa Monica, CA: Rand, 2002), pp. 273-308, and Jencks, “COSTIND Is Dead, Long Live COSTIND ! Restructuring China’s Defense Scientific, Technical, and Industrial Sector,” in James C. Mulvenon and Richard H. Yang (eds) *The People’s Liberation Army in the Information Age* (Santa Monica, CA: Rand, 1999), pp. 59-77.

¹⁶ The reform idea had its origin at the 15th party congress held in October 1997. At the congress, the Chinese leaders announced to reform defense industry sector included SOEs in large scale in three years so that China’s economic system could be moved further toward market system.

¹⁷ *Ta Kung Pao* (HK), April 30, 1999, p. A4, and *Wen Hui Pao* (HK), July 1, 1999, p. A2.

¹⁸ This author wants to thank Dr. Evan Feigenbaum and Dr. Harlan Jencks for discussing this issue in e-mail communication, in September, 2004.

SSC in the 1980s. After being demoted, the SSC did not directly report to the Politburo anymore. Rather, it is now under the dual leadership of the SC and the CMC. The General Office [*bangongting*] of the new COSTIND is responsible for the routine work of the SSC.

Organised jointly by the SC and CMC, the SSC, is at present responsible for providing recommendation to the SC and the CMC with regards to new defence S&T projects. The Politburo, the SC, the CMC and the SSC constitute the decision making body for armament related policy.

Many government agencies implemented the armament related policy. These included the GSD, GAD, the General Logistics Department (GLD), the new COSTIND, the State Reform and Development Commission and the Ministry of Finance. Of these agencies, the GAD and GLD are more important, because both departments are charged with planning, programming and management of the armament policy, as well as implementing acquisition and procurement (A&P)¹⁹ for the whole army. The new COSTIND is charged with the responsibility of making plan and overseeing production, along with standard setting.

The new armament system separates supply from demand. The GAD represents the demand side of the Chinese military.

In 1998, a major reform on arms procurement system was made. Representing the demand side, the GAD was organized to be in charge with the military's arms procurement under the CMC by pulling together relevant procurement units previously dispersed among different general departments. The military's armament procurement is under the sole jurisdiction of the GAD; the new COSTIND is responsible for planning and overseeing production. From the perspective of A&P, the most important significance of this reform was to completely separate A&P from R&D and production side, identifying supply and demand sides in arms procurement. Though further work needed to be done, a major step toward market economy for our procurement system of military items has been made.²⁰

The supply side of the military items market was gradually institutionalised after the establishment of the new COSTIND and the ten defence industry companies, as well as the adoption of the license system (which allows non-DIEs to produce military spare parts and components for the final assembly of weapons and equipments by prime defence contractors composed mainly of the ten defence industry corporations). The new COSTIND has not

¹⁹ The Chinese military uses the term *caiban* to indicate acquisition and procurement (A&P) process. It includes R&D, production, procurement, maintenance and retirement of weapons and equipment.

²⁰ Yu Liankun, *Zhongguo guofeng jingji yuxing yu guanli* [China's Defense Economy: Operation and Management] (Beijing: NDU Press, March 2002), p. 192.

commanded the defence industry corporations and only played the role of planning and regulatory functions. These changes have made the ten companies and licensed non-DIEs armament suppliers. Under the condition of the separation of politics from enterprises, DIEs could be transformed into business entities responsible for own profit and loss.

Competition mechanisms were expected from the most recent reform. Liu Jibin, the former COSTIND chairman, plainly pointed out this direction. He said:

It was expected that each of the ‘Big Five’ was split into two relatively equal business entities, and performance could be improved through appropriate competition. The new business entities, as entities responsible for own profit and loss, have to change the long held mentality of ‘special status of the defense industry,’ seeking survival and development in the market competition.²¹

Liu’s remark implied that consciousness on facilitating competition in the defence industry has been reached among decision makers, though real competition has not been practiced by those prime defense contractors.

License System

The establishment of the license system could break down the monopoly previously given to the DIEs. Such a change resulting in the armament system gradually being incorporated into a market economy system in the past two decades since reform started in 1980s. If the notion that competition can facilitate progress is acceptable, as a logical, supplier market, except very special items, should be opened to other non-DIEs which make their own decision if they want to be a supplier in accordance with their own capability assessment.

A remark made by a vice chairman of the new COSTIND, Yu Zonglin, pointed out the above stated trend. He said

Allowing civilian technological and industrial resources to participate in defence construction as well as encouraging and promoting civilian enterprises’ superior technology to produce military items...will create substantial significance for further breaking through the closeness of traditional defense industry community, reducing redundancy, facilitating mechanism reform in the management and operation of R&D and production, stepping up orderly competition in the armament market, and pushing for the institutionalization of combining military with civilian sector.²²

²¹ *Wen Hui Pao* (HK), July 1, 1999, p. A2.

²² “Zhongguo jiang jiakuai shishi wuqi zhuangbei keyan shengchan xukezheng zhidu” [China will speed up the pace for the establishment of license system of R&D and production of weapons and equipments], in <http://big5.china.com/gate/big5/military.china.com/zh_cn/head/83/20040402/11658110.html>.

