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**People's Liberation Army Air Force (PLAAF):  
Shifting Airpower Balance and Challenges  
to India's Security**

**Air Commodore Ramesh V. Phadke**

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**Air Commodore Ramesh V. Phadke** is an active duty officer of the Indian Air Force, currently working as Senior Fellow at the Institute for Defence Studies & Analyses, New Delhi, India. He has held five command positions and many important staff appointments. He is a post-graduate in Defence Studies and has been working on airpower issues. His current interests include China's military modernization and India's national security. He was a visiting fellow at CISAC in 2001 as part of the project "Strategic Stability: China and South Asia."

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## **Contents**

Introduction . . . . .	1
Early Years . . . . .	3
Hardware . . . . .	6
Software . . . . .	9
Doctrine . . . . .	11
Future of Airpower . . . . .	13
Training . . . . .	15
Implications for India . . . . .	18
Conclusion . . . . .	21
Notes . . . . .	23
Appendix . . . . .	25



## Introduction

China is India's largest and most important neighbor, and despite recent efforts at improving relations between the two countries, the over half-century-old border dispute remains unresolved. China is an expansionist power trying to enhance the security of its peripheral areas.<sup>1</sup> It is important to note that in the recent past, China has resolved its border disputes with almost all its neighbors except India. Relations between the two countries have no doubt improved since 1988, when then-Indian prime minister, the late Rajiv Gandhi, visited Beijing, and since the conclusion of 1993 and 1996 agreements on maintenance of peace and tranquility on the borders, but the progress so far has been slow. China continues to claim some 90,000 square kilometers of Indian territory in the northeast while it illegally occupies some 23,000 square kilometers of Aksai Chin in the north of India.

While some scholars have asserted "China considers the 1962 border conflict an unfortunate event in history and will never allow such an event to occur again,"<sup>2</sup> the memories of the 1962 Chinese invasion of India still rankle in Indian minds. In some ways India has yet to get over the trauma of 1962. India has long accepted the status of Tibet as part of China, but China has not reciprocated by accepting the special relationship that India has with Nepal or the status of Bhutan, Sikkim, and Arunachal Pradesh, the latter two being states of the Indian Union. In retrospect it can be argued that the 1962 border war was the result of gross misunderstanding and miscalculations on both sides. Yet, "To many Indians, the confidence-building measures that have been introduced since 1976 seem to have been built on a history of unilateral Indian concessions. In 1979 Foreign Minister Atal Behari Vajpayee attempted to normalize relations with China and paid a visit to Beijing. China rebuffed him by opening a military campaign against Vietnam, a close Indian ally, during his visit."<sup>3</sup>

The Chinese have sold huge quantities of arms and combat aircraft to Pakistan and Bangladesh. Bangladesh, which had barely a squadron of F-86 Sabers when it was part of Pakistan, now possesses some 88 combat aircraft, all of them of Chinese origin except six MiG-29s it purchased from Russia. Bangladesh surely faces no threat from its neighbors. China has also sold defense equipment to Myanmar, a country adjoining India in the south-east, and has helped build its infrastructure, such as roads and airfields that have great strategic significance to India's security. China also maintains a listening post and a radar station on

Coco Islands, close to India's outlying island territories of Andamans. China has in the past supported insurgents in India's northeast.

The most disturbing factor overshadowing Sino-Indian relations is China's special relationship with Pakistan, which has received military assistance, missiles, and nuclear and missile technology from China. Although the Chinese have repeatedly tried to assure India that their bilateral relations with Pakistan are not aimed at any third country, it is easy to see how China has effectively boxed India in the subcontinent by using Pakistan as its cat's paw. China is unlikely to abandon Pakistan as its strategic ally in South Asia. Without consistent Chinese support, Pakistan could never have posed a potent threat to India's security. The Sino-Pakistan strategic relationship is thus part of the bigger Chinese game of Asian hegemony.

Many Chinese scholars readily accept that India is essentially a peace-loving country even if they consider it to be a potential challenger to China.<sup>4</sup> Mutual trust is, however, a long way off. In the recent past there has been much hype about improvements in Indo-U.S. relations, India's stand on the National Missile Defense issue, and the Indian Navy's goodwill tours to some countries in East Asia. India's possession of an aircraft carrier and its attempt to build another are often cited as the main points of Chinese worries. In short, the Chinese automatically see any action on the part of India that even remotely appears to be extending India's interests outside the subcontinent as hegemonic. The Chinese leadership has repeatedly said that the resolution of the border dispute is best left to the next generation, indicating that it would deal with India only when China had built its comprehensive national strength, and that until then all it needs to do is keep India in its place. Under these circumstances India has no option but to remain watchful while trying to achieve a stable relationship with China.

India's nuclear tests in 1998 also invited China's wrath, and relations soured. It is only now that there are some signs of slow recovery. While the prospects of a Sino-Indian border war are remote, it is essential that India understand the security implications of the rapidly modernizing Chinese military. It is in this context that this paper attempts to assess the air-power balance and the growing strength of the People's Liberation Army Air Force (PLAAF). The paper argues that even if the pace of its modernization remains slow, the PLAAF will have decisively surpassed regional air forces in strength and capabilities by the end of the current decade.

## Early Years

At the birth of the People's Republic of China (PRC) on 1 October 1949, it possessed a motley collection of some 159 mixed vintage aircraft (remnants of the long civil war) and 202 pilots. "Mao Zedong, still smarting from the fact that all Chinese aircraft had been under the control of the Nationalists up till 1945, specifically incorporated the creation of the air force into the constitution."<sup>5</sup> According to Richard M. Bueschel, "Communist Chinese airpower was thereby mated to the state as a permanent benchmark of China's progress."<sup>6</sup> In less than 10 years since its founding its strength had reached a staggering 5,000 combat aircraft. This was the result of the 14 February 1950 Treaty of Friendship and Cooperation (also known as the Valentine's Day Treaty) that China's Supreme Leader Mao Zedong signed with the Soviet Union, another fraternal Communist country.

The new People's Republic entered the Korean War on the side of North Korea in November 1950, and soon the pace of the PLAAF's growth accelerated. It learned some valuable lessons from this war, although its performance was not particularly impressive. It lost in air combat eight of its newly acquired MiG-15 jet fighters for every one of the F-86 Saber jet fighters that the Americans fielded in the war. No doubt this poor performance was the result of throwing into the fray new and as yet inexperienced fighter pilots as well as the relative superiority of the U.S. fighters. The Chinese also found that the PLAAF was no match for the combined effort of the Taiwanese and U.S. air forces that continually violated mainland Chinese air space during the '50s. Air defense of the cities thus became the prime motive and the sole aim of the PLAAF. To be sure, "On 7 October 1959, [PLAAF] shot down a Taiwanese reconnaissance aircraft over Beijing, the first combat use of surface-to-air missiles anywhere in the world. In the 10 ensuing years, the missile force shot down six U.S.-made U-2 high-altitude reconnaissance aircraft and three U.S.-made pilotless aircraft."<sup>7</sup>

By the late '50s, however, China's relations with the Soviet Union, its former friend and mentor, had soured to such an extent that China found it difficult to sustain the ambitious aircraft and aero-engine construction programs that it had embarked on during the heyday of Sino-Soviet cooperation. Quality and serviceability of equipment suffered, and drastically reduced flying hours thus started a quest for self-reliance. China soon started a process of reverse engineering the Russian equipment that it had received in huge quantities and also

launched new programs for aircraft design and development. At this time Mao's disastrous Great Leap Forward movement caused serious problems. These were further exacerbated by the 10-year long Cultural Revolution (1966–76), which not only compelled the country's intellectuals into forced labor in the rural areas but also severely disturbed the PLAAF's training programs. A number of its technical training institutes and colleges were closed, and the students and faculty were sent to work in the fields. Leadership transitions, purges, and domestic upheavals took a heavy toll on the air force. Some of the key strategic programs, however, such as those directed at building China's strategic arsenals, did not suffer any adverse effects of this countrywide internal turmoil.

