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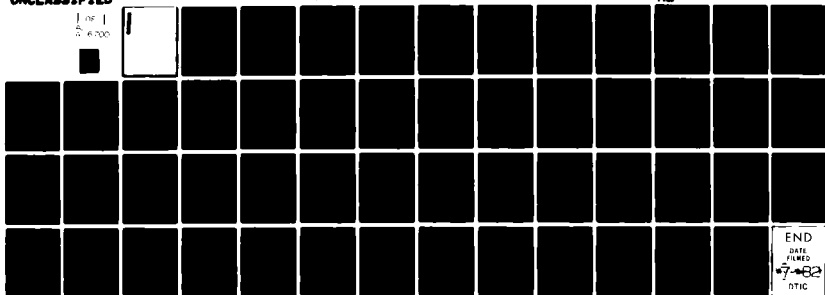
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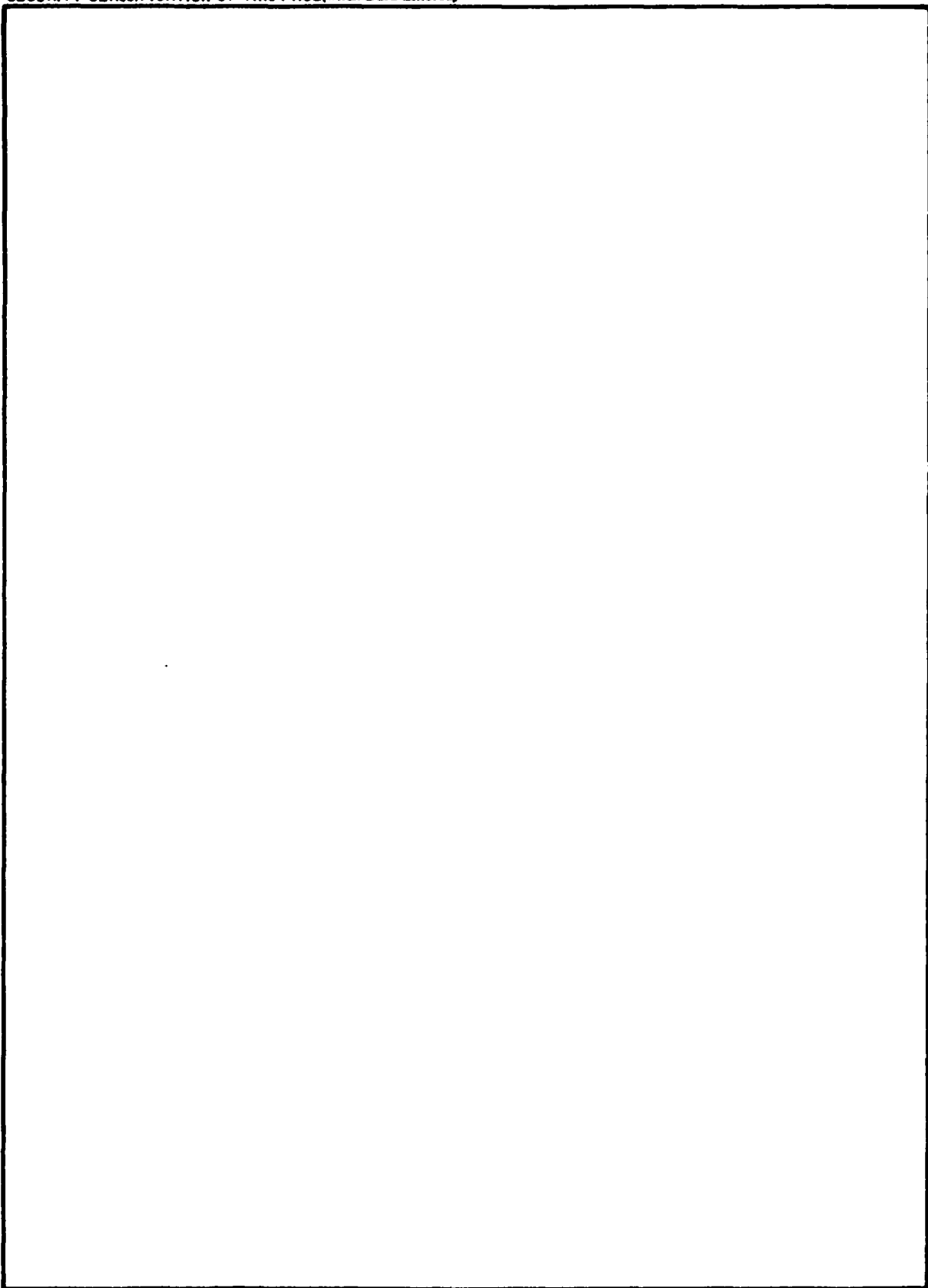


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THE IMPACT OF MODERNIZATION

ON

THE MILITARY CAPABILITIES OF THE PEOPLE'S REPUBLIC OF CHINA

by

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CHAPTER I

INTRODUCTION

The Peoples Republic of China (PRC), in 1982, has the largest standing army in the world. It also has the third largest naval and air forces. Like so many other statistics on China, these impressive figures cannot belie the fact that the military capabilities of the country are grossly insufficient. This fact is evident to the world and readily admitted to by senior Chinese officials.

Backwardness of its military is, however, only one of the major shortcomings in China today. The nation, with 80% of its population engaged in agriculture, cannot feed itself; the industrial base is, for the most part, obsolete; the technical education base so poor that new technology is not forthcoming from the existing R&D base; and the foreign trade level is too low to allow importation of foreign technology.

Under the title of "The Four Modernizations", the current political leadership in China has undertaken a major program to overcome these shortcomings. Their strategy calls for massive improvements in agriculture, industry, science and technology, and national defense. Of these, national defense is initially accorded the lowest priority based on the assumption that economic development is a prerequisite to defense modernization on a massive scale.

This paper will outline the key objectives of the "Four Modernizations" Program and the current capabilities and shortcomings of the Chinese armed forces. In greater depth, it will discuss the key opportunities for modernization in agriculture, industry and science and technology. These opportunities will be analyzed for possible impacts on military modernization over the next decade. Finally it will look at the prognosis for political

stability, a key factor in the success or failure of the modernization program, and one that may be heavily dependent upon the reaction of the People's Liberation Army (PLA) to the modernization program priorities.