Chinese strategic analysts agreed that this step has to be taken. Yu Liankun observed that:

As [the] socialist market economy system in our nation evolved, the circumstance that monopolized defense production by SOEs has to be broken down. In the area of defense production, except very few SOEs which are strategically important or cannot be responsible for [its] own profit and loss, all types of enterprises should be permitted to participate in the defense production. Doing so is conducive to improve economic performance and in line with economic principle.²³

Another COSTIND vice chairman, Zhang Huazhu, in particular, made remarks from the perspective of cost and effect. He said:

In the past, our nation's R&D and production was monopolised by DIES. Its pattern was that project was decided by, money was provided by, and products were received by the state. Under this pattern, there was no initiative and energy for R&D and production in some DIES and large volume of money and manpower was wasted. If some military items can be procured from private sector, large amount of cost could be saved.²⁴

Zhang Huazhu especially pointed out the awkward situation encountered by China's defence industry, and emphatically indicated that it had something to do with the monopoly system in the past.

As reform of our nation's market economy deepened, DIES as the favorites of the command economy all became money losing business[es]. According to the SC's No 7 Document of 2002, DIES in the southwestern region are [going] bankrupt[t] [on a] large scale. In Sichuan Province, of the more than forty DIES and more than twenty defense industry units, seven enterprises have been listed in the bankruptcy plan, four have been in the bankruptcy process, and seventeen will be on the bankruptcy list.²⁵

Another factor has contributed to the adoption of the license system in China. Development in modern high-technology industry, such as the electronics industry, has blurred the distinction between military and civilian items, making civilian products with military utility. In the field of information technology in current China, many non-SOEs, which can recruit qualified personnel with better benefits, are able to develop high-tech products, and their development capability surpassed those of SOEs. Almost all these technologies can span civilian to defence use.

²³ Yu Liankun, op. cit., p. 130.

²⁴ "Qidong guofang gongye junfang kaishi youguemo congminjian caigou junpin" [To promote defense industry, the military started to procure military items from private sector in large scale], in <http://news.xinhuanet.com/focus/2004-05/08/content_1449552.htm>. It should be pointed out that most of the so called "civilian enterprises" stated earlier are still SOEs although those SOEs are not DIES. Only few are really private business although these few private enterprises had close tie with government agencies.

²⁵ *ibid.*

The Chinese government has adopted the license system to encourage all types of enterprises engaging in R&D and production of military items. Zhang Huazhu said:

Because of special need of defense industry, rigorous reviewing and confidential mechanism are required as private enterprises are engaging in defense production. Beginning 2000, we gradually undertake license reviewing measures to all enterprises interested in engaging in the production of military items. Those passing the reviewing process have three types of licenses: permit for undertaking R&D and production, confidential clearance and quality control license.²⁶

In order to effectively promote the license system and overcome the systemic inertia, the new COSTIND sponsored relevant policy workshops. On 2 April 2004, the commission held a “Workshop on Civilian Industrial Enterprises’ Technology and Products to Engage in Defense Construction” in Beijing to strengthen the implementation of license mechanism, issuing license permit of R&D and production to the society wide, and paving the way for civilian sector to enter into defence products market.²⁷

Another instance was to sponsor workshops to exchange first hand experience.

In May 13-15, 2004, the COSTIND’s license office for the R&D and production of weapons and equipments held an exchange workshop for the research project of license management policy in Beijing. The project started in March 2004, and is expected to conclude in August. In accordance with the commission released information, the purpose of the project was to...make full play of the license system so that competition, evaluation, oversight and incentive institutions can be perfected, and the new armament institution involving defense S&T and industry can combine civilian with military production.²⁸

Some non traditional DIEs have sold their products to the Chinese military. In 1999, Chengdu-based private enterprise, Guoteng (also known as Goldtel) Group, along with Chengdu’s University of Electronic Science and Technology of China, and China Electronic Technology Corporation’s 30th Institute, won a defence contract over many DIEs. After winning the contract, the three jointly organised a Guoteng Group that controlled Guoxingnet

²⁶ “Junpin shichang kaifang, minqi hui qiang junqi de fanwan?” [If defense products market opens to all, will private enterprises win over defense industry enterprises?], in <http://www.se.xinhuanet.com/content/2004-05/08/content_2090797_1.htm>.

²⁷ “Zhongguo jiang jiakuai shishi wuqi zhuangbei keyan shengchan xukezheng zhidu,” op. cit.

²⁸ “‘Chuangru’ jungong dayuan de siqi youzou yu zhengce waiwei” [Private Enterprises Obtruded into Defense Production, Wandered around the Gray Area], in <<http://info.news.hc360.com/HTML/001/002/003/007/63274.htm>>.

Corporation to produce a navigation satellite receiver.²⁹ Chinese media said this was the first case for private high tech enterprise entering into defence production. In July 2001, the Guoxingnet won another project to build satellite navigation positioning system over other twelve competitors. In addition, on 8 January 2002, Sichuan University's Zhisheng Company and Sichuan's Jiuzhou Enterprise Group jointly won a military bid worth \$190 million yuan.³⁰

Separation of Civilian from Military Production Lines

With the deepening of the economic reform and implementation of Defence Industry Conversion (DIC), except very special enterprises, all DIES undertook the policy of separating civilian from military production lines.

China's DIES had focused almost on producing defense items only before the reform started. Even in the early period after implementing the DIC, there was no separation of civilian from military production lines because there was a lack of management experiences and the priority was placed on supporting military line by the civilian line.³¹ With the deepening development of China's economic system, and increased competition among civilian products, DIC was faced more and more challenges, and the separation has become a path that had to be taken.

The concrete measure to separate the two production lines was to divide the R&D and production of the two production lines into two independent units with independent personnel and management systems, and if necessary, into two independent business entities. In line with this principle, the factory lay-out for all R&D, test and production equipments had to be re-arranged. In general, except those DIES transferred to local governments, all business entities of civilian production lines are still controlled by the original DIES in terms of jurisdiction.

