

CHINA'S AIR FORCE MODERNISATION AND FUTURE
PROSPECTS FOR PAKISTAN: STRATEGIC IMPACTS ON THE INDO-
PACIFIC

Maheera Munir

Centre for Aerospace and Security Studies

July 2024

ABSTRACT

The strategic shift in China's national security strategy from 'defence' to 'active defence' underlines crucial evolution in Chinese Air Force. Rapid modernisation has put the People's Liberation Army Air Force (PLAAF) on the trajectory to become the world's leading air force by 2049. Concurrently, Pakistan being a close strategic partner of China, has significantly benefitted from this modernisation through joint projects like the JF-17 Thunder, acquisition of J-10C, Wing Loong drones, Chinese air defence system, and numerous other air defence capabilities. This paper argues that Pakistan-China air defence cooperation has not only reduced Pakistan's reliance on its traditional defence suppliers but has enhanced its position in the Indo-Pacific strategic landscape as well as in the global defence market. However, there are certain resource limitations both in terms of capital and technological skills for which Pakistan needs to enhance its air defence cooperation with China. While the future prospects underscore acquisition of J-35 stealth fighters and upgraded unmanned aerial systems, Pakistan-China defence cooperation must expand to collaboration in the R&D of sixth-generation aircraft, and other newer technologies. These steps will significantly enhance Pakistan's qualitative advantage against regional adversaries in South Asia and the wider Indo-Pacific.

Keywords: Pakistan, China, military modernisation, air defence cooperation, airpower, India, Indo-Pacific,

TABLE OF CONTENTS

ABSTRACT	i
1. INTRODUCTION.....	1
2. LITERATURE REVIEW	3
3. CHINA’S AIR FORCE MODERNISATION	3
3.1 Strategic Shift towards Active-Defence.....	5
3.2 China’s Airpower Capabilities	7
4. PAK-CHINA AIR DEFENCE COOPERATION	10
4.1 JF-17 Thunder: A Benchmark Project.....	11
4.2 J-10C: Qualitative Edge against India.....	12
4.3 UASs, Air Defence and Aerospace Cooperation	14
5. PAKISTAN’S REDUCED RELIANCE ON TRADITIONAL PARTNERS	14
6. FUTURE PROSPECTS.....	16
6.1 J-35 Stealth Fighters.....	17
6.2 Upgraded Wing Loong Drones	19
6.3 Sixth-Generation Aircraft	19
6.4 Challenges in Cooperation	21
7. POLICY RECOMMENDATIONS.....	22
7.1 Joint Aircraft Maintenance and Personnel Training with China.....	22
7.2 Formulate a Joint Export Strategy	22
7.3 Engage China through NASTP for 6 th -generation R&D	23
7.4 Establish a Joint Institution for Cooperation on Advanced Defence Technologies	23
8. CONCLUSION	24
BIBLIOGRAPHY	26

1. INTRODUCTION

The perception of airpower revolutionised after the deployment of precision weapons and advanced aerial platforms for the Operation Desert Storm in the Gulf War, demonstrating the ability of air power to achieve strategic objectives in shorter time and using minimal force.¹ With the turn of the century, the role of airpower considerably increased in the warfare, evident from Western strategy in Afghanistan, Iraq and the wider Middle East during the war on terror. As China's economy positioned it as a major power, military modernisation appeared to be the next key step in its upward trajectory. Due to increasing strategic rivalry with the US and expanding threat spectrum at both regional and global level, China's national security strategy maintains an 'active defence' posture.

Consequently, China has developed advanced air power capabilities including stealth fighters, air defence systems, missiles, unmanned aerial systems, etc., leading to exceptional standing of the People's Liberation Army Air Force (PLAAF) as the world's second largest air force. Pakistan, being a close strategic partner, has largely benefitted from the modernisation of Chinese Air Force through greater air defence cooperation such as joint production of the exemplary JF-17 Thunder. Shared strategic interests such as common security threat from India, India-US cooperation as a destabilising factor in South Asian region, and China's economic and geopolitical

¹ Daryl G. Press, "The Myth of Air Power in the Persian Gulf War and the Future of Warfare," *International Security* 26, no. 2 (2001): 8, <https://doi.org/10.1162/016228801753191123>.

interests in the wider Indian Ocean Region have greatly pushed Pakistan and China together for defence cooperation.²

This paper argues that PLAAF's modernisation under its new strategic posture has paved the way for greater air defence cooperation between China and Pakistan, reducing Pakistan's reliance on traditional defence partners, enhancing Pakistan's qualitative edge against India, and positioning Pakistan as a significant stakeholder in the Indian Ocean Region and by extension in the strategic environment of the Indo-Pacific Region. In order to uphold its qualitative edge, Pakistan must strengthen its air defence cooperation with China through, but not limited to, J-35 stealth fighter jets and upgraded Wing Loong drones as well as the 6th generation aircraft R&D.