CHAPTER II

THE FOUR MODERNIZATIONS

The theme of modernization is not a new one in China. It has been a part of the turmoil that has paralyzed the nation's economic growth over the past thirty years. Simply put, there have been two key factions. These factions are described in an excellent manner by Harry Gelber in his recent book:

China's nineteenth-century conservatives and the "radical" Gang of Four were brothers and sisters under the skin. The approaches favored by such groups emphasized cultural and educational policies centered on China's own traditions and designed to maintain a political and cultural system distinctive from that of the outside world. These views stressed correct values rather than technical competence, mass participation rather than elitist excellence, and a distrust of material values as well as foreign influences.¹

The 19th Century innovators and the "moderates" of the late Mao and post-Mao period emphasized the virtues of pragmatic adaptation to contemporary realities, economic rationality, managerial competence, and technical advance. . . . They tended to seek national unity through decreased emphasis on arguments about belief and greater attention to raising the standard of living of the Chinese people.²

The beginnings of the current surge by the "moderates," or pragmatists as they are often called, occurred in 1969 when the CCP's Ninth National Party Congress (NPC) formally announced the end of the cultural revolution.³ The Lin Biao Scandal in 1971 further eroded the strength of the radicals. (The radicals were referred to as both left-wing and right-wing at different times. They represented a call to return to the revolutionary spirit of Mao Zedong thought.) Under the leadership of Premier Zhou Enlai, Deng Xiaoping, a prominent pragmatist, was rehabilitated in 1973 and eventually elevated to the positions of Vice Chairman of the CCP, a member of the Politburo and its standing committee, and China's first civilian Chief of Staff of the PLA.⁴

In January 1975, in a speech to the Tenth NPC, Zhou Enlai first formally outlined the "Four Modernizations" Program.⁵ The stated goal was "to achieve the status of a 'front rank' economic power by the year 2000."⁶

1976 was a traumatic year in the history of the PRC. The death of Zhou Enlai in January was quickly followed by the purge of Deng Xiaoping, apparently approved by Party Chairman Mao Zedong whose own health was rapidly deteriorating. Mao appointed a relative unknown from his home province of Hunan, Hua Guofeng, to succeed Zhou and the influence of the radicals seemed on the rise under the leadership of Mao's wife, Jiang Qing. The death of Mao in September set the scene for an intense power struggle which culminated in October with the arrest of the four leading radical figures ("Gang of Four") in a coup lead by the Defense Minister, Marshal Ye Jianying who successfully convinced Premier Hua Guofeng and Wang Dongxing (longtime personal bodyguard for Mao and leader of the 8341 unit which provided physical security for the central committee) that the radicals were organizing a coup of their own.⁷

The immediate result was the elevation of Hua Guofeng to Chairman of the CCP, but, more important to the direction that China would take in the future was the rehabilitation of Deng Xiaoping in 1977. His restoration to the positions of vice chairman of the CCP, a member of the Politburo and its standing committee, vice chairman of the State Council, vice chairman of the Military Commission, and Chief of General Staff of the PLA signaled the return of pragmatic leadership to the PRC.

Economic growth in the PRC began a dramatic spurt at the end of the Cultural Revolution. Under the leadership of Premier Zhou Enlai, the "moderates" undertook reforms in many areas. The "Gang of Four" hurdle was a major one, but, once accomplished, it provided the political stability (see Chapter VI) needed to move forward at a rapid pace.

The Four Modernizations program called for major improvements in agriculture, industry, science and technology, and national defense. The initial long-term economic goals were set forth in a ten-year plan (1976-1985) which was made public (in draft form) by Chairman Hua Guofeng at the Fifth National People's Congress in February 1978.

Grain output was to grow to 400 million tons by 1985, necessitating an average annual increase of 4.3 percent, considerably greater than the 3.2 percent average growth rate for 1965-77. Industrial output was to increase by over 10 percent a year, and production of both steel and coal was to double by the late 1980s. Construction for this drive was to involve 120 major projects, including iron and steel complexes, coal mines, new trunk railways, and harbor improvements. The plan formalized the new openness to foreign contact and implied technology imports worth billions of dollars.⁸

The ultimate goal remained unchanged from that announced by Zhou Enlai in 1975. The ten-year plan was to be a step to initial modernization along the path to full modernization (world front-rank status) by the year 2000.⁹

The theme of modernization is not a new one in the history of China. During the short existence of the PRC there have been several plans and programs. The key element that sets the "Four Modernizations" program apart is the major role that has been given to "massive imports of western equipment, complete plants, and technology."¹⁰ For the first time the PRC sought to trade and develop closer relations with the western world.

While considerable progress was made in several areas, by the end of 1978 it was apparent that the initial goals were set too high. At the Third Plenum of the CCP Central Committee in December the 10-year plan was shelved and the focus was shifted to "socialist modernization." This was to be accomplished during a period of readjustment (1979-81) with primary attention being given to correcting the conditions that constrained rapid economic development.¹¹

The precise goals of the "Four Modernizations" program are far from clear. While there has been a constantly increasing dialog between China and the outside, exchange of visits by groups of experts and publication of previously unobtainable data on China, the very nature of the PRC and its form of government limits the amount of completely accurate information available. It appears that the Chinese leadership, in a truly pragmatic approach, is, on a day to day basis, identifying the most important problems and attacking those that appear to be solvable and in the best interests of modernization. 1981 has come and gone and the readjustment continues. The key areas of success (and failure) will be discussed in greater depth in Chapter IV.

CHAPTER III

THE MILITARY STRUCTURE AND CAPABILITIES OF THE PLA TODAY

In order to predict possible modernization of national defense in the PRC, it is helpful to develop a short baseline description of the capabilities of the PLA today. There are several excellent, in depth texts on the PLA. One of the best, Nelson's The Chinese Military System, has been recently updated and should be read for an in depth treatment. This chapter will only provide a broadbrush picture to support an analysis of the impacts of the "Four Modernizations" on the military.

The Peoples' Liberation Army is the title given to the combined armed forces of the PRC. The Air Force and Navy are subordinate arms of the PLA. Although the PLA is the largest military force in the world with over four million men under arms, its size, in proportion to China's population, is not nearly so impressive. The Soviet Union, considered by China to be her primary threat today (sharing a 6,452 km border with China with over 500,000 square miles of contested borderlands),¹² maintains a standing military force of 1.4% of her population. To the south the Socialist Republic of Vietnam, the most recent opponent of the PRC in open armed conflict (1979) has an armed force composed of 1.9% of its population. The United States, with whom the PRC fought its most recent war (Korea) is at 0.9%. The Federal Republic of Germany, facing a border threat similar to, but far less extensive than, that of China supports a military force comprising 0.8% of her population. These figures are in dramatic contrast to the PLA which represents about 0.4% of China's population. Proportionally this is only twice the self-defense force maintained by Japan.

THE ARMY

The PLA ground force (Army) is composed of approximately 3.5 million men. The Infantry is organized into 39-40 "main-force" Corps of 43,000 men (three divisions) each.¹³ The remainder of the main forces is composed of separate regiments of "service"(supporting) forces (armor, artillery, signal and engineer).

A second major component, also made up of full-time PLA troops, is the regional forces, made up of 85 independent divisions stationed for border defense, garrison and internal security (It appears that the latter mission may have been taken from the PLA with the formation of the People's Armed Police (PAP) in 1977-78).¹⁴

While the decade of the 1970s brought some improvements in the Army, the "Infantry forces are not motorized, have poor strategic mobility, and, unit for unit, have less artillery and tanks than western or Soviet forces."¹⁵ The 11,000 tanks in the PLA are mostly outdated and ill equipped.¹⁶ Key deficiencies are the lack of infrared guidance and fire control systems, as well as gun stabilizer and power traverse mechanisms.¹⁷ The effectiveness of the armored force is further diminished by the lack of sophisticated anti-aircraft and anti-tank weapons.