Chinese media had some description of the separation measures.

[. . .] In order to handle well this separation job, from January 18, the power company started to prepare for the separation. On January 29, all machine tools have been moved.

²⁹ For the story of Guoxingnet, see "Minqi Guoxing chuanguo weixing daohang dingwei xitong" [Private Enterprise Guoxingnet Obstruded into navigation satellite position system], *Eshiyi shiji jingji baodao* [Economic Report in the 21st Century], August 26, 2003, in <<http://business.sohu.com/22/89/article212498922.shtml>>.

³⁰ "Junpin shichang kaifang, minqi hui qiang junqi de fanwan?" op. cit.

³¹ Deng Xiaoping required the defense industry enterprises to accomplish the goal set in his "sixteen characters" instruction: integration of military and civilian, integration of peace with war, priority to military items, and supporting military by civilian.

In order not to affect production work, the leading officials and staff of the power company re-arranged the layout of water, electricity, and ventilator lines in parallel with the re-arrangement of other facilities, and they all worked at the production shops. Through March 5, the power company has completed the re-arrangement of one hundred and sixty machine tools, seventy lamps and lots of telephone sets.³²

This demonstrated that the separation policy made it necessary to re-arrange the layout of R&D and production lines.

The separation policy has almost been implemented in all the defense industry system. An example is the Beijing Aeronautical Manufacturing Technology Research Institute (BAMTRI). After China had entered the WTO, the BAMTRI foresaw that there would be more competition in civilian product. Hence beginning 1995, the institute adjusted its organisation.

Our institute's structure has been adjusted to the separation of civilian from military lines. Aeronautical technology division (military items division) and high tech development division (civilian division) were established and each division had its own research office and production shop. There are differences in mission need, market, customers, and production arrangement between civilian and military lines, and the separation is important for the development of civilian and military products... We set up corporation for civilian products, and research office under the corporation was established to do the development job.³³

Shaanxi Diesel Engine Heavy Industry Company (SDEHIC) is another good instance. Under the separation trend, the company was separated from the Shaanxi Diesel Engine Factory (SDEF), while the latter is a division of the China Shipbuilding Industry Corporation (CSIC) with a code number 408 Factory. In order to implement the separation policy, the CSIC headquarter issued a "Reply with regard to the establishment of the SDEHIC" on 17 December 2003. This meant that the new SDEHIC as a complete SOE would carry the 408 Factory code and would be responsible for producing military items. The instruction stressed that the CSIC made re-assessment of those equipments be moved from the old SDEF as the capital of the SDEHIC. After the separation, SDEHIC and SDEF were all subordinated to the CSIC, but independent of each other and responsible for own profit and loss. The

³² "Fendou zai tiaolian yixian" [Struggle in the front line of re-arrangement], in <<http://www.gzhf.com.cn/news/newsdetail.asp?id=118>>.

³³ "Beijing hangkeng zhizao gongcheng yanjiusuo minpin kaifa zhilu" [BAMTRI's Development Path of civilian products], in <<http://www.bamtri.com/45anni/p4.htm>>, and "hangkeng zhizao jishu yu zhongguancun" [Aeronautical Manufacturing Technology and Zhong Guan Cun], in <<http://www.unn.com.cn/GB/channel2/3/30/3189/3193/200209/12/212322.html>>.

SDEHIC manages military items related business while SDEF continued to be involved in civilian production and stopped using the 408 Factory code.³⁴

Similar separation measures were taken in large scale institutes in Shanghai. The 8th Academy of China Aerospace Science and Technology Corporation (CASTC) is a good example. The academy, which has been known for manufacturing the “Long March” series of rockets, weather and other satellites, and anti-air missiles, has one design unit, seventeen institutes, twelve factories, and some third industry companies. Beginning 1992, the academy has completed eleven separation cases, and in 1995,³⁵ a Shanghai Aerospace Industry Corporation (SAIC) was established to take charge of the civilian production management under the academy system.³⁶

Specifically speaking, there were two stages for the academy’s separation,³⁷ and this demonstrated some trials and errors in the whole process. The initial stage was done in eleven institutes-factories-as-one units [*changsuo heyi danwei*], and the main job was to internally divide civilian from military lines in the management area of leadership, design, production, test and quality control, finance, evaluation and management administration before 1992. At this time, there was no real separation except internal division.

In 1992, some changes were made. A real separation was adopted. In the military line, production was combined with research/development units in the military line, and institutes combining production with a focus on military items were restored. The rest facilities were converted into manufacturing civilian products. In terms of operation, the academy was divided into two business entities: institutes focusing on military items and factories focusing on civilian products. The two had no relations at all in the areas of administration and asset.

The second stage came in 1995, and its goal was to consolidate the two business entities in line with relevant laws governing the establishment of corporations. In that year, a reform on the separation at the academy level was done, and the SAIC was established. The civilian

³⁴ “Qingzhu Shaanchai zhonggong youxian gongsi chengli dahui zhuanli” [Special Report on Celebrating the Establishment of SDEHIC], in <www.sxdinfo.com.cn/qingzhu/xinwen5.htm>.

³⁵ Some other said it was in 1996. See

<<http://www.shtong.gov.cn/node2/node19828/node19886/node24029/node24031/userobject1ai62532.html>>.

³⁶ Shanghai Aerospace Industry Corporation, “Jiada zichan chongzu lidu peiyu xinde jingji zengzhangdian” [Strengthening the intensity of asset re-assessment, cultivating new economic products], *Hangtian jishu yu minpin* [Aerospace Technology and Civilian Products], 2000, No. 3, in <<http://www.space.cetin.net.cn/docs/mp0003/mp000315.htm>>.