This paper briefly provides an overview of China's Air Force modernisation and its airpower capabilities. It discusses China-Pakistan air defence cooperation. It further explores future prospects of cooperation between China and Pakistan. Throughout the discussion, the paper analyses strategic influence of China-Pakistan airpower cooperation on the Indo-Pacific landscape, concluding that China-Pakistan cooperation is largely contributing to strategic stability in the region where hegemonic forces are actively working towards destabilisation and intra-regional divide in the form of great power contestation. Lastly, it provides recommendations to overcome challenges in the way of Pakistan-China air defence cooperation and to strengthen their strategic partnership.

² Muhammad Jawad, Sobia Jamil, and Dr Ashfaq Ahmed, "Pakistan-China Military and Security Ties: A Qualitative Analysis," *Pakistan Social Sciences Review* 3, no. 2 (2019): 280, [https://doi.org/10.35484/pssr.2019\(3-ii\)22](https://doi.org/10.35484/pssr.2019(3-ii)22).

2. LITERATURE REVIEW

Since the beginning of the 21st century, China's military modernisation has become a subject of great interest in the context of power politics. The interest has grown with the number of books, research articles and reports written on the subject matter. This paper consulted numerous scholarly works to explore China's military modernisation, its benefits to Pakistan and its impacts on the Indo-Pacific strategic landscape. China's Defence White Paper titled "China's National Defence in the New Era" published in 2019 stands as the most significant document as it indicated the shift in China's national defence strategy against incumbent threats in the new age of great power contestation and the gradual transition of the world order from unipolarity to multipolarity. Xiaobing Li, in his research article, underlines this very shift to highlight China's increasing role in future warfare as a forward and active force with unparalleled airpower capabilities.³ Similarly, Liu Xuanzun, a seasoned reporter at the Global Times, China's official daily tabloid newspaper, regularly covers air defence developments which help provided a detailed overview of China's recently acquired airpower capabilities. He has underpinned China-Pakistan air defence cooperation as a win-win scenario as it helps China attract potential buyers from Middle Eastern and African regions. Furthermore, Muhammad Jawad et al. assert that the ascent of China-Pakistan military relations in the past decade has provided Pakistan opportunities to diversify its defence suppliers after episodes of turbulent relations with the US following war on terror.⁴ Muhammad Zubair Iqbal et al. argue that increase in China's airpower capabilities has allowed both

³ Xiaobing Li, "The Dragon's Wing: The People's Liberation Army Air Force's Strategy," *Journal of Indo-Pacific Affairs* 5, no. 4 (2022): 125-36, <https://media.defense.gov/2022/Jul/31/2003046326/-1/-1/1/JIPA%20JULY-AUGUST%202022.PDF/JIPA%20JULY-AUGUST%202022.PDF>.

⁴ Muhammad Jawad, Sobia Jamil, and Dr Ashfaq Ahmed, "Pakistan-China Military and Security Ties," 279-96.

China and Pakistan to enhance soft balancing as well as hard balancing against the Indo-US cooperation aimed at containing China and rendering India as the regional anchor.⁵ Sameer Lalwani, in his research report, asserts China-Pakistan military relationship as a threshold alliance in the Indian Ocean Region.⁶ Similarly, Sadaf Farooq et al. contend that the increasing strategic complexities due to Indo-US strategic partnership has created a volatile regional environment, arising the need to further explore defence cooperation opportunities between Pakistan and China.⁷ Muhammad Ali et al. argue that the regional status quo in South Asia now faces several uncertainties as India attempts to assert itself as the uncontested hegemon in the region.⁸ Dr Masood ur Rehman Khattak et al. explore the same development from strategic lens as they underline changes in the Indian military strategy and a renewed focus on sub-conventional warfare resorting to insurgent elements, proxy war, cyber and information warfare.⁹

However, while the available literature largely explores the existing dynamics in South Asia and the Indian Ocean, there is a need to expand the lens to the broader Indo-Pacific in order to assert Pakistan as a significant stakeholder in the region. Secondly,

⁵ Muhammad Zubair Iqbal and Musarat Amin, "Vacillation between Soft and Hard Balancing: China-Pakistan versus Indo-US Strategies," *Strategic Studies* 36, no. 1 (2016): 74–91, <https://www.jstor.org/stable/48535935>.

⁶ Sameer Lalwani, "A Threshold Alliance: The China-Pakistan Military Relationship" (Washington, DC: United States Institute of Peace, March 2023), https://www.usip.org/sites/default/files/2023-03/sr-517_threshold-alliance-china-pakistan-military-relationship.pdf.

⁷ Sadaf Farooq, Sadia Kazmi, and Javaria Javed, "Indo-US Strategic Partnership: Implications for Pakistan," *Policy Perspectives* 15, no. 1 (2018): 3-20, <https://www.jstor.org/stable/10.13169/polipers.15.1.0003>.

⁸ Muhammad Ali and Syed Mussawar Hussain Bukhari, "Indian Military Doctrine and its Impact on South Asia's Strategic Stability," *Margalla Papers* 26, no. 1 (2022): 74-84, <https://doi.org/10.54690/margallapapers.26.1.98>.