The 18,000 artillery weapons in the PLA are indigenously produced from updated Russian designs and are not outmoded.¹⁸ Their potential effectiveness, however, is severely limited by the lack of modern range-finding and sighting devices,¹⁹ but most of all by the lack of mobility.

For purposes of economy, ease of maintenance, and reliability, China has opted to produce towed guns rather than self-propelled artillery. However, due to a shortage of towing vehicles, the present day PLA artillery forces are hampered by a lack of mobility. This could be especially dangerous

if China were fighting a highly mobile army such as that of Russia. Artillery units might find themselves cut off from their infantry protection or unable to move their guns or ammunition rapidly enough to areas of critical need. Improvements are being made, but many guns still cannot be moved at a faster rate than the pace of the draft animals pulling them.¹⁹

The lack of mobility is a key problem for the entire army.

Crippling shortages of trucks, APCs and transport planes seriously impede the army's ground movement, and hence its defensive capability.²⁰

Equally important, from a strategic mobility aspect, is the severe lack of road and rail networks in China.

Backing up the Army is the part-time, volunteer militia of such unknown size that estimates range from 44 to 250 million men. More important are the three categories and their differing levels of training and equipment.

The best trained and the only category issued arms and equipment is the approximately seven million man "armed militia." The basic or "backbone militia" is made up of 15-20 million men, many of whom are ex-servicemen who receive some training but few arms. The bulk of the force is the 20-230 million man "common or ordinary militia" which receives virtually no military training and would function only as a labor and manpower pool in wartime. "Were China to be invaded . . . the basic, and especially the armed militia would assist the PLA logistically, providing rear area security, and serving as local defense forces."²¹

THE AIR FORCE

The Air Force is probably the weakest link in the PLA. Its capabilities are doctrinally limited by its organization and traditional role as an army air force, primarily structured to operate in support of ground elements.²² It's 5,300 combat aircraft (primarily fighter/interceptors) are marginally upgraded copies of obsolete Russian aircraft (primarily of the MiG 19 class).

So far China has been unable to successfully design or produce original airframes and engines.²³ It's attempts in 1960 to copy the Russian MiG 21 (the F-7) apparently resulted in failure since only 60-100 are in service and production lines were shifted back to variants of the F-6 (MiG 19).²⁴

In recent years, China has tried to develop a new fighter, the F-12, using the British Rolls-Royce Spey engine, manufactured in China under license. There have been reports of test flights of a new aircraft equipped with air-to-air missiles (also a major new development, if true) but there is no evidence to date of production.²⁵

The lack of advanced combat aircraft puts China at a great disadvantage. Three of its neighbors (Vietnam, North Korea and India) have sufficient MiG 21s to challenge her for air superiority and the PLA has nothing "to match the speed, electronic sophistication and armament of the MiG 23 and MiG 25 which make up the majority of the fighter types among the 1,000 aircraft allocated to the Soviet Far Eastern Command."²⁶

The air defense of ground installations and units is an additional mission of the PRC Air Force. They control about 100 surface-to-air (SAM)

missile sites (obsolete 1950 era Soviet SAM-2s) and over 10,000 AAA guns. Despite an extensive network of early warning, ground control intercept, and air base radars, the present, unhardened, Chinese airfield facilities are extremely vulnerable.²⁷

Also under Air Force control are 3-4 airborne divisions (which presumably would come under ground force control once they reached a battle zone). Unfortunately it would take the entire air transport assets of the Air Force to airlift a single division.

THE NAVY

The naval forces of the PRC have an even shorter history than the air force. With the exception of a few ships abandoned by the Nationalist forces, there was no navy in 1949. The existence of a long coastline and the overwhelming desire to seize Taiwan are certainly incentives to develop a strong naval force but China has not done so. Her handful of destroyers and smaller vessels can be considered only an inadequate coastal-defense force.

Although a few ships have missiles, their air defense capability is extremely limited. In a defensive, close-in, posture they would be covered by the dedicated, land based, naval air force, made up of F-6 and F-6 bis (often referred to as the F-9) fighter-bombers.

The bulk of recent investment in the Navy has gone into the submarine fleet. Various sources estimate China has 75-95 diesel powered submarines (primarily indiginously produced copies of the Soviet Romeo Class).²⁸ They also have one Golf Class submarine with SLEM tubes, but no evidence of missiles, and one or two nuclear attack submarines.²⁹

THE SECOND ARTILLERY

China's Nuclear program was given an early priority by its leadership and, with Soviet assistance and expatriate Chinese scholars who returned to China, it made rapid progress achieving the first atomic explosion in 1964 (using U-235, either produced in China's own gaseous diffusion plant or cannibalized from Soviet-supplied reactor fuel). The jump to a thermonuclear device occurred in 1967. The Chinese are capable of producing weapon-grade U-235 and plutonium at a level such that "the availability of fissile material is probably no longer a serious constraint on the production of nuclear warheads."³⁰

One of the expatriots who returned to China was Doctor Chien Hsue-Shen who was the Director of Rocketry for the United States National Defense Board during World War II. This occurred in 1952 when the U.S. government exchanged him for eleven American airmen.³¹ The combination of Dr. Chien's knowledge and the provision of outdated Soviet ballistic missiles were the basis for Chinese rocket nuclear weapon development.

Today China has sufficient capability to make the Soviets think twice about invasion. Her approximately 100 missiles on hand, while limited in range (1000-2300 km), carry warheads up to 3MT. In addition she has successfully tested an 8000 km ICBM and on 20 September 1981 launched three satellites into orbit on one missile, demonstrating a MIRV capability.³²

The primary shortcomings to China's nuclear deterrent are the lack of sophisticated guidance systems and the dependence on liquid fuel for propulsion. It is these problems which have delayed the development of submarine-launched ballistic missiles.

CONTROL OF THE PLA

One of Mao's most often quoted statements is that "political power grows out of the barrel of the gun." He went on to say that "the Party commands the gun and the gun shall never be allowed to command the Party."³³

The primary mission of the PLA is not the defense of China; it is the defense of the Chinese Communist Party (CCP).³⁴ Every effort has been taken to ensure the control of the PLA by the party. In doing so the Chinese have developed a system wherein the PLA will have a great influence on the political leadership of China, but there is little chance of support for leadership from outside the CCP.

The command and control structure of the PLA is intentionally fragmented with parallel political control at all levels. Beginning at platoon level, each military commander has alongside him a commissar (or political officer) of equal authority and in a separate chain of command.