Another blow to the PLAAF came in 1971 after the death of Lin Biao. A veteran of the Long March and one-time heir apparent to Mao, Lin died in an air accident while fleeing China after an apparent failed coup attempt. Because of his close ties with the military, the PLA and PLAAF suffered as a result of ensuing purges. It was not until after the second coming of the visionary leader Deng Xiaoping in 1975 that PLAAF's fortunes were revived, albeit somewhat haltingly. In fact, Deng proved to be the savior of China's airpower. It was he who not only articulated the decisive role that airpower would play in any future conflict but also castigated the air force for being lazy, inefficient, and overstaffed.<sup>8</sup> Such personal interest and understanding of airpower must have made it easier for the air force to cut excesses and weed out the less educated, old, and inefficient officers. By the early '80s the PLAAF was firmly on the path of recovery.

It is important to point out the Chinese did not really use the huge, if somewhat unwieldy, PLAAF in war during these early years. Although the Chinese had used its air force in the "liberation" of Tibet in 1950 and gained some experience from the Korean War, the PLAAF was used only for air defense duties during numerous encounters in the Taiwan Straits conflicts of the '50s and early '60s. China did not employ its airpower during the 1962 invasion of India, the 1969 Usuri River border conflict with the former Soviet Union, or in its 1979 invasion of Vietnam. Although in the last case the PLAAF was mobilized for war, it did not support the army's offensive. The result was that the mighty People's Liberation Army (PLA), a one-time mentor of the Vietnamese Army, suffered heavy losses and an ignominious defeat. The 1979 encounter with the Vietnamese must surely have hastened the process of introspection in the air force.

Although in 1991 Chinese military leaders asserted that the Gulf War was not a model that had universal application, they certainly saw the stark asymmetry of power between the U.S.-led coalition and Iraq, and the overwhelming technological superiority the former enjoyed. Most U.S.-based scholars, including John W. Lewis, rightly believe that the 1991 Gulf War came as a "rude wake-up call" for the PLAAF and the Chinese political leadership.<sup>9</sup>

Until the Gulf War, ground forces ruled the roost (even today the PLA continues to play a dominant role) because all of the Chinese Communist Party leadership had either at one time been part of the victorious People's Army or were familiar with its role in the liberation struggle. These leaders had little knowledge of airpower employment, and the army was unlikely to surrender its position of superiority in the national hierarchy of power. However, they soon realized that no matter what type of war they fought in the future, airpower was bound to play a decisive role. They began to understand that the efficacy of modern airpow-



er was the result of high technology-based precision guided munitions, space-based surveillance and reconnaissance platforms, communications, and command and control. Thus began in earnest a renewed search for the means to rebuild China's airpower and to develop doctrines essential to prosecute such a high-tech war.

Rick Fisher, an American scholar, recently said, "The prospect by 2005 of over 180 Sukhoi Su-27s and Su-30s, armed with R-77 AAMs and Kh-31 ASMs, directed by 3-4 AWACS, guided by GLONASS partially owned by the PLA, protected by a (*sic*) coastal batteries of S-300s and their Chinese derivatives, and preceded by 600-800 SRBMs and LACMs should be unsettling to the commanders of the ROCAF and the U.S. 7th Fleet."<sup>10</sup> Even if one disagrees with this optimistic estimate of the pace of the PLAAF's growth, it is evident that in the not so distant future the PLAAF will improve its capabilities vis-à-vis other regional air forces.

## Hardware

Although at one time in the early '70s China had some 27 different designs of aircraft on the anvil, its record of indigenous production is not particularly impressive. In 1996, China claimed that it had built some 13,000 aircraft and 49,000 engines of all types since the founding of the PRC.<sup>11</sup> These figures, however, appear to be highly exaggerated. For a variety of reasons already mentioned, the PLAAF's strength reduced quite dramatically in the post-'70s period. Combat aircraft of vintage design were becoming increasingly difficult to maintain, while at the same time their usefulness was diminishing. What China needed was a lean and mean air force equipped with modern, state-of-the-art aircraft and supporting infrastructure. In 1992 China signed a historic deal with the Russians for the supply of 72 Su-27 multi-role air-superiority fighters. China also received considerable technological assistance from the U.S. prior to the 1989 Tiananmen incident. New aircraft development programs were started, the air force organization revamped, and the military restructured.

By the year 2000, the number of PLAAF combat aircraft stood at more than 3,000. Although that was down from more than 5,000 in the late '60s, the quality of the aircraft had improved considerably. The PLAAF today has some 1,500 J-6 (Chinese MiG-19), 250 J-8 II (of all versions), 700 J-7s (MiG-21), 300-plus Q-5 Fantans (an indigenously developed strike version derived from the MiG-19), 120 of the venerable H-6 bombers (Chinese version of the '50s vintage nuclear-capable Soviet Tu-16), some 120 Su-27 air superiority fighters, a few Su-30 MKK multi-role fighters, plus an assortment of new and old transports and helicopters. Following Israel's cancellation of its deal to supply the PRC with Phalcon AWACS, China is now trying to get the A-50 AWACS planes from Russia.<sup>12</sup> China has also converted a number of its H-6 bombers for air-to-air refueling and has acquired some IL-76 tankers. This would not only add to the Chinese strategic airlift capability, but the AWACS would give it the necessary information dominance to better control and coordinate offensive air campaigns in the future. (See Appendix for details.) By any standards this constitutes an impressive inventory.

In addition, "The PLAAF held the first test flight of its much-anticipated F-10 multi-role fighter in March 1998. The F-10, China's first indigenously designed 'fourth-generation' fighter, has performance capabilities roughly comparable to the Lockheed Martin F-16A and

is a dramatic improvement over China's existing inventories."<sup>13</sup> The fighter should be in the PLAAF inventory by the end of the decade.

Western observers, however, believe that the PLAAF is still no match for the Taiwanese Air Force, which has, since the '90s, received some 150 F-16 and 60 Mirage-2000 aircraft in addition to the more than 300 indigenously developed fighters supported with modern radar and U.S.-delivered Patriot air defense missiles. They also believe that, given the vast expanse of the country and its long borders, the Chinese air force is as yet too small to meet the country's basic air defense needs, let alone offensive operations. There is certainly some truth in this assessment, but one can ignore neither the inherent flexibility of modern airpower nor the fact that following the resolution of almost all its border problems, except with India, the threat has vastly diminished. China is undoubtedly focused on and preoccupied with the Taiwan issue at present, and its actual potential for power projection is moderate, but what is of interest to an airpower analyst is the direction in which PLAAF modernization is oriented.