³⁷ On the concrete measures of the academy’s separation, see Fan Bin, “Yi junmin fenxian wei zhongxin, tuijin yuansuo gaige han fazhan: hangtian bayuan gaige diaochaji” [Centered on the separation of civilian and military lines, pushing for the reform and development of the academy and subordinate institutes: Investigation on the reform of the Aerospace 8th Academy], *Guofang keji gongye* [National Defense S&T&Industry], 2002, No. 5, in <http://www.costind.gov.cn/html/zxzz/gfkj_brow.asp?xh=19>.

production line of the academy and subordinate institutes was separated to establish respective subsidiary corporations. The SAIC as the whole subsidiary of the 8th Academy, was to play the role of holding the company sole responsible for controlling all separated business entities involving in civilian production in Shanghai. The SAIC had eleven SOEs, nine China-foreign joint venture companies, two collective enterprises and some other types of enterprises under its control. The military line after the separation, the Shanghai Academy of Spaceflight Technology, was directly subordinate to the CASTC.

Despite the fact after the separation, each had its own administration system, both lines were concentrated by the director of the 8th Academy. In the civilian production line, the SAIC, the subsidiary of the 8th Academy, practiced the system of chairman responsibility, in which, the director of the academy was appointed as the SAIC chairman, deputy director as the SAIC president, and the party committee secretary of the academy as the vice chairman. Board directors of the SAIC were appointed by the academy. In the military production line, the academy director took final responsibility for the R&D&production of military items. In operation, the academy adopted project-based management, in which each project manager took full responsibility of the R&D&production of military items, while the twelve institutes and two assembly shops provided technological assistance to the four-rocket projects.³⁸

The separation of civilian from military production line has been China's established policy, and this was the particularly the case for those regions with voluminous DIES. Shaanxi Province is a typical region with concentrated DIES. In June 2002, a document on "Programme on the Development Priority of the National Defense S&T&Industry for the 10th Five-Year Planning Period of the Gross Economic and Social Development in Shaanxi Province" was released. One of the priority development goals was to "speed up structural adjustment, have defence industry enterprises implement the separation of the civilian from military production line, and have the gross value of the civilian products account for over eighty per cent". At the same time, some measures were introduced to "cut back the size of the current military production capacity, to undertake the separation of civilian from military production lines if the enterprises have sufficient technological expertise, and to broaden the 'One Factory Two Systems' or 'One Factory Multiple Systems' reform."³⁹ This demonstrated that the separation had become a nationwide policy.

Better Integration and Industrialization Oriented Re-structure/Cooperation

³⁸ Cited from

<http://www.costind.gov.cn/hm/zxzz/gfkj_brow.asp?xh=19>和<<http://www.shtong.gov.cn/node2/node19828/node19886/node24029/node24031/userobject1ai62532.html>>.

³⁹ Cited from <http://www.jungong.net/_info/content/content_448.htm>.

Affected by the S&T system reform, relationship of R&D and production units in the civilian line of the DIEs had to be adjusted. The direction was better integration for both mission-oriented and industrialisation oriented projects so that R&D&production can meet different needs. Previously, there was no such kind mechanism and tremendous resources were wasted.

China Academy of Space Technology (CAST) was known for developing the “Shenzhou” series of spacecrafts. It undertook the re-organisation so that R&D& production could be associated with industrialisation. The academy, which is under the CASTC as the 5th Academy, was established in February 1968, and it launched China’s first satellite, Dongfanghong I, in 1970. The CAST, which was able to design spacecraft, along with developing and manufacturing, testing, environment testing, ground facilities and system maintenance capability, had ten research institutes, one factory, and one test center of space technology.⁴⁰

The CAST adjusted the inter-relations of the academy, the institutes and the factory in 2001 so that better integration could be accomplished. Before the adjustment, degree of integration had been not high. As the media pointed out:

For long, CAST had worked merely as an administration agency without authority over the design, assembly, test, and experiment of spacecraft. Because of limited authority, low efficiency, layered management bureaucracy, and not so sophisticated mode as results of this type of management system, consequences had been slow speed and longer time needed for the R&D&production of spacecrafts. This consequence did not meet the need for the small batch of production of satellite and spacecraft, severely constraining the rapid development of our nation’s space technology.⁴¹

Beginning the second half of 2001, the management mode of the spacecraft project was adjusted based on the separation of civilian from military production lines.

From the second half of this year (2001), the CAST merged Beijing’s satellite final assembly line with Beijing Institute of Satellite Environmental Engineering, Beijing Institute of Spacecraft System Engineering, and the academy’s administration office so that the system assembly and the general design of satellite and spacecraft [could] be

⁴⁰ Cited from <<http://www.cast.ac.cn/gycast/gycast.htm>>.

⁴¹ The content of the reform of the 5th Academy is cited from “woguo kongjian jishu yanzhi tixi shixian zhongda zhuanbian” [The R&D&Production System of Our Nation’s Space Technology Implemented Major Transformation], Xinhuanet, December 28, 2001, in <http://news3.xinhuanet.com/zhengfu/2001-12/28/content_215716.htm>.

done at the academy level. Since then, the old system that had been practiced for several decades under the planned economic system has become history.⁴²

The adjustment on the authority of the academy level would enable the academy to directly control R&D&production, allowing better integration of R&D&production to meet mission need.

In fact, the 5th Academy's adjustment has not been completed yet. China's media pointed out that the academy will be transformed into a corporation, becoming a subsidiary of the CASTC.