The commissar is the party's representative in the PLA and the link between the army and the civilian population with its social and political organizations. Mao was the Red Army's first commissar, and about 10 percent of the soldiers in the PLA today have some political function.

The commissar expects to be treated as an equal by the commander in peacetime-he bows to the commander during wartime-and in exchange relieves the commander of many time-consuming chores such as personnel problems, relations with civilians, and troop entertainment.³⁵

Every organization in the PLA has a Party Committee (or Party Branch) to oversee its activities. The leaders of these groups are usually political commissars who, in addition to being responsible for personnel matters, morale and discipline, countersign military orders.³⁶

At the top of the political chain is the General Political Department (GPD). The military command chain leads to the co-equal

General Staff Department (GSD). These two organizations, along with the General Rear Services Department (GRSD), the logistical command, are directly controlled by two organizations, with different missions, and vastly different status: the Ministry of National Defense (under the National Peoples Congress) and the Central Military Commission (sometimes called the Military Affairs Commission or simply the Military Commission), an arm of the CCP Central Committee.

The commission in late 1980 included ten members of the Politburo, among them its five vice chairmen and its secretary general. The commission decided both policy and operational questions.

The Ministry of National Defense provided administrative support. It had responsibility for planning, manpower, budget, foreign liaison, and providing training materials but was outside the policy-making or implementation spheres.³⁷

Another fragmentation, designed to prevent regional power bases from developing in the PLA, is the direct command line from the GSD to the Main Force units, the Air Force and the Navy. The Military Region (MR) commanders (eleven in 1980) control the regional forces and, administratively in peacetime, the Militia. In practice the MRs pass commands from the GSD to all ground force units, but operational control clearly rests in the CCP Military Commission.

The system is advantageous in that the checks and balances within the PLA make it difficult for unstable or politically dangerous officers to threaten the national leadership and the public safety. Military regions, while powerful, do not command the largest and best equipped units within their geographic jurisdictions; hence, the regions do not serve to decentralize national power beyond the bounds desired by the leadership. Under no circumstances, short of complete national political collapse, could a military region headquarters create a geographic power base in defiance of Peking's authority.³⁸

At the top the probability of the co-equal GPD, GSD and GRSD colluding to overthrow the government would be extremely unlikely without some word leaking to the deeply involved Military Commission (CMC).

The Chairman of the CMC effectively controls the PLA. This position was held by Mao Zedong from 1935 until his death when he was replaced by the new CCP Chairman, Hua Guofeng. When Hu Yaobang was appointed as CCP Chairman at the 6th Plenary session of the 11th CCP Congress in June 1981, the Chairmanship of the CMC was taken over by the recognized strong man among the Chinese leadership, Deng Xiaoping, who, in turn, gave up his position as PLA Chief of Staff (Head of the GSD) to Yang Dezhi.³⁹

The current post-Mao succession struggle can be expected to again put the command/control network to the test. Yet, because of its institutional safeguards, China is probably in less danger of sliding into a military dictatorship than most of the world's nations.⁴⁰

MILITARY STRATEGY

Although the PLA has conducted four "offensive" campaigns outside of China since the 1949 Civil War (Tibet, Korea, India and Vietnam) plus numerous skirmishes with the Soviet Union and Taiwan, it is reasonable to describe the basic military strategy of China today as defensive.

The military strategy of China, deeply based on Mao Zedong thought, is the doctrine of "peoples war." Under this strategy the invader would be delayed by the Regional Forces, trading space for reduced enemy effectiveness. At the proper time and place Main Force units would attack while the millions of Militia would rise up to disrupt and disorganize the invading force. With their overwhelming numbers the Chinese fully expect to fight and win a war of attrition.

The doctrine of "people's war" . . . could take full advantage of China's vast and often difficult terrain, of the possibilities afforded by massive mobilized manpower, and of the enthusiasm and determination inculcated by the CCP. It could not prevent the invasion of Chinese territory but it could help Chinese forces wage a war of attrition and annihilation against an invader after he had arrived.⁴¹

As the technological gap between the PLA and the military forces of neighboring nations has widened, this strategy has become more and more tenuous. Additionally, the concentration of vital economic resources near the borders, notably of energy in the northeast and around Beijing, greatly increases the cost of retreating before the enemy to weaken it.

In 1978, Xu Xianglian, Head of the Defense Department, said that "The people's war is a fount of wisdom left to us by Chairman Mao for crushing any invader. We must fight the people's war persistently and win the final victory," but in 1979, in an article in Red Flag (Hongqi) he indicated his departure from this: "For the construction of defense modernization and adaptation to future necessities for strategy we must armor our minds with contemporary advanced military thought. Only when those who have grasped up-to-date military thought and modern weapons and equipment are united is it possible to achieve a powerful combat capability. As is well known, there have been countless examples in military history of defeats caused not by inferior troops and weapons, but rather by out-of-date military thought and strategic mistakes."⁴²

There is general agreement within the Chinese leadership that a new strategy is required. The difficulty, however, is that without modernization, the PLA has little choice other than "people's war."

CHAPTER IV
KEY OPPORTUNITIES FOR MODERNIZATION
IN
AGRICULTURE, INDUSTRY AND SCIENCE AND TECHNOLOGY

As mentioned in Chapter II, the original goals of the 1976 Ten-year plan have been dropped as unrealistic. China has discovered that, despite major economic expansion over the past decade, potential growth is limited by the size of the existing base. In simple terms there is insufficient capital to achieve the goals. In 1979 the government projected a budgetary deficit of \$1.13 billion and actually realized an \$11.4 billion deficit (a figure which may appear small to the American reader used to recent high deficits. But, while U.S. expenditures exceed revenues by 8 - 10%, China's represent over 15%). The 1980 budget deficit is projected to be even worse.⁴³

Despite the obstacles, the Chinese economy has moved forward at a rapid pace. The 1980 GNP is estimated at 8.4% above that of 1979 and there was a 17.4% growth in light industry in that single year. While many of the 120 major projects in the ten-year plan have been postponed or slowed, some have moved forward with significant results. The key to controlling the growth, and to eventually achieving the goals of the Four Modernizations (if not by the year 2000, by some future date) appears to lie in an intelligent selection of priorities. This chapter will suggest those areas which appear to offer the most benefit for the least cost.

AGRICULTURE

If China is to ever strengthen its economy it must feed itself. There are really two major problems here: the production of food (and other agricultural products) and control of the population.

China has crashed through the one billion mark (doubling its population in 30 years) and, despite major efforts to reduce it, the birth rate was still over 2% in 1978 and "might not decline to 1.5% until the early 1980s."⁴⁴ (CIA figures pegged the 1979 growth at about 1.6%.⁴⁵ The Chinese State Statistical Bureau claimed 1.17%.⁴⁶)

At the same time, average life span has risen from 57 years in 1957 to 68 years in 1978, and infant mortality has declined from 139 per 1,000 in 1954 to 20 per 1,000 in 1980, offsetting some of the gains from birth control.⁴⁷

As reduction in population growth below 1% is an essential goal which China must pursue (her stated objective was to accomplish this by 1980 and lower the rate to 0.5% by 1985.⁴⁸) and there is little direct economic cost to this program, birth planning should continue as a high priority program.