From the time of its split with the former Soviet Union in the early '60s, China was well aware of the limitations of its air force and the imminent obsolescence of its aircraft. Although China continued to build these aircraft, maintaining a very large inventory, they were not used in any conflict. China instead decided to build its nuclear forces as an instrument of deterrence, on the assumption that rudimentary nuclear capability could preclude war and resist blackmail, and the PLA could take care of a minor border war. In other words, China managed to conduct its diplomacy on the basis of its nuclear status and its image as a "tough guy" without being overly bothered about the state of its armed forces. As will be brought out later, China has shown remarkable dexterity in dealing with other countries, small and large, weak and strong, even though the record of its military engagements since Korea has not been particularly encouraging. In fact, the 1962 border conflict with India was the only time the PLA registered a victory, and that was perhaps because the Indian leadership could not muster the gumption to use its air force for fear of escalation. It must be noted that at that time China's domestic situation was far from conducive to waging a full-fledged war, and China did not possess any nuclear weapons.

The PLAAF's present strength and level of sophistication are not as yet growing at a rapid pace, but it is still a formidable force. Its 1,500-odd MiG-19 or J-6 aircraft are most likely deployed for local air defense in areas with a low/diminished level of threat. On the other hand, its 250 or more J-8s, with 120 Su-27 fighters, can hold their own even when faced with a modern air force, such as that of Taiwan or India, when combined with a clever employment of conventional short-range ballistic missiles (SRBMs) for coercion as well as intimidation. China's missile test firing during the 1995-96 Taiwan Straits crisis showed a glimpse of how it might use the combination of its missiles and aircraft in the future. Such a combination has been used successfully to achieve political ends on at least two other occasions in the last century: First Germany, in the final phases of World War II, fired a very large number of V-1 and V-2 rockets on targets in Britain. Some 50 years later during the 1991 Gulf War, Iraq used its Scud missiles against Israel and nearly broke the U.S.-led coalition.<sup>14</sup>

It is evident that the Chinese also analyzed the Iraqi use of Scuds as a political weapon. China is now building and modernizing its arsenal of SRBMs and cruise missiles to make them more accurate, lethal, and survivable. China would likely employ these missiles to make up for the shortage of combat aircraft, as China knows full well the difficulties of developing

its own third and fourth generation combat aircraft without foreign technological support. With friendly air forces, such as those of North Korea and Pakistan, China can in fact bring to bear considerable offensive pressure on its future adversaries. According to a reputable defense magazine, China is developing a family of cruise missiles, including air, surface, and ship-launched versions with ranges from 600 to 1,800 kilometers.<sup>15</sup> These are likely to be dual missiles (nuclear and conventional), although it is not as yet known if any of these are already operational. Surely senior PLAAF leaders are currently formulating new ways and means to employ these missiles alongside their modern combat aircraft. A few well-targeted and accurately delivered cruise missiles can signal China's political resolve without causing too much destruction to the enemy, thereby keeping the danger of collateral damage to a minimum and at the same time controlling escalation. The Chinese leadership must surely have learned that the "CNN effect" could result in worldwide condemnation if not deftly handled. As recent wars have amply demonstrated, TV pictures of destruction of civilian areas and refugees make good "copy," and both the aggressor and the victim will exploit the global media when it suits them.

## Software

Many noted Western scholars researching the Chinese military, including Ken Allen, have time and again stressed the necessity to understand the Chinese philosophy and strategy of airpower employment. Given the near opaque nature of the Chinese system, at least to those who do not understand the Chinese language, it is natural that an assessment of the PLAAF's "software" would, at best, be speculative. It is interesting to note the slow and gradual transformation of Mao's "people's war" doctrine to one of "high-tech local war" (also known as people's war under modern or high-tech conditions), a process influenced by the internal conflict of views on how a modern war should be fought and won.

In this regard, the 1979 border war with Vietnam appears to have fundamentally influenced the thinking of the Chinese military and political leadership. Note that the Chinese did not use the PLAAF during this war although a number of its units were moved to the area. The PLA also lost nearly an infantry division's worth of troops. In the war's aftermath, the PLA immediately launched a series of exercises at increasingly higher levels of command to improve command, control, and coordination between the different arms of the military and made necessary changes to organizational structures to enhance efficiency. It has also reorganized the military by reducing the number of military regions from 11 to seven, reintroducing ranks and insignia, strictly adhering to retirement age, weeding out the uneducated and the less efficient officers, and encouraging higher education at the various defense universities.

Retirement rules were revised and strictly adhered to by removing the difference between "grades" and "ranks," which had often resulted in officers of lower ranks getting higher pay on account of their seniority. Many incompetent officers were retired, and at the same time the leadership profile became relatively younger. "Today's officer corps is younger, better educated, and more technologically proficient than its counterpart of 20 years ago. A small proportion of it is better traveled and more cosmopolitan in their outlook."<sup>16</sup> In 1983, its 35 field armies were reorganized into 24 (now 21) group armies, which integrated infantry and armor to facilitate combined arms operations. "The process of reorganizing six of the 21 Group Armies has continued, with conversion from a division-based structure to a more flexible brigade-based structure. This reform is scheduled for completion before the end of 2001."<sup>17</sup>

Xue Litai, a CISAC scholar, feels that the PLA has successfully completed the process of employing the “combined arms concept,” so that there is coordination between the infantry, artillery, and armor, but that inter-service coordination has still not reached the desired level. The PLA has also streamlined the procedures for fire and air support during the recent years.<sup>18</sup>

## Doctrine

As brought out earlier, Chinese military doctrine has evolved slowly over the past 25 years, with the 1991 Gulf War giving that process added impetus. But since the PLAAF is subordinate to the PLA and its commander's status equals only that of a military region commander, it may not be particularly easy for the PLAAF leadership to develop and officially lay down its own independent airpower doctrine. According to Ken Allen, "the Chinese military does not even think in strategic terms but that all its doctrinal changes have been restricted at best to campaign or operational levels." Allen also cites that, "the PLA's writings have always stressed that the most important element of China's airpower doctrine is gaining air superiority." He goes on to add that, "the trend in the PLA's airpower strategy and doctrine is to gradually move away from the myth of direct support to the ground forces."<sup>20</sup> In simple terms the overall doctrine emphasizes "active defense," which means that the Chinese military may not be the one to launch a preemptive attack, but it also does not mean that it would follow the classical Maoist doctrine of "luring the enemy deep" before mounting a counterattack. It is thus a mixture of defense and offense with the former being more important. For the PLA Navy the doctrine, comprising four Chinese characters, is that of "active defense and operations in coastal waters." The PLAAF also emphasizes "active defense," but its "eight-character" doctrine includes "appropriate offensive activities and long-range strike" operations. This may be interpreted to mean that while the PLAAF would normally not launch a preemptive strike against the enemy, should it appear that an attack by the enemy were imminent, the PLAAF may take the offensive to thwart it.