The next step is to transform the CAST into a subsidiary of the CASTC, realizing the change from merely producing aerospace products to the management combining aerospace products with aerospace assets, gradually establishing an industrial group with compatibility with international aerospace company and with the world first rate class of aerospace technology.⁴³

Industrialisation oriented re-structure of R&D&production took place in the shipbuilding system. The 709 Institute of the 7th Academy under the China Shipbuilding Industry Corporation (CSIC)⁴⁴ underwent an organisational re-structuring in 1999. The 7th Academy, also called China's Ship Research and Development Academy, is well known for manufacturing China's nuclear submarines. The institute located in Wuhan City in Hubei Province, specialised in developing and manufacturing navy automatic control system, integrated circuit board, internet software, as well as special PCs, monitors and the GPS system.

The reform made in 1999 at the institute was to separate R&D from production. The purpose was to allow each to specialise in their respective field.

With the reform in armament system and the introduction of competition mechanism in the defense industry sector, our institute implemented the separation of R&D from production in 1999 and established independent production line. The purpose was to change the old practice that R&D personnel, involving in both design/research and production, had frequently changed the design of products. The reform aimed at improving product quality, meeting the need of serial production, assuring the reliability and maintainability of products. On the one hand, the separation can make the research division concentrate on improving design. On the other hand, it can improve the

⁴² [ibid](#)

⁴³ [ibid](#)

⁴⁴ For the organizational chart of the CSIC, see <<http://www.csic.com.cn/Csic/cn/compose.asp>>.

technical level of the production division, assure quality level, and preliminarily realize serial production.⁴⁵

Cooperation with other institutions also considered industrialisation development as the core. This type of cooperation, which allowed cooperation among different *xitong* (systems), challenged the long established practice of “stove-pipe” integration. The stove-pipe integration had rejected cooperation across different *xitong*. It also created all kinds of *daequan* and *xiaoequan* “self-sufficiency” units, big or small, which covered the whole process of production from design, R&D, production and tests.

Chongqing Shipbuilding Industry Corporation (CQSIC), established in mid-1960s and a local subsidiary of CSIC, is a typical case of adopting cooperation with other *xitong* units. Chinese government announced the Western Development Programme in the second half of 1990s and many major development construction projects were planned. Facing this opportunity, the Chongqing shipbuilding company was offered many urban development related contracts, and one of them was the light rail construction project of the city transportation programme.⁴⁶

The light rail transportation construction project required a special steel frame. The CQSIC had its subordinate factory jointly work with Southwest Jiaotong University to develop the special steel frame, and had the steel frame reviewed by the Chongqing Construction Commission. In the end, the CQSIC won the contract of providing the special steel frame to the construction project. Similar cooperation efforts have become popular in China, breaking down the old practice of looking for partners only within one’s own *xitong*.

Reform of the DIEs

All of China’s DIEs were of SOEs, and any reform measures with regard to the SOEs were applied to the DIEs. At present, main reform measures for the DIEs were to keep core defence R&D capability, convert other capabilities into producing civilian products, and in the end,, those money-losing civilian production lines were sold out, transferred to localities, or announced to be bankrupt so that the defence industry sector’s losses could be minimised.

A typical case was China National South Aero-engine Company (CNSAC). The CNSAC, established in 1951, reportedly manufactured China’s first aero-engine, first air-to-air

⁴⁵ “Yijunweiben mianxiang shichang zouchangyehua daolu fazhan” [Based on the military need, facing market, going toward industrialization path], in <<http://www.ship2000.com.cn/jingying/2001424.htm>>.

⁴⁶ This case is drawn from “Fahui jituan youshi jiaqiang changsuo hezuo zou gongtong kaifa chengshi guidao jiaotong jianshe zhi lu” [Making full play of our enterprise group’s superior strength, strengthening cooperation between factory and research institute, taking the path of the joint development of the city rail transportation construction], in <<http://www.ship2000.com.cn/zhenceyanjiu/2001325.htm>>.

missiles, the first light industrial gas turbine and the first engine for heavy motorcycles. As a subsidiary of the China Aviation Industry Corporation II (AVIC II), the company boasted specialisation in aero-engine, motorcycle and motorcycle engine, precision machinery and optoelectronics. The Chinese authority has designated it as China's production base for the manufacturing of small and medium size aero-engines and a major motorcycle producer under China's national industrial policy. The CNSAC controlled one listed company, six industrial divisions, five joint venture companies, eleven whole subsidiary companies and nine other enterprises.⁴⁷

Under the policy of DIC and the growing domestic demand of motorcycle in China, the CNSAC chose to produce motorcycle in 1993. On 18 December 1993, the CNSAC formed Nanfang Yamaha Motorcycle Company (NYMC) with Japan's well known motorcycle producer, Yamaha. Total investment was US\$60 million, of which Japan's Yamaha Motor Company had 44.23% of share, CNSAC 44.23%, China National Aero-Technology Import & Export Corporation Beijing 5.77%, and Taiya of Hong Kong 5.77%. The NYMC focused on producing motorcycles and motorcycle spare parts.⁴⁸

However, the NYMC's continuing loss in recent years increased the CNSAC's financial burden. After 2000, because of rising cost and counterfeit, the NYMC's performance dramatically declined, and substantial losses emerged. In 2001, the NYMC only produced 30,000 motorcycles out of an annual capacity of 200,000 units⁴⁹. Total loss amounted to \$20 million yuan in that year.⁵⁰ In addition, huge depreciation on fixed asset worsened the NYMC's financial situation. All these consolidated the CNSAC's plan to sell the NYMC in early 2002.