The Communist ideology is supportive of a birth control program. "Under Socialism, human reproduction, like material reproduction, is to be planned in the collective interest."⁴⁹

In March 1978, at the Third Plenum of the CCP Congress, family planning was included in the new PRC Constitution. A standard of one child per couple was established as ideal. Penalties were established for having more than two children (docking of wages, denial of additional

housing and a limit on the size of private plots). There were also cash rewards announced for sterilization.⁵⁰

There is a good chance for plans to work in the urban areas where living space and wages can be effectively controlled. In the countryside, however, (where over 80% of the population lives) there is a counter incentive to have children for increased manpower in the typical, labor intensive, Chinese agriculture.

Increased agricultural production will be more difficult and expensive and may cause undesirable side effects (unemployment), but modernization is essential in this area.

The key to short-term modernization of all areas of the economy is the import of foreign high technology processes and equipment. The quickest way to obtain the funds to accomplish this is for the PRC to eliminate its present need to import food and fibers (primarily cotton which in turn, when processed into textiles and exported, provides a large portion of the current exports).

China is a huge country (roughly 2.4 billion acres), but for various geographic reasons only 11% of that is cultivated land.⁵¹ Some of the land currently cultivated is marginal and there appears to be no additional suitable land. The only solution appears to be an increase in the production per acre and a shift to income crops which can be exported or processed by light industry for export. Some possible crops to be expanded are cotton, rice, wheat, vegetables, tobacco and oilseeds.⁵² One use to which currently uncultivated land could be put to advantage is for grazing of sheep, goats and cattle, but this would have to be accompanied by an increase in feed grain production.

A key area, requiring little capital investment, is a program to change "peasant attitudes from relatively passive, even sullen, acquiescence to active and willing cooperation with the Party and State."⁵³ In its initial stages this program has expanded private plots, encouraged profits and reduced the tax burden on the farming population. These ideas should be pursued and used as incentives to shift to income crops.

Progress in the area of expanding private plots has been carried so far as to encourage the formation of some 135 million household farms.⁵⁴ This movement away from the collectivist theory, basic to Communism, has caused some consternation within the Party, especially among mid-level cadres (leaders of production teams and brigades). The pragmatists will have to move carefully in this area to avoid an impact on their tenuous political position.

The most obvious agricultural modernization to the western mind would be increased mechanization. This is an area that has been strongly pursued over the past 30 years with an increase from 400 to 500,000 tractors and the installation of power-driven drainage and irrigation machines totaling 65.6 million horsepower (compared with 100,000 HP in 1949).⁵⁵ This progress should be continued but at a rate compatible with the industrial capacity and with due concern for jobs for displaced workers. The urban areas are already crowded with unemployed and the capability to transport food to the cities is a major shortcoming that will be slow changing.

INDUSTRY

The industrial sector employed only about 10% of the labor force in 1980 but due to much higher worker productivity than the agricultural sector accounted for over 50% of GNP. Industry was both the fastest growing major component of the economy and the producer of the modern goods required to speed development and modernize the other economic sectors.⁵⁶

While first priority must be given to feeding the population, Industry represents the area in which the largest mid-range modernization gains can be realized. The ten-year plan, in line with previous policy, concentrated on heavy industry (steel and coal production, railway and harbor improvements). Expansion required major capital investment and was severely reduced in the 1979 readjustment (to include the cancellation of several international agreements, some of which were under construction).

Attention was shifted to light industry which holds the most opportunity for rapid expansion with moderate investment and promises exportable products which will produce the funds essential to purchase western technology (steel mills, mining equipment and machine-tool factories among others).

The key area was textile mills and consumer goods. These industries were, for the most part, promoted within collective agricultural units in rural areas and in urban areas with unemployment. There is considerable room for expansion in both areas and it appears that this will continue to be the most productive path in the near future, but China must be careful that it does not inspire tariff barriers at its markets.

Oil has been a major source of income to the PRC since 1973. Oil production peaked in 1978 due to the inability of the Chinese to maintain

a level of capital investment necessary to expand into known large, but widely dispersed (some offshore), reserves. Production is currently declining.⁵⁷

At the same time the domestic demand for oil has continued to grow and anticipated modernization over the next few years could completely eliminate this resource as an export commodity.

It appears that oil is a critical area. The loss in export income will sharply reduce the ability to import technology and expand the industrial base. A possible solution in this area (no more radical than the CCP moves to encourage household farms in agriculture) would be to encourage foreign investment and development of some of the ten oil fields proposed under the ten-year plan.

One possible way to accomplish this (and still retain sovereignty over the oil resources) would be a "pay-back-by-product-drilling." This would be conducted by a foreign contractor hired by the PRC but payment would be made through a percentage of production given to the producer.⁵⁸

A further element of this plan, attractive to the PRC is the reservation of on-land oil and gas fields for domestic development and consumption. Contracts would be confined to offshore areas.

The pay-back contract maintains domestic control of the resource, the pace of development, the export price, and the physical area of exploration, while introducing foreign technology and risk capital in a rapid but controlled manner.⁵⁹

A final area of industry which could be modernized with limited capital expenditure is the efficiency of operation and management of industries and individual factories.

Two major problems with Chinese industry that have limited meaningful productivity are overconcentration of power and bureaucracy.⁶⁰ The pragmatists are attacking both of these through programs of decentralization (reducing control of prices by central planners), the raising of managerial salaries and the abolition of revolutionary committees (replaced by director staffed management boards). In the long run this should improve efficiency, but there may not presently be a sufficient number of competent managers in China to move quickly in this direction. Progress will depend upon the education modernization mentioned below.

Before leaving industry it is essential to refocus on the long term economic goal: self-sufficiency. The hard currency earned by China from its exports must be carefully invested in an advanced technological industrial base. Wherever possible China should purchase the technology rather than the manufactured good. By doing so the PRC will develop the ability to expand to the level of the major industrialized nations of the world.

SCIENCE AND TECHNOLOGY

Modernization in science and technology is clearly the key to development in the other three of the four modernizations. New processes are essential to increase productivity in industry and agriculture and modern weapons and communications technology are essential for national defense.⁶¹ The keys in this area are education and basic scientific research.

The Cultural Revolution essentially destroyed the core of Chinese education. Schools were closed and educators and scientists were sent to the communes to perform common labor.

Much of the laboratory instrumentation went into disuse often resulting in damage; and while some equipment was wantonly damaged and destroyed during the most intense phases of the movement, other equipment was removed from the laboratories and moved to factories where it was sometimes misused. On the whole, little in the way of new equipment or materials was accessible. China's academic community was cut off from foreign contacts, scientific journals and books ceased to be imported from abroad or never reached their intended destinations, and existing library collections were either made inaccessible, were damaged or destroyed.⁶²

Deng Xiaoping has made the rebirth of a sound system of education in China a major issue. Universities have been reopened and a goal of nationwide ten-year schooling set. A system of exams has been established to insure that the most qualified get the benefit of the still limited post graduate program. The great shortage of qualified teachers will require considerable time to overcome. In the meantime, large numbers of Chinese are enrolled in overseas universities (many in the United States).