Gaining and maintaining air superiority would, however, require a sustained offensive campaign against the enemy's capability to wage an air war. Would the Chinese authorities permit such a campaign? This is the crux of the evolving airpower doctrine. Having absorbed the 1991 Gulf War lessons, the Chinese are unlikely to wait for the enemy to strike first because they rightly fear that a technologically superior enemy would probably cause extensive damage to the Chinese offensive capability, making delayed retaliation difficult if not impossible. If this assumption were true, then the PLAAF would have to be given considerable freedom for independent action even in the early phases of a conflict. In other words, the PLA can no longer treat the air force as a subordinate supporting service. Such a change may be around the cor-

ner; however, this would require a very deep and thorough understanding by the top political and PLA leadership of the complexities of modern airpower employment. Such a change would also highlight the urgent need for inter-service cooperation and coordination *led and orchestrated essentially by the PLAAF*. There is no direct evidence of this having already happened, but PLAAF watchers will have to carefully monitor developments in this area.

Once the PLAAF breaks out of the present straitjacket of the PLA, it is quite likely that it will want to take the initiative in any possible future conflict. Major changes in the organization and structure of the PLA in general and the PLAAF in particular would perhaps give a clue to the likely direction and thrust lines of the Chinese air force. But according to John Lewis and Xue Litai, the long-established Chinese strategy of “threatened use of force in manipulating the adversary’s responses would require that the military unquestioningly yield to political authority when calibrating the magnitude and timing of the pain, if any, to be inflicted. In these circumstances, recourse to force always remains subordinate to political stipulation that can violate standard military principles.”<sup>19</sup> Even after the PLAAF has acquired modern weapons and support systems, its doctrine and employment will continue to bear a unique Chinese imprint. Would the Chinese be able to employ airpower in the way in which the West has become used to? A careful analysis of future joint exercises may offer some inkling as to the direction that the PLAAF doctrine might take.



## **Future of Airpower**

Before examining the operational potential of the PLAAF it would be useful to briefly discuss the likely pattern of airpower employment in the foreseeable future. Airpower use in the last two decades has shown that it will continue to play a major if not decisive role in future conflicts. Most experts, barring a few in the world's armies, have stopped harping on the failure of strategic bombing during World War II and have readily adopted more modern views on airpower as a versatile instrument of a nation's military power. However, with governments and their citizens becoming more sensitive to heavy casualties and widespread destruction, rules of engagement have already become very restrictive. Modern airpower will have to be designed and equipped for use throughout the full spectrum of warfare, from local border conflicts to action against non-state actors to full-fledged conventional wars. It is also widely accepted that future wars will be limited in scope, duration, geographical extent, and, most importantly, in their political objectives. It is therefore only natural that airpower will have to be ready to execute long-range precision strikes for conventional deterrence and coercion or intimidation. Its use will also have to be carefully calibrated to ensure transparent surgical strikes at the intended targets with minimum collateral damage.

It must be remembered that future limited wars will likely involve the use of airpower by more evenly matched adversaries. Airpower achievements may not appear as spectacular as during the 1991 Gulf War. More often than not airpower may have to be used against enemy territory to indicate one's resolve rather than to achieve full-scale destruction of the enemy's assets. As is well known, airpower could be used as an instrument of coercion through either a punishment or denial strategy. According to Michael Horowitz and Dan Reiter:

Coercion involves persuading an opponent to stop an ongoing action or to start a new course of action by changing its calculations of costs and benefits. Accordingly, coercion occurs whenever a State must choose between making concessions and suffering the consequences of continuing the present course of action. Denial targeting is usually considered to mean attacks on enemy's military and include interdiction of supplies as well as destruction of his war waging capability. Punishment, on the other hand, means aerial attacks against the enemy's civilian-industrial targets including water supplies, elec-

tricity grids, and other important underpinnings of industrial society. The coercive theory underlying punishment strategy argues that if a population suffers enough, its rulers will concede to the demands of the attacker or the population will rise up to overthrow a leadership it thinks has brought undue destruction on the nation. . . .<sup>21</sup>

It is well known that modern States or its people do not easily buckle under the pressure of punishment attacks but may sometimes rise up in support of the regime when attacks are perceived as being unjust and bullying tactics. Denial targeting strategies on the other hand are likely to be more effective as in this case only the military wherewithal of the enemy is sought to be destroyed and that too only to the limited extent till the target complies.<sup>22</sup>

In a seminal study of airpower employment, Daniel Byman and Mathew Waxman have highlighted the need to measure the efficacy of airpower not only by what it can achieve in tangible terms but also by the way in which it constrains the adversary's options.<sup>23</sup>

In the case of local border wars airpower will be the preferred tool. This is because it is usually time-consuming and expensive to move and deploy large ground formations. Distance from the border and the terrain can further add to these difficulties. In a possible future war between China and India involving mountainous terrain and the need to commit huge forces to ensure a favorable outcome, airpower would likely become the most attractive option even when the overall political objectives are limited. For airpower to be effective against the full spectrum of threats the air force would have to possess some armed/attack helicopters, but these are unlikely to be effective in high-altitude mountainous border terrain. While the armed helicopter will remain the preferred instrument for attacks against specific targets, long-range precision strike aircraft, cruise missiles, and SRBMs would be needed in a conventional border war. It must be noted that as of now no helicopter in the world is designed for the delivery of weapons such as rockets, bombs, and anti-tank missiles at high altitudes, hence helicopters are more vulnerable to ground fire and quick reaction missiles of the Stinger variety. It would thus become evident that the combat elements of the PLAAF would have to play a major role in such a border conflict. Employment of cruise missiles or SRBMs would, however, require very careful consideration, especially when the adversary possesses nuclear weapons. Notwithstanding these limitations, China may rely on manned aircraft of the J-8 II and Su-27/30 types for offensive action supported by cruise and short-range missiles.

## Training

Military policy, doctrine, and training form the core of Chinese airpower capability. It is widely reported that in the post-Gulf War era the PLA and its air force have done a considerable amount of thinking on airpower employment and devised different means to improve its efficacy. Such measures have included combined arms exercises at the corps and group army level. We have already seen the progress made by the PLA in general, but air force training is a highly capital- and labor-intensive enterprise that has to continue without major disruptions in peacetime. As we have already seen, PLAAF training, both flying and ground, was badly disturbed during the decade-long Cultural Revolution and the preceding Great Leap Forward period. It is quite possible that the PLAAF leadership was so completely caught up in the frequent purges and internal factional troubles that no one bothered to assess the long-term impact on the overall operational preparedness and combat-worthiness of the PLAAF. It was only after the 1979 war with Vietnam and later after the Gulf War that these lessons were fully absorbed and the PLAAF addressed this huge problem.