⁹ Dr Masood ur Rehman Khattak, Dr Muhammad Khan, and Dr Ghulam Qumber, "Evolution of New Indian Military Strategy: Implications for Pakistan," *Margalla Papers* 23, no. 1 (2019): 139-49, <https://margallapapers.ndu.edu.pk/site/issue/view/14/97>.

while there is a great deal of literature on past and current Pakistan-China air defence deals and projects, it is important to adopt a futuristic approach to identify newer and better opportunities of air defence cooperation which Pakistan can leverage to maximise its strategic gains and long-term advantages. This paper attempts to cover both of these gaps in its discussion.

3. CHINA'S AIR FORCE MODERNISATION

3.1 Strategic Shift towards Active-Defence

The strategic shift in China's national security strategy has been the major motivation behind rapid air force modernisation. Since President Xi Jinping assumed power in 2013, China underscored that "the Chinese Air Force will play a primary role in future warfare,"¹⁰ resulting in the transformation of Chinese Air Force from a tactical defensive force to a strategic force capable of carrying out offensive operations in extra-territorial regions.

There are two major factors behind this recalibration. Firstly, the increasing competition between China and the US underscored by the US Free and Open Indo-Pacific Strategy aimed at Chinese containment. Secondly, China leveraging its economic muscle to sustain its peaceful rise and navigate expanding threat spectrum.¹¹ China's latest Defence White Paper titled "China's National Defence in the New Era" published in 2019 reiterates the changes in China's strategic approach. It highlights that with the world transitioning towards multipolarity under economic globalisation, cultural diversification and development of a global information society, the destabilising forces

¹⁰ Xiaobing Li, "The Dragon's Wing," 125.

¹¹ Weixing Hu, "The United States, China, and the Indo-Pacific Strategy: The Rise and Return of Strategic Competition," *China Review* 20, no. 3 (2020): 132, <https://www.jstor.org/stable/26928114>.

of hegemonism, unilateralism, and power politics continue to threaten international peace and security.¹²

As the US adopts unilateral policies, NATO continues its enlargement agenda, Russia strengthens its conventional and nuclear capabilities, and the EU accelerates security and military integration; the global strategic stability suffers a setback. Coupled with failing efforts for international arms control and disarmament, growing arms race, increasing terrorism and extremism, and rapid emergence of non-traditional security threats, China only finds it in its best interest to enhance its overall national military strength to actively deal with complex security challenges.¹³

The primary objectives of China's national defence policy include safeguarding territorial sovereignty, deterring and resisting any form of aggression, containing Taiwanese independence forces, undermining separatist movements, protecting Chinese interests in maritime sphere, safeguarding Chinese interests in non-traditional domains like outer space and cyberspace, securing Chinese interests overseas, and ensuring its sustainable development. To achieve these objectives, the white paper emphasises on China's adoption of 'active defence', maintaining that "we will not attack unless we are attacked, but we will surely counterattack if attacked."¹⁴

The concept of active defence highlights China's holistic approach of balancing strategic defence and offence at both operational and tactical levels. In line with this approach, China wants to achieve complete modernisation of its military by 2035 and

¹² The State Council Information Office of the People's Republic of China, "China's National Defense in the New Era," 2019, <https://www.chinadaily.com.cn/specials/whitepaperonnationaldefenseinnewera.pdf>.

¹³ Ibid

¹⁴ Ibid

make it “the world-class force” by 2049 to fulfil its goal of the great rejuvenation.¹⁵ As Chinese Air Force remains the most significant component of its armed forces, China has largely reformed the PLAAF not only by increasing its airpower capabilities but also by restructuring its command and control and reorganising defence reserves, all while keeping its defence expenditure to GDP ratio at 1.7 percent, lower than that of Russia (5.9 percent), US (3.4 percent), South Korea (2.7 percent), India (2.4 percent), UK (2.3 percent), and France (2.1 percent), as of 2023.¹⁶ This indicates that China’s military modernisation drive is economically stable and can take a pace to match future threats.

3.2 China’s Airpower Capabilities

The following is a comprehensive overview of China’s airpower capabilities. In 2004, induction of the J-10 fighter jet marked a significant breakthrough in China’s aviation industry and the PLAAF’s arsenal.¹⁷ China’s military-civil fusion (MCF) strategy, aimed at strengthening technological and economic cooperation between civilian and military sectors, has helped secure substantial financial capital, leading to a rapidly increasing budget for airpower advancements.¹⁸ This strategy has also fostered intellectual prowess and boosted the aviation, science and technology sectors.¹⁹ The MCF enabled recent technological developments in the PLAAF including new fighter jets, air defence systems, and a series of space shuttle launches.²⁰

¹⁵ Ibid

¹⁶ World Bank. Military expenditure (% of GDP). <https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS>

¹⁷ Lu Xiaoping, *The PLA Air Force* (China Intercontinental Press, 2012).

¹⁸ Alexander E Farrow, “Modernization and the Military-Civil Fusion Strategy,” *Journal of the Indo-Pacific Affairs* 6, no. 6 (2023): 102–14, <https://media.defense.gov/2023/Sep/21/2003305658/-1/-1/1/JIPA%20-%20FARROW.PDF/JIPA%20-%20FARROW.PDF>.

