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China's Aerospace Potential: Strengths and Prospects

Vishal Nigam

Introduction

Extraordinary events in geopolitics have redefined China's contemporary history: the breakup of Soviet Union; the end of Cold War; and China's realignment with Russia and the erstwhile states of the Soviet Union. China's membership in the World Trade Organisation (WTO) starting in 2002 was a game changer, which had a profound impact on the country's aviation industry. This, in turn, resulted in China's integration with the world economy. As a result, China has made substantial progress in Science and Technology, nurturing innovation by increasing investments in R&D and administering key changes in socioeconomic policies related to education, resource management and infrastructure development.

In the post-Mao era, once the economy relatively stabilised, China shifted its focus to defence. It substantially increased budgetary allocations on defence by keeping it proportional to the country's rapid economic development. For instance, official Chinese government figures from the year 2000 indicate that while average GDP growth hovered at 12 percent, military expenditure grew by 15 percent. The overall defence budget in 2000 was $15 billion, rising to $106 billion in 2013, making it the largest in Asia and second largest in the world.[1] Though China has scurried to modernise its military industry, its defence arsenal continues to retain an antiquated look compared to the US.

Without doubt, China's military modernisation is one of the emerging threats post–Cold War, manifested by the country's growing assertiveness towards its neighbours. China continues to claim that its military strength is aimed at safeguarding sovereignty, national security, and territorial integrity. However, a spiraling defence budget likely to touch $250 billion and R&D allocation of a whopping 2.5 per cent of GDP will have repurcussions on regional security. It would be interesting to analyse China's approach to South China Sea sovereignty claims even as it modernises its defence arsenal, increasingly signifying an 'unpeaceful rise'. The double-digit increase in China's year-on-year military spending is bound to alter the assertion of an overall 'peaceful rise' foreign policy doctrine (See Table 1).

Table 1

	PERCENTAGE OF MODERN SYSTEMS BY YEAR					
	2000	**2003**	**2004**	**2007**	**2008**	**2009**
NAVAL SURFACE FORCES[1]	3%	9%	7%	33%	25%	25%
SUBMARINE FORCES[2]	8%	9%	9%	40%	47%	50%
AIR FORCE[3]	2%	10%	10%	20%	20%	25%
AIR DEFENCE FORCES[4]	5%	10%	10%	34%	34%	42%

Modern systems are characterised as
1. Multi-mission platforms
2. Platforms capable of firing ASCM
3. 4th generation platforms
4. S300 PMU/PMU1 and HQ 9

China anticipates that the regional balance of power will shift in its favour. Hence, it is making all efforts to erase the antiquated look of its military industry and build capabilities to match the world's best. From closely observing China's military modernisation, it is evident that defence restructuring is rooted not only in acquisitions but also in indigenous development of weapons systems.

China is developing institutions—with a pool of natural-science engineers—aimed at transforming the country's defence economy from an imitator to innovator. On one hand, China acknowledges being the weaker force on most battlefields; on the other, it does not consider this a limitation or decisive factor, given its penchant for unorthodox thinking. In its opinion, future wars will be characterised by greater use of airborne assets, missiles, cyber and space-based capabilities. China is therefore developing capabilities to modernise PLAAF, PLAN and the second artillery. Simultaneously, it has increased the number of members in the Central Military Commission (CMC) from these wings.

The PLAAF appears well-poised to transform into a strategic force by building capabilities in long-range strikes and integrated air and space operations. Its leadership is also making political inroads. Since 2004, all PLAAF commanders have occupied a seat in the CMC. Gen. Ma Xiaotian and Lt.