However, the selling process was not without ups and downs. In May 2002, the CNSAC had sold the NYMC shares to the Tibet-based ZhuFeng Motor Company.⁵¹ However, the sale was aborted because ZhuFeng's top managers were accused of embezzlement and money-laundering.⁵² In April 2004, Chongqing-located Jianshe Group acquired the NYMC's share,⁵³

⁴⁷ About the CNSAC's background, see <<http://www.nanfangchina.com/docc/about/about.htm>>.

⁴⁸ Zhang zaiye, "jianshe jituan shougo nanfang yamaha yiwei zhe shemo?" [What Were the Significance for Jianshe Group's Acquisition of Nanfang Yamaha Motorcycle Company?] in <<http://www.chmotor.com/text/dzb/2004-6/602.htm>>.

⁴⁹ "Zhufeng ni chuzi sanyiyuan shourang zhuzhou nanfang yamaha baifenzhi wushi guquan, yamaha zai zhongguo de hezuo huoban jiangyousuo bianhua" [ZhuFeng Motor Company planned to purchase the NYMC's 50% share in \$300 million yuan, Yamaha's partner in China will change], *Zhongguo qiche bao* [China Automobile Daily], August 1, 2002, in <<http://www.people.com.cn/GB/paper1668/6945/674598.html>>.

⁵⁰ Du Yu, "nanfang dongli xunzhao dongli" [The CNSAC is looking for dynamic], *Da Peng Yue Kan* [Eagle Monthly], 2002, No. 10, in <http://www.chinaeagle.com/aboutus/magazine/0210/index7_2002_10_06.jsp>.

⁵¹ About the process, see Du Yu, *ibid*.

⁵² For the accusation, see He Xiaoqing, "ZhuFeng motuo shangshi xiqian?" [Did ZhuFeng Motor have money laundry?] *Zhongguo jingji shibao* [China Economic Times], July 30, 2003, in

and concluded the CNSAC's huge loss. Jianshe was reportedly the largest motorcycle producer in China.

This type of acquisition/sale has been popular in China. China has made decisions to sell money-losing or potentially money-losing DfEs. Ways to handle those included forcing enterprises employees to purchase shares, selling shares to ranking management staff at low prices, requiring government sponsored asset management companies to take over debts or have state banks take over in debt-to-equity mode. Another strategy is to have the society take over those debt by making those enterprises corporative and listing them on the stock market. A typical instance was that of AviChina Industry & Technology Company Limited (AviChina).

AviChina was jointly organised by the China Aviation Industry Corporation II (AVIC II), China Huarong Asset Management Corporation, China Cinda Asset Management Corporation and the China Orient Asset Management Corporation in April 2003. The AVIC II reportedly had 95.66% of total shares by providing assets and shares of its subsidiaries of Harbin Dongan Engine (Group) Company Limited, Harbin Aircraft Industry Group, Hongdu Aviation Industry Group of Jiangxi Province, Changhe Aircraft Industries Group Limited, China Institute of Helicopter Development, and Beijing Wisewell Avionics Technology Company Limited.⁵⁴ After being listed on Hong Kong's stock market, European Aeronautic Defense and Space Company (EADS) became the second largest shareholder with a 5% stake.⁵⁵

AviChina was formally listed in Hong Kong's stock market on 30 October 2003. A total amount of \$2 billion of Hong Kong yuan was raised, and it became the first China's large scale defense industry enterprise to be listed in the overseas market. AviChina's product lines included civilian aviation and automobile products, such as helicopters, regional jets, jet trainers, aircraft spare parts, aviation electronic products, automobiles, car engines and automobile spare parts.

However, AviChina as a holding company controlled some important but money-losing companies of the aviation industry system. For instance, AviChina controlled one hundred

<<http://finance.sina.com.cn/roll/20030730/0927387058.shtml>>.

⁵³ See Zhang Zaiye, *op. cit.*

⁵⁴ "Guojia shuiwu zongju guanyu zhongguo hangkong gongye die jituan gongsi chongzuzhong youguan qishui wenti de tongzhi" [State Administration of Taxation's announcement on the taxation issue of the re-organization of the CAIC II], in <http://www.chinaacc.com/fagui/2004_7/4072713471881.htm>.

⁵⁵ "Shoujia zhongguo jungong qiye zaigang shangshi jizi 19.36yi gangyuan" [China's first defense industry enterprise listed in Hong Kong stock market, raised \$1.936 billion Hong Kong Yuan], *xinhuanet*, October 31, 2003, in <http://news.xinhuanet.com/stock/2003-10/31/content_1153259.htm>.

percent shares of Changhe Aircraft Industries Group Limited which, in turn, controlled 63.88% of the Changhe Automobile Company Limited's shares.⁵⁶ Under this circumstance, AviChina in fact controlled Changhe Automobile. However, many of these DIC companies were still making losses in their business operations, and the consequence of going corporate and listed on stock market was to transfer those debts to society.

There were also cases in which those enterprises went bankrupt or were acquired. A typical case was Qinghua University's business venture and a radio factory in Jiangxi Province.⁵⁷ The Tsinghua TongFang Company Limited, which was established in 1995 was wholly owned by the University. In June 1997, TongFang was transformed into a corporation. In 27 June 1997, it was listed on the Shanghai stock market. Its objective was to transform S&T result into serial products. However, as it was part of the University, it was not possible for Tsinghua TongFang to build production facilities on the campus.