¹⁹ Richard A. Bitzinger, “China’s Shift from Civil-Military Integration to Military-Civil Fusion,” *Asia Policy* 28, no. 1 (2021): 7, <https://doi.org/10.1353/asp.2021.0001>.

²⁰ Richard A. Bitzinger, “China’s Shift from Civil-Military Integration,” 21.

Since 2015, China has deployed strike fighters and bombers to frontline bases to enable credible first-strike capabilities, shifting from a traditional "front light, rear heavy" deployment.²¹ The PLAAF's 4.5-generation fighter aircraft include the J-10C, J-11B, and J-16D (advanced electronic warfare variant of the J-16) and are equipped with the most recent air-to-air missiles. In 2016, the PLAAF purchased 24 Su-35 4++ generation fighters from Russia and operates many Russian-made Su-30 MKK fighters.²²

During the 2019 military parade, the PLAAF showcased its fifth-generation J-20 fighters, enhancing China's air-to-air capabilities with features such as high maneuverability, stealth attributes, and an internal weapons bay.²³ This domestically manufactured stealth fighter aircraft is present in all the five theatre commands (Eastern, Southern, Western, Northern and Central) of the PLAAF, showing that China has produced more than 300 of these aircraft which are also adaptable to all kinds of weather and terrains.²⁴

In addition to J-20, China displayed another stealth fighter J-35 at the 2024 Zhuhai Air Show.²⁵ Identical in design and specs to the US F-35, J-35 features "exceptional maneuverability, stealth design, and an internal weapons bay, as well as upgraded avionics and sensors that provide enhanced situational awareness, enhancements in radar tracking and targeting capacities with an upgraded electronic

²¹ Xiaobing Li, "The Dragon's Wing," 127.

²² Liu Xuanzun, "China May Consider More Su-35 Fighters after Russian New Offer: Report," *Global Times*, June 30, 2019, <https://www.globaltimes.cn/content/1156219.shtml>.

²³ Liu Xuanzun, "J-20 Fighter Jet Active in All Five PLA Theater Commands: Delegate," *Global Times*, October 20, 2022, <https://www.globaltimes.cn/page/202210/1277527.shtml>.

²⁴ Rick Joe, "China's J-20 Gets Another Upgrade," *The Diplomat*, August 01, 2023, <https://thediplomat.com/2023/08/chinas-j-20-gets-another-upgrade/>

²⁵ Seong Hyeon, "China Displays FC-31 Fighter Model at Saudi Defence Show amid Mideast Conflicts," *South China Morning Post*, February 12, 2024, <https://www.scmp.com/news/china/military/article/3251765/china-displays-fc-31-fighter-saudi-defence-show-bid-increase-exports-mideast-nations-explore-options>.

warfare system.”²⁶ With these developments, China now acquires operational squadrons of stealth fighters, a capability that only the US had as of yet.

The PLAAF also operates advanced bombers, such as the H-6N, China's first nuclear-capable, air-to-air refuellable bomber, forming the airborne component of China's nuclear triad.²⁷ The H-6N and the modernised H-6K, with their standoff weapons provide long-range precision strike capabilities and strengthen China's air control and air defence capabilities.²⁸

Additionally, the PLAAF has more than 250 operational JH-7A fighter-bombers and is developing the next-generation H-20 bomber, expected to have a range of around 8,500 km and a 10-ton payload for both conventional and nuclear bombs.²⁹ The PLAAF also operates hundreds of transport planes and special mission aircraft.

For missile defence, China uses Russian-made S-300 battalions and has acquired the S-400 system to bolster its strategic long-range air defence.³⁰ In addition to that, China has developed its own HQ-9 surface-to-air missile weapon system for intercepting cluster attacks and aerial weapons under conditions of high electromagnetic interference.³¹ In November 2024, China also unveiled its HQ-19 ballistic missile defence system, capable of intercepting ballistic missiles with a range of

²⁶ Ibid

²⁷ Liu Xuanzun, “China's Latest Bomber H-6N Spotted Carrying Hypersonic Missile,” *Global Times*, October 20, 2020, <https://www.globaltimes.cn/content/1204106.shtml>.

²⁸ Liu Xuanzun, “H-6K Variant Seen at China-Russia Strategic Patrol,” *Global Times*, December 23, 2020, <https://www.globaltimes.cn/content/1210797.shtml>.

²⁹ Liu Xuanzun, “China's In-Development H-20 Bomber Worth the Excitement: PLA Air Force Deputy Commander,” *Global Times*, March 11, 2024, <https://www.globaltimes.cn/page/202403/1308604.shtml>.

³⁰ Zhang Hui and Xu Yelu, “Russia, India Eye Finalizing S-400 Deal as Putin Visits Modi,” *Global Times*, December 7, 2021, <https://www.globaltimes.cn/page/202112/1240832.shtml>.