For example, as per one report, “As of 1996, Class-A combat regiments accounted for 95 percent of the total number of combat regiments, with 74 percent [of] pilots trained in all-weather flight. About half of all flight and air defense units [were] Category B units, equipped with old armaments and not receiving training.”<sup>24</sup> A frequently cited study by RAND Corporation, *The People’s Liberation Army in the Information Age*, also does not give many details of the actual training philosophy and routine of PLAAF flight training, except for Ken Allen. Allen refers to the recent changes in the training pattern in so far as these affect PLAAF logistics:

On the training and operational side, the PLAAF has established a ‘Blue Army’ aggressor unit to simulate hostile forces against the ‘Red Army’ both offensively and defensively. Furthermore, PLAAF pilots have intensified their training under different weather conditions, at lower altitudes, and, most significantly, over water. They have also practiced rapid deployment to fixed and auxiliary airfields. As a result, the Air Force has had to adjust its logistics and maintenance training and operations to meet these new challenges.

Allen mentions that, according to PLAAF Commander Liu Shun Yao, “Air Force aviation units during 1996 exceeded their annual training plan requirements by 1.8 percent and flight safety has remained up to the world’s advanced level for 16 consecutive years.” But Allen cautions (in the footnote):

One has to take comments about the PLAAF’s annual training plan and safety record with a grain of salt. For example, the PLAAF was involved in the huge joint exercises opposite Taiwan in early 1996, which obviously increased the planned flight training effort. Further, according to a 1996 *Xinhua* report, a series of arresting cables installed at various units safely arrested more than 140 aircraft that either aborted takeoff or overshot the runway during landing. This report indicates that there were numerous accidents that took place before the arresting cables were installed. In addition, General Cao Shuangming, the PLAAF’s commander from 1992–1994, was relieved of duty because of an excess number of aircraft accidents during his time.

He also supports the estimates indicating that “the A-Class regiments, which have higher combat capability, now account for approximately 90–95 percent of the flight units’ combat regiments.”<sup>25</sup> But it is difficult to accept these figures at face value as the reality may be different.

According to Xue Litai:

In the ’80s, the PLAAF did not have enough money to focus its attention on flying training. PLAAF officers have always complained of lack of funds. Some 10 to 15 percent of PLA budgeted funds are lost every year to corruption. In addition a large portion of the funds go toward the payment of salaries. Even so, in recent years there has been considerable improvement in PLAAF flying training. The PLAAF reportedly sent a sizable number of pilots with more than 2,000 hours of flying experience to Russia for training on Su-27 aircraft. They have also selectively increased flying training in recent years.<sup>26</sup>

The aging and difficult-to-maintain J-6 (MiG-19) fleet comprises some 1,500 combat aircraft, or nearly 50 percent of the PLAAF, while the remaining half belongs to the reasonably modern category. Maintaining its operational readiness must be a difficult undertaking. At the rate of approximately 1.5 pilots per aircraft, the PLAAF would have to provide a minimum of 120 to 150 flight hours annually to 4,500–5,000 of its active-duty pilots. Allowing for those employed on staff and headquarters appointments it would mean that at least 4,000 pilots would need regular flight training. A “back-of-the-envelope” calculation would show that to provide 150 hours of flying to 4,000 pilots at 60–70 percent rate of serviceability/availability, the PLAAF fleet would have to fly some 285 to 333 hours per serviceable aircraft per year, or 24 to 28 hours per month—a huge task by any standards. It is a moot point if the 1,500-odd J-6 aircraft can be maintained at the 60–70 percent serviceability level essential to generate the sortie rates for such a mammoth flying task the whole year-round. It therefore appears that the PLAAF must usually concentrate only on the relatively modern 50 percent of its fleet, comprising the J-8, J-7, Su-27/30, and a much smaller portion of J-6 and Q-5 aircraft. Another report states, “the overwhelming majority of the flight

units' combat regiments conducted live-ammunition targeting practice in combat environment. This type of training accounted for 45 percent of the planned annual training time."<sup>27</sup> This further complicates the task of assessing the real potential of the PLAAF as one would have assumed that such live firing exercises were routine.

If all this is actually true, then the PLAAF must be maintaining a very high and nearly unbelievable level of daily availability of its huge combat fleet; this is extremely doubtful. This is one aspect of the PLAAF's capability that needs more detailed data and deeper analysis. The reason for such a long-winded analysis of the PLAAF training pattern is that without a comprehensive understanding of this facet of the Chinese air force, the assessment of its airpower capability would be open to conjecture. Chinese rhetoric that highlights even the so-called "successful arresting cable engagements" by the PLAAF aircraft further compounds the confusion.

## Implications for India

It is quite clear that there are a number of imponderables and uncertainties in evaluating the actual strength and capabilities of the PLAAF. It is even more difficult to assess how the Chinese would actually use it in any future conflict. It is also important to know if modern airpower would influence China's behavior towards its neighbors. Despite statements from the Chinese leadership that China has no ambitions in South Asia, over the years it has acted in a manner that indicates that its long-term objective was, and continues to remain, the strategic encirclement of India. China's long, enduring military and nuclear cooperation with Pakistan, including the sale of M-11 missiles and transfer of other sophisticated technologies to that country, is a case in point. China has recently completed the construction of a 12,400-foot long runway near Mandalay in Myanmar and is reportedly upgrading the airfield at Pegu on the southern coast of Myanmar. Myanmar does not possess aircraft that need these long runways, so the obvious conclusion is that China is extending its strategic reach into the Indian Ocean region.

Let us briefly look at the way China might use force to resolve a future problem. China's security dilemma, according to Hua Di, a noted rocket scientist who is currently in detention in China, is the "resolution of domestic issues while building its economic and military power."<sup>28</sup> He goes on to say, "the PLA does not have the capabilities nor the intention to launch a cross-strait amphibious beach-head landing operation against Taiwan." According to a U.S. scholar, Thomas Christensen, however, "If Beijing elites become convinced that relatively limited military capabilities and coercive tactics might allow for the politically effective use of force against Taiwan and, if necessary, American forces, then war between the United States and China becomes a very real possibility."<sup>30</sup> China may go on the offensive if pushed into a corner, especially on the Taiwan issue, if it fears that waiting too long to build its comprehensive national strength and modernize its military might become counterproductive. Christensen also suggests:

By the second half of this decade, China may have many more of the tools necessary to attempt a campaign of coercion against Taiwan, the United States, and U.S. regional allies, even if such an attempt might still appear incredibly imprudent on purely military grounds. Moreover, my Chinese interlocutors

have stated that for both political and military reasons, Beijing sees this decade as a closing window of opportunity for China on the Taiwan issue.<sup>29</sup>

It is evident that most Western scholars are obsessed with the Taiwan issue. However, what they ignore is the fact that China pursues long-term plans of finally reaching the status of a world power ready to challenge the current U.S. sole superpower status. A unilateral declaration of independence by Taiwan might be a contingency that the Chinese would undoubtedly prepare for, but they are unlikely to get involved in a war that is bound to upset their economic progress and the timetable to attainment of superpower status. In such an eventuality, China would have to resort to force, and the Chinese armed forces are perhaps not as yet ready to ensure a complete victory. It is therefore likely that China would try its utmost to postpone the resolution of the Taiwan problem until it has achieved a degree of domestic stability, or at least until its armed forces are reasonably modernized. According to some, the year 2010 might be the likely deadline for the achievement of these goals.