Gen. Liu Yazhou are likely to be PLAAF's next-generation leaders. While Gen. Ma is considered close to Xi Jinping, Liu is the only PLA general educated at California's Stanford University, and he has written extensively on PLAAF's strategy. Gen. Xu Qiliang, the present commander of PLAAF, may be elevated to either Vice Chairman of CMC or Defence Minister. As a result, PLAAF could have two CMC representatives—an unprecedented situation indicating a shift from earlier land force primacy. A larger PLAAF representation in the CMC and state council would help it to have a greater say in larger budgetary allocations, force restructuring, appointments and weapon acquisition in the coming years.[2]

PLAAF's development and modernisation strategy can be divided into three phases. The first phase started after the Civil War and ended when Deng Xiaoping took the helm; the second (1979-93) was a period marked by the 'Four Modernizations Program'; and the third phase commenced in 1993 with PLAAF announcing a long-term modernisation plan. Immediately after the Korean War in 1954 the PLA strategised to acquire ground, air, and naval assets to defend China and started developing Military Industrial Complexes (MIC) with Soviet assistance. In the second stage, PLAAF was trapped in past thinking, evident from its force structure consisting of more than 4,000 J-5, J-6 and J-7 types of antiquated aircraft. Simultaneously, the force was trying very hard to evolve into a sophisticated arm of the PLA. The transition of PLAAF also coincided with the transition of the Chinese economy—triggering the 'non-peaceful rise' of China.

Building Capabilities

Post-1993, the main driver for China's military modernisation was American success in the 42-day Gulf War. The absolute dominance of the US Air Force—that devastated Iraq—left China with no choice but to accept the decree of Col. John Warden III, which stated, "No country had won a war in the face of enemy air superiority, no major offensive ever succeeded against an opponent who controlled the air, and no defence sustained against an enemy who had air superiority."[3] In this context, the first Gulf War was a wake-up call for the Chinese, since the last thing they wanted was to have the Americans posing a threat from the Pacific.

Hence, PLA embarked on an extensive modernisation plan for the air force. First, if would deter American presence. Second, it would emerge as a global power centre with credible hard power to further guide its strategic options in South Asia. The period also witnessed a paradigm shift in PLA's strategy from active defence to a more offensive posture. While the 2004 defence White Paper highlighted the PLA's focus on command of air and sea and long-range precision strike capability, the 2010 White Paper particularly mentioned PLAAF's role as a strategic arm of the PLA.

PLAAF is building capabilities to execute long-range precision strikes beyond land frontiers. For over a decade, PLAAF has been modernising its force structure. It has reduced the number of third—and below—generation fighters by 70 percent and increased third-plus generation fighters

with larger radius of action. It has likewise upgraded PGMs and BVRs from 150 to almost 600 aircraft. Furthermore, it plans to increase the number of fourth-generation aircraft with modern avionics, radars, and weapon systems. While the J-10Bs and J-11Bs have combat capabilities that far exceed their baseline versions, PLAAF has at least a dozen AEW&C aircraft, like KJ-200 and KJ-2000. The H-6 continues to be its front-line cruise missile shooter. PLAAF is also in the process of developing other fighter jets, like J-11B, JH-7A, J-20 and the military transport aircraft Y-20. All these aircraft are highly capable delivery systems expected to surface sometime during this decade. These weapons systems are being developed by Luoyang Optoelectro Technology Development Center, and they include air-to-air missiles, guided bombs, and air-to-surface missiles.

China has developed the PL-10 missile modelled on the A-Darter missile and derivatives like the PL-11 and PL-12 modelled on Aspide and AIM-120 AAMRAM. PLAAF is carrying out tests on the PL-21D and results indicate that the performance of this missile exceeds that of the AIM 120D. China is also developing the FT series, modelled on the JDAMS with a CEP (circular error of probability) between 10 to 20 metres, and the LS-6, which could subsequently be used for internal carriage in a J-20. The Kh-59—along with PL-12C, PL-12D, and PL-21D—will add more teeth to the weapons carried on board the future fourth—and fifth—generation fighter aircraft.[4]

The recent use of UAVs in military campaigns in Iraq, Afghanistan and Libya has attracted China's attention. Several institute like the Northwestern Polytechnical, Beihang and Nanjing University of Aeronautics and Astronautic are engaged in UAV research and development programmes. Meanwhile, China's Aerospace Science and Technology Cooperation is developing the CH3, which could be equipped with battlefield reconnaissance capability, fire adjustment data, relay intelligence collection, and pylons capable of carrying the FT-5. There is speculation that 20 such UAVs could be exported to Pakistan. China is also developing the WJ 600, a jet-powered multi-mission UAV capable of sending target information for a follow-on anti-ship missile attack, and the ASN-229.[5]

China has formerly demonstrated its ASAT capabilities. With satellite jammers and microwaves as future weapons, it is poised to become a formidable adversary. China's air defence capability has been stepped up from four battalions to 16, consisting of S300s, S300 PMU1s, and PMU2s. If China proceeds to acquire S400s from Russia, it would be well-positioned to undertake both offensive and defensive operations in an informatised battlefield. China has completed an air intelligence radar network covering almost the entire country and appears to be preparing to take on its enemy's BVR, long-range strike and anti-radiation attacks, which demand that air defence units must have the capability to destroy an enemy target and conserve their own strength and seize opportunities for combat.