³¹ Liu Xuanzun and Fan Wei, “China Debuts Latest Air Defense Missiles, Laser at Airshow China 2022,” *Global Times*, November 13, 2022, <https://www.globaltimes.cn/page/202211/1279382.shtml>.

3,000 to 5,000 km as well as hypersonic glide vehicles, and is comparable to the US THAAD.³²

Overall, Western estimates indicate that the PLAAF has more than 2,250 combat aircraft, including 1,800 fighters, strategic bombers, tactical bombers, and multi-mission tactical and attack aircraft.³³

4. PAK-CHINA AIR DEFENCE COOPERATION

Pakistan and China enjoy a formidable relationship in defence and security. Pakistan's wars with India in 1965 and 1971 and the Sino-Indian border conflict of 1962 laid the foundation for a close security and strategic relationship between Pakistan and China as both countries shared similar strategic interests in the region.³⁴ This relationship, now transformed into an "all-weather strategic partnership", largely focuses on defence and security cooperation to counter regional threats and maintain regional stability. According to Dr Naeem Salik, Executive Director at Strategic Vision Institute (SVI), China is the only partner in the recent times willing to share sensitive technologies with Pakistan at a cost-effective price, especially when Pakistan faces hurdles and challenges in procuring F-16 fighters from the US.³⁵ Pakistan, while already facing a myriad of security and economic challenges, finds China as the key to access advanced technologies.

³² Liu Xuanzun, "China to display HQ-19 surface-to-air missile system with ballistic missile intercepting capabilities at airshow for 1st time," *Global Times*, November 07, 2024, <https://www.globaltimes.cn/page/202411/1322644.shtml>

³³ Xiaobing Li, "The Dragon's Wing," 127.

³⁴ Muhammad Jawad, Sobia Jamil, and Dr Ashfaq Ahmed, "Pakistan-China Military," 280.

³⁵ *Ibid*, 281.

Previously, in the late 1960s, Pakistan procured Henyang F-6 aircraft from China which have now been replaced with better technological assets. In the 1970s, Pakistan acquired A-5 M (a low altitude combat aircraft) and Chengdu F-7 (Chinese equivalent of the Russian MiG-21).³⁶ The two also jointly developed the K-8 aircraft which is mainly used for pilot-training and light combat roles. It is cost-effective and requires low maintenance costs.³⁷

4.1 JF-17 Thunder: A Benchmark Project

Currently, Pakistan is one of the largest importers of Chinese aircraft and other airpower capabilities and equipment as China remains a reliable supply source. This is largely evident from the successful joint production of the fourth-generation JF-17 Thunder which remains a flagship project in Pak-China air force cooperation. Out of its three variants, Block-I and Block-II come with 1.6 Mach speed, use Russian RD-93 turbofan engine, whereas Block-III has seen significant improvements in its propulsion and avionics systems and comes equipped with Chinese NRIET KLJ-7 radar.³⁸ Capabilities such as a Forward Looking Infra-Red (FLIR) pod, Infra-red search and track (IRST) system, and a Missile Approach Warning System (MAWS) are present in the latest variant.³⁹

Expertise in the production of JF-17 have now rendered Pakistan capable of exporting this aircraft to other countries in Asia and Africa. In February 2024, Pakistan

³⁶ Dr Sumaira Rehman et al., "China-Pakistan Defense Cooperation: Critical Analysis," *Journal of Xi'an Shiyou University* 19, no. 2 (2023): 1048–68, <https://www.xisdxjsu.asia/V19I02-87.pdf>.

³⁷ Pakistan Aeronautical Complex Kamra, "Karakoram-8 (K-8) Aircraft," n.d., <https://www.pac.org.pk/k-8>.

³⁸ Muhammad Zubair Iqbal and Musarat Amin, "Vacillation between Soft and Hard Balancing: China-Pakistan versus Indo-US Strategies," *Strategic Studies* 36, no. 1 (2016): 74–91, <https://www.jstor.org/stable/48535935>.

³⁹ Sameer Lalwani, "A Threshold Alliance: The China-Pakistan Military Relationship."

signed a \$1.6 billion deal with Azerbaijan for the supply of JF-17 Block-III fighter.⁴⁰ Recently, in May 2024, Pakistan and Iraq also inked a historic defence deal for supply of twelve JF-17 Block-III fighters and SMK Super Mushaq trainer aircraft.⁴¹ Previously, Nigeria procured three JF-17 Block II fighters from Pakistan in 2020.⁴² These developments have served as a huge push as Pakistan positions itself as a reliable military supplier and a credible player in the global defence industry.