The first National Science Conference since 1950 was held in 1978. It confirmed the vanguard role of scientists in the modernization of China. The government set out four broad goals for the period 1978-85, for research in 27 particular sectors and a 23 year plan for creating a corps of scientific and technological personnel. By 1985 it was intended that China should approach or attain the advanced world's 1970s levels in several important branches of science and technology.⁶³

Deng Xiaping has repeatedly attacked the persistent anti-intellectualism in China, emphasizing that "science and technology workers are real workers and are to be respected as such. Scientific and technical education is vital to China's future and is to be heavily emphasized."⁶⁴

There are few short-term, inexpensive opportunities in the areas of science and technology. China will be forced to pay for imported technology for many years before she can begin to benefit from domestic modernization programs. The future is far from bright. Current optimistic projections are that by 1985 China can attain the world's technical and economic standards of the 1970s. In other words, "they will be 10-15 years out of date, instead of 20 or 30."⁶⁵ One observer has estimated the investment required to accomplish this growth in industrialization and technology by 1985 at \$50 billion. The achievement of this level of imports presses closely "upon the upper limits of the possible."⁶⁶

One quote from Deng Xiaoping, made in October 1979 does an excellent job of summing up the problems and priorities of modernization in China:

The greatest question is the same as in 1919: "The most important problem confronting the Chinese people is to have enough to eat."⁶⁷

CHAPTER V

POTENTIAL MILITARY MODERNIZATION

Modernization of national defense was given last priority of the "four modernizations" for the sound reason that, to develop effectively, a modern military establishment needs industrial and technological sectors that are healthy and productive, and China had neither. Military modernization was perceived as a slow process, requiring training, education, and "professionalization."⁶⁸

The economic capability of the PRC to modernize its armed forces is completely overwhelmed by the magnitude of the task. Although there seems to be a wide range of estimates of China's national budget and the amount dedicated to defense, one figure, released by the Japanese Research Institute for Peace and Security, estimates the 1979 total budget at \$71.7 billion with about 18% (\$12.9 billion) of that dedicated to defense.⁶⁹ Several Chinese leaders have said that this proportion will tend to shrink (perhaps to 10%) over the 1980-81 period. "The reduction of 1981 is expected to be around five billion yuan."⁷⁰

If we choose tanks as an example, and accept the proposition that the 11,000 tanks the PLA has are obsolete, to the extent that they have a negative value (provide a false sense of security to the few units that have them), and that the number of tanks is grossly below what is required (to have the same density as the Soviets would require a force of 67,000 tanks), and consider a program where the PLA would produce or purchase a modern technology tank (at a price tag of \$1 million each for ease of calculation), the cost to China to equip the PLA with a modern tank force would be \$67 billion (its total defense budget for over five years).

The preceding example has many fallacies, the least of which are that without armored vehicles for the infantry, the effectiveness of tanks

against the Soviets would be greatly diminished, and that only 50% of the defense budget is normally available for new producement. It is only meant to demonstrate the complete impossibility of a major equipment modernization of the PLA in the near future.

Actions taken (or, more precisely, not taken) by the Chinese leadership indicate that they are aware of the economic facts, and, despite constant rhetoric referring to massive equipment modernization and extensive visits by Chinese delegations abroad to look at weapons systems, they are pursuing other options to strengthen national defense.

The most valuable action taken to date has nothing to do with modernization. It is the abrupt change in PRC foreign relations policy. Recognizing that she needs a long period of peace and stability, as well as access to external technology, China has turned to the West.

Given Beijing's perceptions of the Soviet global challenge, and the presence of Soviet troops all along the Sino-Soviet border, China's leaders are willing to "unite" with the West to gain whatever political advantages they can in their struggle with Moscow. Not only might the prospect of enhanced U.S.-China military ties increase the leverage of Beijing with Moscow, but Beijing certainly also realizes that any such ties are likely to heighten the hostility of the U.S.-Soviet relationship.⁷¹

Over the past several years China has, with great fanfare, sent trade delegations to most of the western nations with arms industries. They have looked at fighter aircraft in England and France, tanks and antitank missiles in Germany to name just a few.

Yet actual Chinese purchases have been few. China has purchased 13 Super Frelon heavy-duty helicopters from France (which have possible military applications), Rolls-Royce Spey 202 supersonic jet engines and related equipment from Britain, and, reputedly, French HOT antitank missiles, although this sale seems not to have been finalized. These two or possibly three agreements virtually complete the list of actual Chinese purchases of Western arms.⁷²

The delegations may bring home good ideas for domestic research and development, but the probability of any major buys is dim. One key advantage of the "window-shopping" by delegations made up of key PLA military leaders is the exposure of those individuals (most of whom have never been outside of China before) to the reality of the backwardness of the PLA. These leaders can be expected to give their full support to the Four Modernizations program in the future while planning the correct paths to follow in arms purchases and development. In effect China is modernizing the outlook of the PLA in a very cost effective manner.

The remainder of this chapter will discuss the key opportunities available that can improve national defense over the next several years.

THE ARMY

A key weakness of the PLA is its lack of mobility. Some of this will slowly be overcome as domestic factories turn out additional tractors and trucks to improve agricultural productivity and the ability to get products to market. Given the close relationship between the PLA and the people, it is reasonable to assume that these vehicles would be used to transport troops, move artillery and for other military purposes during training exercises and in event of war.

A further mobility improvement (from a strategic and logistical support standpoint) will be the result of improvements to the Chinese transportation infrastructure (particularly railroads) to be carried out under the Four Modernizations.

One of the goals of the three-year period of readjustment that began in 1979 was to increase the capacity and efficiency of the transportation network. Extensive projects were undertaken to modernize and expand the railways, ports, highways, and inland waterways.⁷³

With the size of its army being its major strength, the ability to more rapidly shift the disposition of its forces would greatly enhance the combat power of the PLA.

With the existence of an overwhelming armored threat along its northern border, and the inability to modernize and expand its own armor forces, China appears to be pursuing the development of an improved antitank capability. One of her few reported arms purchases has been 15,000 Milan and HOT antitank missiles from France in 1978. An additional 600 anti-tank missiles were purchased from West Germany the same year.⁷⁴ (Although some sources indicate that these purchases were never consummated).