The same logic may be applied to China's policy towards India. It is clear that the present decade will be crucial for China's neighbors. The PLAAF is already numerically and even qualitatively superior to most of the air forces in the region, and the airpower balance vis-à-vis India is also steadily turning in China's favor. It is likely that by 2010 China will have fielded new cruise and short-range missiles, some 300–400 Su-27/30s, and the Super-7/J-10 combat aircraft that it is currently developing. China should also have resolved many organizational and doctrinal difficulties and built a sustainable training program for its air force personnel by that time. It will have improved its ability for technology absorption and integration and developed its surveillance and reconnaissance capabilities in space. In sum, China could well be a modern military, strategic, and economic power by the end of this decade.

Chinese history shows that China can act aggressively when strong and even at other times it can take risks. The Chinese understand power and respect strength. They hate to lose face and often expect the other side to take the initiative in starting negotiations. If their history of political signaling and deterrence calculus is anything to go by, they are somewhat cautious when using force. Although in many ways China has modernized in the last 20 years, it is probable that there will remain a high degree of continuity in its strategic behavior toward, and treatment of, foreign policy related issues. It is important to understand Chinese strategic culture. It is interesting to see how China has behaved or reacted to different crisis situations in the past. Allan S. Whiting, in *The Chinese Calculus of Deterrence*, about the 1962 Sino-Indian conflict, has this to say:

Basic to all Chinese calculations was a domestic economic crisis that had persisted for three years as a result of failure in the Great Leap Forward experiment of 1958–59, and was compounded by the withdrawal of all Soviet economic assistance in 1960 and by successive natural disasters. The internal crisis aroused anxiety in Peking [now Beijing] that external enemies would exploit PRC vulnerability, a fear that appeared justified by selected indicators of American, Nationalist, Indian, and possibly Russian intent.<sup>31</sup>

And after having given a very lucid account of the Chinese brand of controlled, measured use of force and crisis management, Whiting concludes, "In short, understanding China's

international behavior is both possible and essential. Understanding is not sufficient to guaranteeing peace, but misunderstanding increases the risk of war. . . . Korea, India, and Indochina testify to the blunders of past decisions. Hopefully they will serve to instruct future decisions.”<sup>32</sup> Remember that in 1962 China was at a fundamentally different stage in its state formation and nation-building effort. It is natural that its leadership was more acutely aware of China’s vulnerabilities. Overreaction was thus the natural outcome. Although much has changed in the quarter century since Whiting made these remarks, the situation in some ways is as risky. “China’s weakness is what makes it dangerous,” says Bates Gill.<sup>33</sup> “Knowing what weapons the Chinese have is the easy part. Knowing when, where, how, and why they will use them are far more important but difficult questions to answer.”<sup>34</sup>

For the present, “the PLA has nominated only one, the No. 13 Group Army, for possible operations against India, whereas five such Group Armies are allocated for Taiwan, indicating the low probability the Chinese attach to a local border war with India.”<sup>35</sup> Chinese leadership has time and again stated that guarding the country’s sovereignty and the reunification of Taiwan are their main objectives; it is often forgotten that Tibet and Xinjiang are the other two areas where China has serious concerns. It is thus not unrealistic to suggest that China could resort to use of force if its leadership perceived a threat to its sovereignty in these distant western regions. The Sino-Indian border dispute is unfortunately linked to Chinese fears of a possible problem in Tibet, and that makes it difficult to resolve. Although India has never allowed the exiled Dalai Lama to indulge in any political activity on its soil, even a casual meeting with Indian political leaders causes deep unhappiness in China.

Given this history of conflict and mutual suspicions it is easy to misunderstand each other’s motives. It is therefore imperative that India continues to maintain a reasonably modern airpower capability to meet any contingency in the high Himalayas. With the use of modern airpower elements such as AWACs it should be possible to get timely warnings so that nasty surprises are avoided and wars averted by timely political and diplomatic action. The Chinese are fast modernizing their airpower, and before too long the PLAAF will be fully ready for employment in any future war. As brought out earlier, conventional SRBMs and cruise missiles would likely play an important role both for political signaling and actual war fighting. Given the nature of the Chinese political system, the overarching role of the Communist Party, and the uniqueness of Chinese strategic culture, it is possible that Chinese airpower, however modern, may be utilized in ways far different from those seen in the recent Western experience (1991 Gulf War and 1999 Kosovo air campaign).



## Conclusion

Some Western experts believe that China does not presently pose a major military challenge to the United States because it would take China some 25 years to absorb RMA (revolution in military affairs) technologies. The crux of the argument, however, is that in the next decade or so its military reforms and modernization will have given China a decisive edge over its neighbors. China may take some time to develop its aerospace industry, but its air force is certainly no longer obsolescent. Its optimal employment in any future conflict is of course open to question. This is not only because the PLAAF has not made public the details of its strategy but also because of its subordinate role in the overall PLA system. Assessing the real capability of the PLAAF thus becomes increasingly difficult. Both India and China need to work together to better understand each other's concerns. Exchanging more civilian and military scholars would no doubt help clear the air. Some China scholars complain that few of the people trying to work on China's military capabilities seriously study the vast amount of material already available in Chinese and even English in open sources. This may be true to some extent, but scholars in China have relatively easy access to open source material in English, while it is extremely difficult for those outside China to come to definite conclusions because China is a closed society.

Would China readily resort to use of force? Would its growing military power influence its behavior? These are difficult questions, but it is certain that China would use its modern airpower to achieve its long-term national objectives, through coercion if possible, and through force if necessary. Another factor in China's military modernization is the role that Russia will play in the future. A cash-strapped Russia might be compelled to provide modern high-tech systems to the PRC even if it has some adverse long-term implications for its own security. Unlike India, China's economic modernization is undeniably wedded to its strategic goals. It is possible, therefore, that the process of China's military modernization may in fact accelerate in the years to come. The current domestic difficulties arising from widespread economic inequalities in the country may, at worst, slow down the process. The likely struggle at the next leadership change might also act as a damper, but if history is anything to go by, China will never lose its focus, even in difficult times. The Chinese term for "crisis" is *wei-ji*; the two characters denote danger and opportunity, respectively. The Chinese surely know how to make the most of a difficult situation.

The Chinese presently appear to be working on improving relations with India. It is therefore in India's interest that the border issue is resolved soon and to the mutual satisfaction of each side so that this major obstacle to improvement in relations is removed. It is also time for China to accept that India is destined to play a role commensurate to its size and strategic importance. It is difficult to forecast Chinese behavior in the future, but at least for the present they seem to say, "be reasonable, do it our way." India will have to build its national power and devise new and innovative ways to deal with the emerging Chinese challenge. As brought out earlier, the next five to 10 years are crucial. If India fails to ensure rapid economic growth and a general improvement in its domestic conditions, it will be difficult to muster enough strength, and above all self-confidence, to deal firmly yet constructively with China. In such an event, India may have to be content with its present subsidiary role in Asia.