4.2 J-10C: Qualitative Edge against India

According to SIPRI reports, Pakistan's 70 to 80 percent of military procurement between 2019 and 2023 came from China and roughly 80 percent of its advanced combat air power comes from Chinese manufacturers.⁴³ In 2021, Pakistan signed an agreement with China for a batch of six J-10C aircraft which is a 4.5-generation, multirole aircraft featuring an Active Electronically Scanned Array (AESA) radar.⁴⁴ It can be equipped with advanced electronic suites and long-range air-to-air missiles. Pakistan's procurement of J-10C came as a response to India's acquisition of French Rafales and serves as an effective counterbalance.⁴⁵ According to Pakistan's Ministry of Information and Broadcasting, "With J-10C 'Dragon' omni role fighter in its ranks, PAF

⁴⁰ Rizwan Shah, "Pakistan Secures Historic \$1.6 Billion Defense Deal with Azerbaijan for JF-17 Fighters," *PAF Falcons*, February 22, 2024, <https://paffalcons.com/fighter-aircraft/pakistan-secures-jf17-deal-with-azerbaijan/>.

⁴¹ Mateen Haider, "Pakistan, Iraq Sign Land Mark Defense Deal," *The Nation*, May 12, 2024, <https://www.nation.com.pk/12-May-2024/pakistan-iraq-sign-land-mark-defense-deal>.

⁴² Usman Ansari, "Pakistan Delivers JF-17 Fighters to Nigerian Air Force," *Defense News*, May 21, 2021, <https://www.defensenews.com/air/2021/05/21/pakistan-delivers-jf-17-fighters-to-nigerian-air-force/>.

⁴³ Sameer Lalwani, "A Threshold Alliance: The China-Pakistan Military Relationship."

⁴⁴ Liu Xuanzun, "Pakistan's Acquisition of Chinese J-10C Fighter Jets Significant for Both Sides: Analysts," *Global Times*, February 20, 2022, <https://www.globaltimes.cn/page/202202/1252714.shtml>.

⁴⁵ Sebastien Roblin, "Minister: Pakistan Bought Chinese J-10 Jets to Counter India's Rafales," *Forbes*, January 3, 2022, <https://www.forbes.com/sites/sebastienroblin/2021/12/31/minister-pakistan-bought-chinese-j-10-jets-to-counter-indias-rafales/?sh=76e925e11ef2>.

retains the first shot Beyond Visual Range (BVR) capability while maintaining a qualitative edge in the application of air power across all domains.”⁴⁶

Fulfilling the PAF’s strategic needs, J-10C stands as an effective deterrent against India’s Rafale fighters. The J-10C provides Pakistan qualitative advantage over India’s offensive capabilities and denies India upper hand in control of the air. Although India is on the road towards indigenisation and modernisation which it narrates as a bulwark against China, there is no denying that India’s military modernisation largely revolves around countering Pakistan. Keeping that into consideration, timely acquisition of the J-10C stands as a testament to Pakistan’s strategic forwardness and foresight.

Moreover, the JF-17 and J-10C offer a great opportunity to replace the aging fleet of Mirage and F-7P / PG fighters.⁴⁷ Their inter-domain application allows them to be used in maritime operations of Pakistan Navy. Although Pakistan has not yet employed J-10C for maritime role, China uses J-10 variants for maritime operations very so often as it can be well equipped with the anti-ship, rocket-powered missiles.⁴⁸ Overall, just like JF-17 Thunder, J-10C adds significant value to Pakistan’s conventional deterrence capability.

⁴⁶ Press Information Department, “Induction of J-10C in Fighter Fleet of Pakistan Air Force Is a Huge Milestone,” *Ministry of Information and Broadcasting, Government of Pakistan*, March 13, 2022, https://pid.gov.pk/site/press_detail/19418.

⁴⁷ Shahzad M. Roomi, “J-10C and Pakistan Air Force’s Modernization in Context of Indian Military Doctrinal Evolution,” accessed June 26, 2024, https://www.academia.edu/86796010/J_10C_and_Pakistan_Air_Forces_Modernization_in_Context_of_Indian_Military_Doctrinal_Evolution.

⁴⁸ “J-10 (Jian 10) Vigorous Dragon Multirole Tactical Fighter,” *Air force Technology*, October 13, 2020, <https://www.air-force-technology.com/projects/j-10/?cf-view>.

4.3 UAVs, Air Defence and Aerospace Cooperation

Pakistan has also procured several unmanned aerial vehicles (UAVs) from China, such as the CH-4, a medium-altitude long-endurance (MALE) UAV, and more recently, the Wing Loong II with an operational radius of 1,500 km and capability to carry precision-guided munitions. As reported by the STRATCOM Bureau, Pakistan employed Wing Loong II drones along with JF-17 Thunder fighters and F-16s for precision military strikes to conduct Operation Marg Bar Sarmachar in Iran against terrorists in January 2024.⁴⁹

Additionally, Pakistan has procured HQ-9 air-defence system from China, a Chinese version of Russian S-300 air defence system. Pak-China cooperation has further extended into aerospace domain with the recent launch of PAKSAT-MM1 and iCube Qamar satellites.⁵⁰ Pakistan, keen to play a forefront role in space exploration, has significantly benefitted from these joint ventures with China. Together, these developments significantly contribute towards strategic stability in South Asia and the IOR which constantly remain under stress due to the cascading impacts of the Indo-US containment policies targeted against China as well as China-Pakistan cooperation.