The Jiangxi Radio Factory was a large DIE. Also coded as a 713 Factory, it was under the dual administration of Ministry of Electronic Industry and the old COSTIND. Established in 1966, it was moved to Jiujiang City from the well-known pottery town Jingde Town in early 1990s. Its main products were military short wave communication equipment, civilian receivers and recorders, including radio communication equipment, radios, telephones and automobile electronics. The factory was ranked as one of China's top five hundred electronic and communication producers in 1993.

However, the factory did not perform well. Its total debt reached \$140 million yuan and its debt rate was 83%. The huge debt and lack of capital made the factory solely dependent upon defence contracts for operation. The huge debt forced the factory to cut back the civilian production line in order to reduce debt. Nevertheless, lack of capital investment also slowed down the modernisation pace in defense production and was unsustainable by expected defence contracts.

In order to handle the burden in a short time, the Chinese government agreed to two points. The first was the acquisition of the radio factory by the Tsinghua TongFang without paying to the government. Secondly, Tsinghua TongFang had to pay back \$100 million yuan of debt and ensure the completion of the remaining defence contract. In March 1998, Tsinghua TongFang signed the acquisition with the radio factory, and the newly acquired factory

⁵⁶ in <<http://finance.sina.com.cn/s/20031104/0930504166.shtml>>.

⁵⁷ Hong Shengjiu, *zuixin zhongguo qiye binggou jingdian anli* [The Latest Case Study of Chinese Business Acquisition] (Beijing: China Light Industry Publisher, October 1999), in <<http://www.unirule.org.cn/M&A/qinghua.htm>>.

became a civilian electronic producer focusing on the manufacture of CD-ROM and SMT boards.⁵⁸

Bidding System

The Chinese military was also gradually reforming the procurement system. Previously, a “supply oriented system” was adopted under the socialist economy system to provide and allocate physical materials to military units. Under this circumstance, the military units did not have physical budget in their purses. Rather, the military units made requests and received whatever was allocated to them. Budgets were transferred directly from finance units at higher offices to suppliers.⁵⁹

The paramount leader, Deng Xiaoping required a reform in this field in early 1980s. He instructed that the contract relationship should be adopted between DIES as suppliers and the military as end user. Upon Deng’s instruction, contract agreement was gradually adopted as part of the Chinese military’s armament procurement system. The People’s Liberation Army Navy (PLAN) was the pioneer service in adopting contract system in the military. This reflected a conceptual change of the military under a market economy system, with the growing realisations that military products were a kind of commodity.

The PLAN started to try out the contract system in 1983. They adopted the concept of the “most competent” bid, and designated the winner the chief contractor. In 1984, the PLAN adopted the “best quality and price” contract system for some defence contracts. Again as in 1985, the PLAN adopted a bidding system for the contract of 037-II “Hujian” class missile patrol boats, and this was the first time for the Chinese military to adopt bidding system as part of procurement.

The 037-II “Hujian” class missile patrol boat was developed for the force stationed in Hong Kong post-1 July 1997 when Hong Kong was returned to China. Developed by the China Ship Research and Development Academy (also called the 7th Academy), the missile patrol boat had been assembled by the Whampoa Shipyard in Guangzhou since 1987, when the contract was first signed on 23 December 1987. The first missile patrol boat was delivered on 20 August 1991. The sixth and the final boat was completed in December 1995.⁶⁰

⁵⁸ “TongFang yaobai zouxiang shuzi dianshi chanyelian” [TongFang dangly moved toward digital TV industry chain], in <<http://tech.sina.com.cn/pc/2004-06-18/95/494.html>>.

⁵⁹ Unless otherwise cited, this section is drawn from Yu Liankun, op. cit., pp. 68-77 and 190-193. According the *Liu Huaqing Memoir*, Deng gave the instruction in 1979, and the related experiment started in two items: surface-to-air missile and anti-tank missile. However, the process was not completed. See *Liu Huaqing Memoir*, p. 388.

⁶⁰ About the missile patrol boat, see <<http://vm.rdb.nthu.edu.tw/cwm/prs/5741/5301.html>>.

A further procurement reform was made in 1987. The goal of this reform enabled the military to have full control of their budget. In other words, the previous reform had not changed the established appropriation practice; the service did not have a physical budget on hand, and most project money was transferred to the relevant DIEs by financial units at higher ranking office. Under this circumstance, the Chinese military argued that the real relationship between supplier and consumer could not be fully developed.

Based on the new reform idea, relevant regulations for procurement and payment were amended by the Chinese military authority. In 1987, the SC and the CMC promulgated “Temporary Regulation on the Contract of R&D&production of Weapon and Equipment”⁶¹ and “Temporary Regulation on the Appropriation of the R&D& Preliminary Production for National Defence”. The above amendment changed the previous practice, and allowed the end user units to have control of budget for R&D&production.

A bidding system was finally established in the Chinese military in 2002. In October, the CMC chairman Jiang Zemin, signed an instruction, promulgating a new procurement regulation, “The PLA Code on Equipment Procurement”. The new regulation aimed at providing standardised and unified procurement processes, and institutionalising a bidding mechanism. The GAD reportedly drafted some new rules after the code had been promulgated.⁶²

In addition, the Chinese military adjusted the structure of the service headquarters in line with the Jiang Zemin signed instruction. A typical case existed in the air force. The PLA Air Force pulled together relevant R&D and previously dispersed units, and organised a new R&D department. This new department was made to build up a complete acquisition system, including feasibility study, contract management, model setting and contract concluding. A new service armament department, which sent military representatives to various defense industry factories to oversee R&D&production, emerged from this re-structuring of the Chinese military.