## Notes

<sup>1</sup> For further discussion of this topic, see Valerie Niquet, “China in Asia: A Case of Distorted Concept of Balance of Power,” *USI Journal* (New Delhi) 130 (July–September 2000): 483–487. The author argues that China will continuously expand its control over its peripheral areas.

<sup>2</sup> Zou Yunhua, “Chinese Perspectives on the South Asian Nuclear Tests,” working paper, Center for International Security and Cooperation, Stanford University, Stanford, Calif., January 1999: 20.

<sup>3</sup> Amitabh Mattoo, “Shadow of the Dragon—Indo-US Relations and China,” in *Engaging India*, ed. Gary K. Bertsch, Seema Gahlaut, and Anupam Srivastava (New York and London: Routledge, 1999), 219.

<sup>4</sup> This observation is based on the author's conversations with Chinese scholars.

<sup>5</sup> A. K. Sachdev, “Chinese Missiles: Winning the Limited War,” *Strategic Analysis* (New Delhi) 24, no. 3 (June 2000): 525. Website <http://www.idsa-india.org/an-content.htm>.

<sup>6</sup> Richard M. Bueschel, as quoted in Sachdev, *ibid.*

<sup>7</sup> “PLAAF Order of Battle,” website <http://www.fas.org/nuke/guide/china/agency/plaaf-orbat.htm>. This is believed to be one of the more authoritative websites on Chinese and other militaries.

<sup>8</sup> John Wilson Lewis and Xue Litai, “China's Search for a Modern Air Force,” *International Security* 24 no. 1 (summer 1999): 74. A very comprehensive article on the decision-making on and impediments to PLAAF modernization.

<sup>9</sup> *Ibid.*, 78.

<sup>10</sup> Richard D. Fisher Jr., “Questions about the Air Battle Dimension of the PLA's Developing Information-Strike Combine” (paper presented at the NDU Center for the Study of Chinese Military Affairs, Washington, D.C., 27 October 2000), 7. Available at [http://www.ndu.edu/inss/China\\_Center/paper8.htm](http://www.ndu.edu/inss/China_Center/paper8.htm), cited with the author's permission.

<sup>11</sup> *China Daily*, 24 June 1996, 2.

<sup>12</sup> *Jane's Defence Weekly*, 16 August 2000, 12.

<sup>13</sup> Mark Burles and Abram N. Shulsky, *Patterns in China's Use of Force: Evidence from History and Doctrinal Writings* (Santa Monica: RAND, 2000), 52.

<sup>14</sup> For a better understanding of this strategy, see William C. Story Jr, *Third World Traps and Pitfalls: Ballistic Missiles, Cruise Missiles, and Land-Based Airpower* (Maxwell Air Force Base, Ala.: Air University Press, 1995).

<sup>15</sup> *Jane's Defence Weekly*, 12 January 2000, as quoted in *Strategic Digest* (New Delhi), June 2000, p. 864. Also see Zalmay M. Khalilzad et al. in *The United States and a Rising China* (Santa Monica, Calif.: RAND, 1999), 78. The report suggests that by 2015, the Chinese could field hundreds of accurate conventionally armed surface-to-surface cruise and ballistic missiles.

- <sup>16</sup> June Teufel Dreyer, in *China's Military in Transition*, ed. David Shambaugh and Richard H. Yang (Oxford: Clarendon Press, 1997), 71.
- <sup>17</sup> International Institute for Strategic Studies, *The Military Balance 2000–2001* (London: IISS, 2001), 179.
- <sup>18</sup> Interviews with Xue Litai, China scholar at the Center for International Security and Cooperation, Stanford University, May–July 2001.
- <sup>19</sup> Ken Allen, “China’s Aviation Capabilities” (paper presented at a conference at National Defense University, Washington, D.C., on 26–27 October 2000), 3. Cited with the author’s permission, available at [http://www.ndu.edu/inss/China\\_Center/paper1.htm](http://www.ndu.edu/inss/China_Center/paper1.htm). Also personal conversations with the author of 2 July 2001.
- <sup>20</sup> Lewis and Litai, see note 8 above, 86.
- <sup>21</sup> Michael Horowitz and Dan Reiter, “When Does Aerial Bombing Work?” *The Journal of Conflict Resolution* 45, no. 2 (April 2001): 149. This is an excellent and updated analysis of the efficacy of aerial bombing and its likely effects in various circumstances.
- <sup>22</sup> *Ibid.*, 153.
- <sup>23</sup> Daniel L. Byman and Mathew C. Waxman, “Kosovo and the Great Air Power Debate,” *International Security* 24, no. 4 (spring 2000): 38.
- <sup>24</sup> “PLAAF Order of Battle,” website <http://www.fas.org/nuke/guide/china/agency/plaaf-orbat.htm>, is a good example of how confusing the details can be. Federation of Atomic Scientists (FAS), a reputed think tank, also mentions on the same page that, “Detailed information concerning the PLA order of battle is not readily available in the unclassified literature.” It adds that while the *Directory of PRC Military Personalities* (produced for many years under the sponsorship of U.S. Military Liaison Office at the U.S. Consulate in Hong Kong), the only source of such information, provides reasonably illuminating depiction of the PLA ground forces order of battle, coverage of the PLA Air Force is rather more fragmentary. At the Division level, only 29 of the reported 45 Air Divisions are even alluded to in the directory, and of these only half a dozen are identified with any specificity. The directory provides no order of battle data for the Chengdu Military Region, and only fragmentary insight into even the frontline Nanjing Military Region.
- <sup>25</sup> Ken Allen, “PLA Air Force Logistics and Maintenance: What Has Changed?” in *The People’s Liberation Army in the Information Age* (Santa Monica, Calif.: RAND, 1999), 84.
- <sup>26</sup> Xue Litai, see note 18 above.
- <sup>27</sup> Allen, see note 25 above, 85.
- <sup>28</sup> Hua Di, “China’s Security Dilemma to the Year 2010,” working paper, Center for International Security and Cooperation, Stanford University, Stanford, Calif., October 1997.
- <sup>29</sup> Thomas J. Christensen, “Posing Problems Without Catching Up: China’s Rise and Challenges for U.S. Security Policy,” *International Security* 25, no. 4 (spring 2001): 10.
- <sup>30</sup> *Ibid.*, 39.
- <sup>31</sup> Allan S. Whiting, *The Chinese Calculus of Deterrence—India and Indochina* (Ann Arbor, Mich.: The University of Michigan Press, 1975), xiv.
- <sup>32</sup> *Ibid.*, 248.
- <sup>33</sup> Bates Gill, “China’s Weakness Is What Makes It So Dangerous,” *Los Angeles Times*, 6 April 2001. These remarks come in the aftermath of the recent spy-plane incident.
- <sup>34</sup> Bates Gill, in a testimony to the U.S. House of Representatives Armed Services Committee on Chinese Military Power, 19 July 2000, available at <http://www.brook.edu/views/testimony/gill/20000719.htm>.
- <sup>35</sup> Xue Litai, see note 18 above.