5. PAKISTAN'S REDUCED RELIANCE ON TRADITIONAL PARTNERS

The defence relationship between Pakistan and the US has been characterised by points of convergences and divergences. Factors like war on terror, the Indo-US strategic partnership, and diverging interests in Afghanistan have largely governed

⁴⁹ "Pakistani JF-17s, Wing Loong Drones Bomb 'Terrorist' Targets in Iran," *Defense Mirror*, January 18, 2024, <https://www.defensemirror.com/news/35868>.

⁵⁰ Deng Xiaoci, "China Delivers Advanced Communication Satellite to Pakistan Following Successful Launch," *Global Times*, May 30, 2024, <https://www.globaltimes.cn/page/202405/1313341.shtml>; Fan Anqi and Deng Xiaoci, "China Hands over Data Collected from Pakistan's First Satellite Mission on Chang'e-6 Lunar Probe," *Global Times*, May 10, 2024, <https://www.globaltimes.cn/page/202405/1312051.shtml>.

Pakistan-US defence relations in the 21st century. While Pakistan was a key ally of the US post 9/11, the relationship has strained over the years due to US accusations on Pakistan playing a 'double game' in Afghanistan.⁵¹ Similarly, the growing strategic partnership with India in areas of defence, technological cooperation, and Chinese containment has made Pakistan wary of its reliance on the US for defence needs.⁵²

On the other hand, China does not yield to any international pressure and prioritises its strategic partnership with Pakistan. The Treaty of Friendship between China and Pakistan which calls for refraining from bloc or alliance politics that could damage their bilateral relations and not using their soil against each other further adds to China's credibility as a reliable partner.⁵³ Increasing defence cooperation with China has largely reduced Pakistan's dependence on traditional partners who, unlike China, have been hesitant in sharing technology with Pakistan.⁵⁴

Pakistan's turn towards China for its defence needs also stems from economic and political factors. Firstly, Chinese defence equipment comes with greater affordability than Western alternatives which is more affordable keeping in view Pakistan's current economic landscape. This way, Pakistan is able to maintain strong competitive advantage without compromising the maximum value of its defence expenditure. Secondly, Western military sales and assistance often are attached with political conditions such as counterterrorism operations, non-proliferation commitments and

⁵¹ Thomas F. Lynch III, "The Decades-Long 'Double-Double Game' Pakistan, the United States, and the Taliban," *Military Review*, no. July-August (2018): 64, <https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/JA-18/Lynch-Pakistan-US-Taliban.pdf>.

⁵² Sadaf Farooq, Sadia Kazmi, and Javaria Javed, "Indo-US Strategic Partnership," 12.

⁵³ Azeem Gul, Riaz Ahmed, and Lloyd W Fernald, "China's Strategic and Commercial Relations with Pakistan: Opportunities, Challenges and Prospects," *ISSRA Papers* 12 (2020): 161.

⁵⁴ Ibid

human rights etc,⁵⁵ whereas China's defence sales to Pakistan are not typically encumbered by such unjustified conditions.

Thus, diversifying its defence suppliers has helped Pakistan maintain greater strategic autonomy so that Pakistan can pursue its defence and foreign policy objectives with lesser constraints. It has also allowed Pakistan to maintain a stronger deterrent against India whose regional hegemonic assertions continue under the leverage offered by strategic partnership with the US.

6. FUTURE PROSPECTS

Over the past seven decades, there has been a near-perfect action-reaction dynamic between aggressive regional hegemonic designs of India and defensive measures of Pakistan to protect its national interests and prevent India from becoming the uncontested hegemon in South Asia.⁵⁶ With the doctrinal shifts and a renewed focus on sub-conventional warfare, India underscores "the possibility of a surgical strike or limited war in South Asia" in its latest 2017 Joint Armed Forces Doctrine.⁵⁷ However, Pakistan's forwardness in both conventional and non-conventional domains against India's doctrinal rethinking and acquisition of modern defence equipment has established that India does not enjoy qualitative edge over Pakistan. It reaffirms that India cannot act as a sufficient force against China, Pakistan, or the China-Pakistan partnership as well as denounces American assertions of India as the broader 'regional anchor' in the Indo-Pacific region.

⁵⁵ Sadaf Farooq, Sadia Kazmi, and Javaria Javed, "Indo-US Strategic Partnership," 15.

⁵⁶ Muhammad Ali and Syed Mussawar Hussain Bukhari, "Indian Military Doctrine," 81.

⁵⁷ Dr Masood ur Rehman Khattak, Dr Muhammad Khan, and Dr Ghulam Qumber, "Evolution of New Indian Military Strategy," 143.