China has also, in trade with Egypt, acquired samples of late-model Soviet weapons. Among these was the "SAGGER" antitank missile which has been copied and is under production now in China.⁷⁵

The same source provided Soviet SA-3 and SA-6 surface-to-air missiles (SAM) which could be used as prototypes to develop a badly needed anti-aircraft capability. (The PLA just recently began production of a naval SAM copied from the Soviet SA-2.⁷⁶)

The Egyptians have also provided at least two Soviet T-62 tanks to China and another may have been captured during the war with Vietnam.⁷⁷ It is reasonable to assume that the advanced technology of this tank will be incorporated in future domestic models (to include the laser rangefinder).

One strength of the PLA, often overlooked, is its small arms. "The service rifles, machine guns and light anti-tank weapons used in PLA rifle companies are comparable to current U.S. and Soviet standards."⁷⁸

Once the fighting closes down to a few hundred yards, the PLA main forces have about as much firepower per unit as any army."⁷⁹

THE AIR FORCE

Prospects for the Air Force, where modernization will require a major infusion of new technology and capital, are less bright.

China cannot afford to build aircraft beginning from a blank sheet of paper; her technical manpower and resources are too precious to spend thousands of man-hours and millions of dollars on a research idea which may well reach a dead end.⁸⁰

Although China has received a MiG-23 fighter from Egypt it is doubtful that her success in copying it will be any better than it was with the MiG-21. The major hope is that the production of the British Rolls-Royce Spay engine in Chinese factories will develop her technological capability sufficiently to permit greater success in reverse engineering. Meanwhile, there is certainly the probability of some MiG-23 technology appearing in future domestic Chinese fighters such as the F-12.

The Chinese have shown considerable interest in the British Harrier fighter-bomber which, with its vertical take-off capability, would substantially overcome the present vulnerability of China's air forces while on the ground. British government approval of the sale was given in 1979, but China has since stated that the cost is more than they can afford.⁸¹

The contribution of the Air Force to strategic mobility will probably be enhanced over the next several years. First will be a spin-off from the commercial improvements. The first of three Boeing 747

jumbo jets was delivered to China in 1980 and there have been negotiations with McDonald Douglas over possible domestic production of DC-9 jets. A more rapid improvement would result from the purchase of Lockheed C-130s, a sale recently approved by the U.S. government.⁸²

THE NAVY

In the area of national defense related to naval power, the primary positive action that the PRC has taken is the improvement of relations with the United States. China sees the U.S. as the only force capable of countering the recent massive build-up of Soviet naval forces in the Pacific. By her silence, Beijing has encouraged the retention of the U.S. fleet and its bases in Asia.

Other than the arming of her ships with modern missiles, the PLA will probably not devote much to the modernization of her navy. The major port improvement program along with a growing commercial ship building industry will, however, create the capability to more quickly enlarge her force if she should decide to do so.

THE SECOND ARTILLERY

The deterrence provided by China's nuclear capability will probably continue to be given priority by the PRC leadership. With 20% of the Soviet SS-20 IRBMs now targeted on China, she will have an incentive to expand her force over the next several years. If the Chinese manage to perfect a SLEM it will give them a solid-fueled strategic missile and a major breakthrough in developing a nuclear force safe from a Soviet surgical strike.

CONTROL OF THE PLA

The current control structure of the PLA has withstood the test of time and will probably not be changed. What can be expected to change are the men in the key positions.

Ever since the Lin Biao affair there has been a trend toward increased civilian control.

At the end of 1973 military region commanders were reshuffled and stripped of their civilian posts. PLA membership in the Central Committee was halved during the Tenth Party Congress in 1973 and has about the same proportion of military members as did the Eighth Central Committee (1956-65).⁸³

Many of the Party Secretary positions, filled by PLA officers during the cultural revolution, are now filled by civilians and these individuals are, more and more, serving as political commissars in military regions and districts.

In a key move the 8341 unit, that facilitated the successful coup in 1976, has been placed under the control of the General Administration Office of the Party Central Committee.⁸⁴

Six strategies are currently being employed to strengthen a centralized, civilian control of the PLA:

1. Up-or-out promotions. Company COs retire at age 30. Enlisted men may not serve more than 15 years after initial reenlistment.
2. Military Region Commanders were shifted again in 1979-80.
3. Field grade officers are reassigned to different units following mid-career training.
4. New promotion system. All unit personnel assess merits of candidates. Seeks to reduce sponsor-protégés.
5. Annual written exams.
6. Demotions for under-achievers.⁸⁵

A key element of control in the PLA, and throughout the government at all levels, is Party membership. With a membership of more than 35 million, the Communist Party of China (CPC) exceeds the total population of all but twenty-one countries in the world. Conversely, this is less than 4% of the population of China so the country is rigidly controlled by a small, select (politically reliable) group.⁸⁶

One of the things which sets the PLA apart, and makes membership in it strongly sought after by Chinese youth, is the high percentage of Party membership. To join the Party one must be "Red and expert" and expertise gained in the military has been the stepping stone to Party membership and subsequent opening up of opportunities (both military and civilian). All commanders and commissars in the PLA are Party members and many of the fighters achieve Party membership.

Although there have always been factions within the Party, there has yet to be a danger from outside the Party. Deng Xioping has remained as Chairman of the Military Commission to prolong his direct influence over the PLA. Although there are senior commanders who do not agree with the priorities of the Four Modernizations and others who owe their appointments and allegiance to the Radicals, it appears that Deng is effectively weeding out or winning over these groups.

MILITARY STRATEGY

The minor modernizations possible in the PLA over the next decade are not apt to provide the opportunity to shift from "people's war." A major spin-off from the Four Modernizations program, however, should be an increased educational, especially technical, level of the PLA soldier.

Marshall Ye Jiangying, now serving as China's protocol head of state as Chairman of the National People's Congress, said on 1 August 1977:

Our army's modernization calls for powerful ground, air and naval forces and modern arms and equipment, including guided missiles and nuclear weapons; it calls for rigorous and hard training to develop the ability to wipe out the enemy as required in actual combat, and mastery of the new techniques involved in handling modern arms and equipment and of the new tactics entailed.⁸⁷

While the economy will slow the acquisition of modern arms, it is recognized that a major upgrading of the technical ability of the PLA will be necessary to operate and maintain those arms when they come. The PLA has established a goal of raising the knowledge of PLA officers "in mathematics, physics and chemistry to the middle school level by 1982 and the high school level by 1985. Distribution of textbooks to all troops and establishment of science and cultural education groups is under way."⁸⁸

An increased level of education, both within the existing PLA and within the general population which provides 500,000 new recruits each year, combined with strong support for the study of new tactics and strategy, will probably cause the evolution of PLA military strategy in close coordination with its capabilities over the next several years.

CHAPTER VI

POLITICAL STABILITY

AND ITS IMPACT ON MILITARY MODERNIZATION

The scope of this paper does not permit an in depth analysis of political stability. However, since the assumption of political stability appears to be the most important factor in predicting some success in the Four Modernizations program and a resultant positive impact on Chinese military capabilities, some discussion of the probability of political stability is essential.