## Appendix

### The Present Balance

#### PLAAF and Strategic Forces

The following figures are taken from the IISS publication *The Military Balance 2000–2001* (London: International Institute for Strategic Studies, 2001), the latest open source data available at this time. The strength of PLAAF's combat aircraft is over 3,000, with some armed helicopters. In addition, there are 507 shore-based combat aircraft and 37 armed helicopters with the PLA Navy.

#### *Bombers*

120 H-6E/F (Tu-16) (of these some may be nuclear capable and 30 modified to carry YJ-6/C601 ASUWM).

#### *Fighters*

400 J-7II/IIA/IIH/IIM, 100 J-7III, 200 J-7E, 100 J-8A/E, 150 J-8B/D, 65 Su-27K/UBK Flanker (J-11). Total 1,015 fighters (J-8 with GA capability).

#### *FGA/Strike*

First of 40+ Su-30MKK delivered but not yet entered service, 300 Q-5, some 60 regiments with about 1,500 J-6/B/D/E. Total 1,840 FGA/Strike aircraft.

#### *Reconnaissance/ELINT*

Estimated 290 40 HZ-5, 100 JZ-6, some JZ-7, and 2 Tu-154M. Total less than 400 Recce/ELINT aircraft.

### *Transport*

Estimated 475 including some 15 Tu-154M, 2 IL-18, 14 IL-76 MD, 300 Y-5, 45 Y-7/An-24/An-26, 68 Y-8/An-12, 15 Y-11, 8 Y-12, 6 Boeing 737-200 (VIP), 2 CL-601 Challenger.

### *Tankers*

6 HY-6 tankers (modified Tu-16 bombers).

### *Helicopters*

Some 170 including 6 AS-332 (VIP), 4 Bell 214, 30 Mi-8, 100 Z-5, 30 Z-9.

### *Training*

Some 200 including HJ-5, JJ-6, JJ-7, JL-8, K-8, PT-6 (CJ-6).

### *Strategic Missile Forces*

ICBM: 20+ DF-5 (CSS-4, range 13,500 km)

IRBM: 20+ DF-4 (CSS-3, range 8,500 km), 30+ DF-3A (CSS-2, range 5,000 km?), 50+ DF-21 (CSS-5). At least three brigades deployed.

SLBM: 1 Xia class SSBN with 12 CSS-N-3 (JL-1 & JL-2?).

SRBM: About 20 DF-15 launchers with 200+ missiles (CSS-6/M-9) (range 600 km). One brigade deployed. 40 DF-11 (CSS-7/M11) (range 120–300+ km). Two brigades deployed.

## **Indian Air Force**

The IAF possesses some 774 combat aircraft and 34 armed helicopters.

### *Fighters*

Total 20 squadrons, 4 with 66 MiG-21FL/U, 10 with 169 MiG-21bis/U, 1 with 26 MiG-23MF/UM, 3 with 64 MiG-29, 2 with 35 Mirage-2000H/TH (believed to have secondary GA capability), plus 8 Su-30 MK. Total 368 fighters.

### *FGA/Strike*

Total 18 squadrons, 1 with 10 Su-30K, 3 with 53 MiG-23 BN/UM, 4 with 88 Jaguar S (I), 6 with 147 MiG-27, 4 with 69 MiG-21MF/PFMA. Total 367 FGA aircraft.

### *Reconnaissance*

2 squadrons, 1 with 8 Canberra (6 PR-57, 2 PR-67), 1 with 6 MiG-25R and 2 MiG-25 U.

### *Maritime Attack*

6 Jaguar S (I) with Sea Eagle missiles.

### *Armed/Attack Helicopters*

3 squadrons with 32 Mi-25.

### *ECM/ELINT*

4 Canberra B (I) 58 (ECM target towing, plus 2 Canberra TT-18 for target towing), 2

Boeing-707, and 2 Boeing-737 for ELINT.

*AEW*

4 HS-748

*Tankers*

6 IL-78. (In reality the IAF has no tankers; this is an incorrect assessment.)

*Training*

Some 370 assorted aircraft including Kiran, Mk I&II, Iskara, MiG-29, HS-748 transports, and some 20 Chetak (Aloutte) light helicopters.

*Transport*

12 squadrons, 6 with 105 An-32, 2 with 45 Do-228, 2 with 28 HS-748, 2 with 25 IL-76.

*Helicopters*

11 squadrons with 73 Mi-8, 50 Mi-17, 10 Mi-26 (heavy tpt).

*VIP*

1 HQ squadron with 2 Boeing 737-200, 7 HS-748, 6 Mi-8.

*Strategic Forces*

1 SSM regiment with 3-5 launchers Prithvi missiles.

**Pakistan Air Force**

Although this paper essentially deals with the balance between the IAF and the PLAAF, it would be useful to list the assets of the PAF as it ties down much of India's military hardware for a possible war on India's western front. The PAF is reported to possess 353 combat aircraft (with 20 armed/attack helicopters with the Army).

*Fighters*

12 squadrons, 3 (1 OCU) with 40 F-6/FT-6 (J-6/JJ-6), 2 (1 OCU) with 32 F-16 (22 A, 10 B), 6 (1 OCU) with 77 F-7P/FT-7 (J-7), 1 with 43 Mirage III O/ 7-OD. Total 192 fighters.

*FGA*

6 squadrons, 1 with 16 Mirage (13 IIIEP some with AM-39 ASM, 3 IIIDP [Trg]), 3 squadrons (1 OCU) with 52 Mirage 5 (40 5PA/PA2, 10 5PA3 [ASW], 2 5DPA/DPA2), 2 squadrons with 42 Q-5 (A-5 III Fantan), some FT-6. Total 115 FGA aircraft. 5 combat aircraft of the Pakistan Navy operated by the PAF, 9 armed helicopters and 1 squadron with 3 Atlantique plus 2 in storage and 2 P3C operated by the PAF. 2 helicopter squadrons with 6 Sea King mk45 (ASW), 3 Lynx HAS mk-3 (ASW).

*Reconnaissance*

1 squadron with 11 Mirage IIIRP also capable of GA.

### *ELINT/ECM*

2 Falcon DA-20 aircraft.

### *Training*

Assortment of some 148 aircraft including FT-5, FT-6, FT-7 T-37 B and 12 K-8 (Karakoram trainer co-produced with China).

### *Transport*

12 C-130 (11 B/E, 1 L-100), 2 Boeing 707, 1 Boeing 737, 1 Falcon 20, 2 F-27-200, 2 Y-12 (II).

## **Assessment**

Even a cursory glance at the figures quoted above shows that some 50 percent of the PLAAF combat strength comprises J-6 (MiG-19) aircraft, which can only be categorized as obsolete. The remaining 50 percent are of the second and third generation, and the PLAAF is therefore numerically and even qualitatively superior to the IAF. When one takes into consideration the combat strength of the PAF, the air arm of the other neighboring country, a close ally and an all-weather friend of China, the imbalance becomes sharper. Given the enduring defense cooperation relationship between China and Pakistan and the fact that China has admitted to selling some missiles to that country, it becomes difficult to keep Pakistan out of the calculation in such a comparison. There are, of course, a host of other issues that deserve a more careful and detailed consideration while assessing the overall airpower balance in the region.