Bidding mechanisms had been adopted, although it is difficult to know the extent to which it has been adopted. It seems that the Chinese military expects to apply bidding mechanisms to the whole course of the acquisition process, ranging from design and research, development and to production. China’s media reported that in addition to the above stated missile patrol

⁶¹ About the content of the temporary regulation, see <<http://www.szptt.net.cn/9810flfg/fl/99/bak.htm>>.

⁶² “Zhongguo lujun zhuangbei caigou shixing zhongda gaige, zhanchang shiwu jingbiao” [The Chinese ground force implemented major reform on equipment procurement, bidding for battle materials], Xinhuanet, April 14, 2004, in <http://news.xinhuanet.com/mil/2004-04/14/content_1418656.htm>.

boat, the bidding mechanism has been applied to almost every defence related items, including light truck, ambulance,⁶³ end products of satellite navigation position system,⁶⁴ various weapon and munitions,⁶⁵ as well as relevant spare parts.

This demonstrated two major changes. First, China started to regard defence items as commodities. If defence items are regarded commodities, then the defence items market is part of the broader market, and efficiency can be accomplished if many business management ideas can be applied. Secondly, if defence items are regarded as commodities, competition mechanism can be applied and the adoption of bidding mechanism reflected this recognition.

Conclusion

What does the above analysis implies for China's civil-military relations? At least, three preliminary observations can be made. The first is the role of Deng Xiaoping. It seems that the paramount leader has persisted in upholding and pushing for reform in the armament system. Since the early 1980s, he has pushed for the adoption of a contract system and the DIC as witnessed by his 16-character principle. It is difficult to assess how the relevant decision was reached for the paramount leader.⁶⁶ Nevertheless, he persisted in pushing for those policies.

The second has to do with the power of market economy. It is obvious that the deepening economic reform toward market economy system has affected the armament system, and has brought about new concepts and vision, if any, to China in general, and armament community in particular. These new concepts and vision, have been transformed into concrete policy measures. The products of this change can be seen in the establishment of supplier and demand sides, the separation of civilian from military production line, the license system, the push towards industrialisation as the core to develop technology, reform of DIES by acquisition and merges, and the bidding system.

⁶³ "Junpin caigou jingzhen yijiu jilie, jinbei haishi yongduo toubiao" [Competition for defense items procurement remain intense, Jinbei's Sealion model won the contract], *Zhonghua gongshang shibao* [Chinese Commercial Times], August 11, 2004, in <<http://auto.sohu.com/20040811/n221467221.shtml>>.

⁶⁴ "Junpin shichang kaifang, minqi huiqiang junqi fanwan?" [Once defense items market opens, will private enterprises win over defense industry enterprises?], in <http://www.sc.xinhuanet.com/content/2004-05/08/content_2090797_1.htm>.

⁶⁵ "Woxiao xiaoyou rongyichao ronghuo di shisijie zhongguo shida jiechu qiannian" [Our alumnus Mr. Rong Yichao won the 14th Ten Outstanding Youth Award], in <<http://202.117.80.9/news/view.asp?docid=200312261142352021178411471603783>>.

⁶⁶ Evan Feigenbaum points out in his book that exchange between the US and China from late 1970s have made many American experts and officials (such as former Secretary of Defense William Perry) provide advice to Chinese top leaders, and this exchange definitely helped Chinese leaders make up their mind and work out the reform plan. Feigenbaum. op. cit.

The third is related to the military's role. From Liu Huaqin's memoir, we find that the military, upon comprehending the problems in China's defense S&T system and potential impact of the market oriented reform on the system, has worked hard to reform the system. In other words, the military not only has not resisted the reform, but their attitude has been forthcoming.

If the above preliminary observations are correct, we can conclude that in the defence industry, Deng's determination, market, and the military's endeavours to reform the defence industry system have all played an important role in transforming established practices since 1949. The three factors were powerful forces that unified civilian and military sectors.

In other words, there was no civil-military difference in this regard. The opposite is true that there might be a consensus in both civilian and military sectors with regard to the armament system reform. To some extent, this reflected a development of sophisticated knowledge of the Chinese defence industry. This showed their new realisation that pouring more money is not the only way to improve the defence industry capability. Rather, it is good institutionalisation and the surrounding conditions that are required to do the job.

It should be emphasised that there has also been resistance towards armament system reform. It seems resistance came mainly from those working in the defence industry sector, namely those who wish to protect their "iron rice bowls" in the name of defending against potential damage to the defence industry in the increasing atmosphere of rising nationalism.

For instance, a research staff of the CSIC questioned the appropriateness of applying market approach to reform in China's defence industry. He argued that if defense items and technology are of public good, which, unlike other public goods, cannot be procured in average market. Furthermore, contracts for defence items are decided by the government on the basis of thorough assessment of overall environment, and the procurement decision did not lie with the DIE and research institute. In addition, the size of the contract is decided by government rather than by market. Subject to the above circumstance, it is very difficult for DIEs to be completely responsible for their own profit and loss.⁶⁷

Despite these concerns, Chinese leaders have made their mind up to continue reforms in the armament industry. This further reflects that there is no civil-military difference in this field. Their common goal is to transform the industry as long as the industry can provide

⁶⁷ Huang Zhongping, "Guanyu guofang keyan yuansuo guanli tizhi gaige de sikao han jianyi" [Some thoughts and suggestions with regard to the management reform of defense research academies and insitutes], in <<http://www.ship2000.com.cn/zhenceyanjiu/200098.htm>>.

sophisticated and advanced weapon and equipment to the Chinese military, enabling the military to fulfill their mission.

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