Political stability in the PRC has always been tenuous. During Mao Zedong's lifetime his personal aura seemed to hold things together. Some writers have said that he came close to falling several times and that the Great Leap Forward (1958-60) and the Great Proletarian Cultural Revolution (1966-68) were inspired by the necessity to counter growing opposition to his leadership.

The coup in 1976, after the death of Mao, did not result in a stable political situation. There were, in fact, three distinct groups in the Politbureau at the end of 1977:

Two of the five members of the Standing Committee of the Politburo, Chairman Hua Guofing and General Wang Dongxing, represented cadres who had benefited from the Cultural Revolution The second pair of allies on the Standing Committee were Ye Jianying and Li Xiannian, who represented both the veteran cadres who had survived the Cultural Revolution and the military leadership. Finally there was Deng without an ally on the Standing Committee but with potentially the largest following of Politburo members, since he could appeal to both veteran cadres and those who had been hurt by the Cultural Revolution.⁸⁹

Deng's goal is to achieve what some writers have labeled the "Fifth Modernization." This is to provide "the political and social prerequisites for economic modernization."⁹⁰ The way he has gone about this to date has been to attempt to consolidate control of the Party and the country under himself and his close associates.

In short order, but not without considerable opposition, Deng has managed to move pro-Deng forces into key positions, while isolating his dissenters. In late 1978 Chen Yun was rehabilitated and joined the Standing Committee of the Politburo. Although he later broke with Deng over the initial failures of the Four Modernizations, he continues to oppose the other two groups.

At the Fifth Plenum of the Eleventh Central Committee in February 1980, Deng forced the "resignations" of four of Hua Guofeng's key associates: Wang Dongxing, from the Standing Committee of the Politburo, and Chen Xilian, Ji Dengkui, and Wu De, from the Politburo. A new Standing Committee was constituted on which Hua Guofeng now sat in lonely isolation; Marshal Ye Jianying and Li Xiannian continued to represent the veteran cadres, while Deng had three allies in Chen Yun, Hu Yaobang, and Zhao Ziyang. Confident of his new control of the Party, Deng, reestablished the Party Secretariat, the office from which he had risen to power in the 1950s, and placed it under the control of his loyal associate Hu Yaobang.⁹¹

In September, 1980 at the Third Session of the Fifth National Peoples Congress, Deng shifted strategy and moved to control the State Council. Under the guise of turning over operational control of the government (as differentiated from the Party) to younger men, Deng resigned his position as Vice-Premier and orchestrated the resignation of Premier Hua Guofeng and six of the other 18 Vice-Premiers. The replacements, especially the new Premier, Zhao Ziyang, were recognized proteges of Deng's.⁹²

The most recent step in consolidation was the manipulated resignation of Hua Guofeng as Party Chairman (he remains as the junior Vice-Chairman) and the elevation of Deng's loyal associate, Hu Yaobang, to that position. While not eliminating the number of factions, Deng has successfully demonstrated his control over both the Party and the State. This, combined with his assumption of the key position as Chairman of the Military Commission (and control of the PLA), appears to have gone a long way toward the long-range political stability and support essential for the carrying out of the Four Modernizations.

Probably the key to political stability today is Deng Xiaoping himself. At 78 he is the glue that holds it all together. Michael Weisskopf stated the problem clearly in the Washington Post:

Despite his ability to promote proteges to top Party and government posts during the past 18 months, Deng's active involvement in China's political life is considered vital to preserve the nation's stability and carry out his reforms.⁹³

The death or bad health of Deng in the near future could shatter the fragile political stability of the PRC. His followers hope that he will remain to oversee the consolidation of control by his proteges.

In a recent (1 March 82) edition of the Beijing Review, Chairman Hu Yaobang is quoted as saying that the CCP leadership is united with "full mutual understanding and respect among the leadership."⁹⁴ He followed this by presenting the "two most important tasks" to be accomplished in 1982: "streamlining the administrative structure and punishing criminals in the economic field." In the same edition Deng Xiaoping is quoted as saying: "The present situation in China is one of unprecedented stability . . . the work to streamline the administration system has been proceeding smoothly since it began a month ago." He

went on to say that the streamlining involved the elimination of overlapping and overstaffing of government departments and the retiring of functionaries that are too old.

One of the first steps was the announcement by Premier Zhao Ziyang in February that "Ministers will have to resign at 65, while departmental directors and bureau chiefs will be expected to step down at 60. He further announced the intention to reduce the number of Vice-Premiers from thirteen to three.^{94b} Still more details are beginning to surface including the reduction of ministries, commissions and agencies under the State Council from 98 to 52 and a reduction in staffing by one-third. Key tasks cited by Zhao Ziyang were:

- The duties and responsibilities of departments must be made explicit;
- People who are qualified ideologically, politically and professionally should be selected and appointed, and leading bodies composed in a good way;
- Proper arrangements must be made for veteran cadres who retire; and
- Cadres must be trained in terms more effectively to raise the quality of the whole contingent.⁹⁵

These activities would indicate that Deng feels secure enough in the strength of his present control to continue to move forward with reforms.

It is interesting to look at a summary made by a Chinese Affairs Analyst in September 1981, after the fall of Hua Guofeng but prior to the recent drive to streamline (purge?) the government:

The oscillating pattern of Deng's advance through 1978 his retreat in the spring of 1979, his advance through 1980, and his retreat again in the early months of this year(1981) suggest that while there is a broad leadership commitment to fundamental political reform for China's overall modernization, serious disagreement remains with regard to the scope and pace of such reform. The

apparent balance between those like Deng, who seek rapid change, and others, like Hua Guofeng, Ye Jianying and Chen Yun, who seek gradual and controlled change, is delicate and sensitive to external circumstances.⁹⁶

Making the assumption that political stability will be maintained is a risky one, but seemingly justified by the events of the past several years.

CHAPTER VII

CONCLUSIONS

The impact of modernization on the military capabilities of the PRC in the next decade will be extremely limited. When compared to projected growth in the capabilities of the armed forces of the USSR and the United States, the PRC will do well to hold the gap from widening between now and the year 2000.

This does not mean that there will not be substantial growth in the capabilities of the PLA and the nation's economic and international influence. By the year 2000, China will probably be the most dominant military power in Asia (after the USSR and the US). She may also get enough of her domestic problems under control to encourage her to exert her strength among the nations of the Third World.

But, the infrastructure for substantial military improvements (will) . . . remain slender.

While she might build a more complicated force structure, with a stronger and more sophisticated system of logistic support, there were no signs in 1978 that would lead one to suppose that a substantial, high-technology defense capacity, based on a major domestic R&D and production effort, was likely to appear before the turn of the century.⁹⁷

The opportunities to derail anticipated progress are many: 1) a new political coup with the revolutionary (anti-modernization) forces regaining control, 2) war with one of her neighbors, and 3) a lack of assistance from outside nations (particularly Japan, Western Europe and the United States), to name a few. The path to success will be tricky, but the current PRC leadership has demonstrated a political astuteness in both domestic and international affairs that would promote an optimistic prediction of success.

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