PLAAF strength comprises 30,000 troops under the 15 Corp. The 15 Corp, with IL-76, Y-7, Y-8, Mi-8, Mi-17, S-70C, and Z-9 WE, can deploy a rapid reaction force within China in less than ten hours. Such maneouvres have been practiced in peace-time exercises, like the Stride 09. No wonder, the

pace of aerospace development in China is drawing attention and creating new complexities in Asia's geopolitics. While China is manoeuvring to shift the balance of power in its favour, the US is seeking new bases in U Tapao in Thailand, Cam Ranh Bay (Vietnam) and Clark Bay (Philippines) as part of its adjustment strategy in the Asia Pacific.

AVIC (Aviation Industry Corporation of China) has displayed a level of buoyancy in the twenty-first century by pursuing a development strategy rooted in liberalisation, competition and cooperation. Although technology was a problem, China used the incremental transfer of technology to leap-frog and acquire relevant technology, which has helped to guarantee the country's national security.[6]

Hence, China's aviation industry, once hampered by the unwillingness of conservative leaders to implement path-breaking reforms, reduced inefficiency and redundancy transformed into a high-growth industry by registering profits in excess of $ 1.5 billion dollars.[7] Also, there has been a shift in guiding principles driving the aviation industry. There was an earlier obsession with quantity over quality. Now China has enabled the AVIC to match-up with global standards, by 2020 or 2030.

China accepts S&T as a zero-sum game. It also understands the risk of falling into a trap by depending on western powers for critical technology, which would have an adverse impact on their security paradigm. In their strategy, technology will be key to Comprehensive National Power, which can only be achieved through incremental innovation, including design and component innovation and export of high-end technology.

The civil aviation market in China has also been growing at double-digit rates with a capacity to absorb over 3,500 aircraft in the coming decade. Therefore, industries like GE, Honeywell, Rockwell, Collin and Eaton in the West view China as a lucrative business opportunity.[8] It is evident that China's aerospace industry is reaping benefits from increasing participation with the West and Russia.

China is developing high-technology capabilities to improve upon Russian weapon systems and benchmark standards in the West. While the West and Russia must look at China as a proscribed market during tough economic times, the trends suggest that Russia's past as an arms exporter could well become China's future. Chinese exports have surged to $8 billion dollars. The country aims to transform from a low to high-end manufacturing and R&D hub by the middle of this century.

The gap between India and China in technology competitiveness has widened sixfold in the past five years, with India sliding to 56th and China moving up to 26th, according to the Global Competiveness Report (GCR).[9] From India's perspective, the gap can be bridged through efficient governance, reforms, and energising the aerospace sector through long-term public-private partnership. In India, growth in the defence and civil aviation sectors is expected to be in the double

digits, driven by procurements. Hence, during western economic stagnation, opportunity in the aerospace sector is knocking at India's door. However, if India fails to capitalise on such opportunities, it will be blown away by the prevailing 'westerlies', only to be overshadowed by the dragon.

ABOUT THE AUTHOR

Vishal Nigam was commissioned in the Indian Air Force as a Navigator. With a career spanning 23 years, he is a qualified Instructor and is now actively involved in geopolitical and strategic analysis pertaining to the changing trends in the aviation sector. He is currently working at Centre for Air Power Studies, focusing on issues related to national security, defence, and aerospace industry in the evolving strategic and international security environment.

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Observer Research Foundation,
20, Rouse Avenue, New Delhi-110 002
Phone: +91-11-43520020 Fax: +91-11-43520003
www.orfonline.org email: orf@orfonline.org