Moreover, in the contemporary era of great power competition, middle powers are looking to reduce their reliance on major powers for security and defence and are actively working towards self-reliance through indigenisation. Therefore, indigenisation through greater Chinese cooperation remains at the forefront of Pakistan's defence objectives. Pakistan could possibly strengthen to strengthen its air defence relations with China by following projects and ventures:

6.1 J-35 Stealth Fighters

Pakistan-China air defence cooperation has a huge potential as evident from the likely induction of Chinese fifth-generation J-35 stealth fighters (a successor prototype of FC-31 fighter) into PAF's inventory by 2026.⁵⁸ The J-35 would be the first step towards Pakistan's transformative modernisation initiative. According to Wei Dongxu, a Chinese military expert, the J-35 comes with high-end air combat advantages allowing it to locate opponents first and launch precision strikes.⁵⁹ Given that the J-35 features exceptional situational awareness and is capable of carrying a wide range of munitions, this fifth-generation aircraft would offer Pakistan greater air control against India.⁶⁰

In comparison, India announced the development of an indigenous fifth-generation Advanced Medium Combat Aircraft (AMCA) in 2008 but has only recently finalised the budget.⁶¹ Reports in Indian media speculate that the first maiden flight will

⁵⁸ Centre for Aerospace and Security Studies (CASS) Lahore, *Air Doctrine: Applicability in Next-Generation Warfare for Pakistan Air Force*, February 2025.

⁵⁹ Liu Xuanzun, "Pakistan's Plan to Buy Chinese FC-31 Stealth Fighter Jets 'Win-Win Cooperation' - Global Times," *Global Times*, January 17, 2024, <https://www.globaltimes.cn/page/202401/1305570.shtml>.

⁶⁰ Rick Joe, "Assessing the J-35A: The Chinese Air Force's New Stealth Fighter," *The Diplomat*, November 20, 2024, <https://thediplomat.com/2024/11/assessing-the-j-35a-the-chinese-air-forces-new-stealth-fighter/>.

⁶¹ Gordon Arthur, "India Approves Full Development of Fifth-Generation Fighter," *Defense News*, March 13, 2024, <https://www.defensenews.com/air/2024/03/13/india-approves-full-development-of-fifth-generation-fighter/>.

be completed by 2028 and the series production of AMCAs will begin by 2035.⁶² Previously in the case of Tejas, however, the first Tejas entered operational squadron 15 years after its first maiden flight in 2001. This shows that the timeline for AMCA may be longer than anticipated by India, and the first aircraft is likely to be operational by 2043, putting India far behind Pakistan in acquisition of a fifth-generation stealth fighter.

Moreover, even if the Indian Air Force (IAF) successfully inducts the promised F-35 from the US,⁶³ IAF would still lag behind PAF by at least 5-7 years in terms of fifth-generation aircraft and first shot capability. In a seminar *Air Doctrine: Applicability in Next-Generation Warfare for Pakistan Air Force* organised by CASS Lahore, President CASS, Air Marshal Asim Suleiman (Retd), remarked that “The PAF currently holds an edge over the IAF for at least six to seven years by virtue of its first-shot capability, planned induction of fifth-generation aircraft, force multipliers, and the introduction of multi-domain forces. This advantage will only be reduced if the IAF successfully inducts the F-35 into its fleet and matches the PAF in force multipliers and multi-domain advancements. However, if the IAF fails to keep pace with the PAF, it will remain at least a decade behind.”⁶⁴

This will considerably shift effect-based regional balance of power in Pakistan’s favour, allowing Pakistan and China to ensure a secure and stable regional security environment.

⁶² Ibid

⁶³ Nandita Bose and Mike Stone, “Trump says US to increase military sales to India, eventually provide F-35 jets,” *Reuters*, February 14, 2025, <https://www.reuters.com/business/aerospace-defense/markets/commodities/trump-says-india-agreed-purchase-more-us-oil-gas-2025-02-13/>

⁶⁴ CASS Lahore, *Air Doctrine*.

6.2 Upgraded Wing Loong Drones

In the near future, China-Pakistan air defence cooperation can greatly enhance in the area of UAVs. China already has plans in place to upgrade its Wing Loong drones to incorporate new technologies like artificial intelligence, big data, 5G+, and industrial internet, etc., which would significantly enhance the impact of these medium-range, high-endurance drones.⁶⁵ These AI-powered drones have reportedly shown high-end autonomous performance in close-range attacks, all the while ensuring that human operators maintain the upper hand and ultimate control over drones.

As these drones undergo further enhancements, Pakistan can replace its current Wing Loong drones with the upgraded variants. These advanced drones will feature outstanding target recognition capabilities, intelligent situational awareness, autonomous flight, and even self-maintenance. These specifications will not only enhance the operational effectiveness of Pakistan's air defence system but also reduce logistical and maintenance burden.

6.3 Sixth-Generation Aircraft

In January 2023, the Aviation Industry Corporation of China (AVIC) released a video featuring computer-generated configurations of a tailless stealth fighter aircraft which are widely believed to be the design concept of China's next generation fighters.⁶⁶ The video highlighted several features of the aircraft including airborne radar and the

⁶⁵ Liu Xuanzun and Fan Wei, "China's Wing Loong Drones to See More Applications, Become More Intelligent: Chief Designer," *Global Times*, December 1, 2023, <https://www.globaltimes.cn/page/202312/1302868.shtml>.

⁶⁶ Liu Xuanzun, "China Reveals Tailless Concept for Next-Generation Fighter Jet," *Global Times*, February 1, 2023, <https://www.globaltimes.cn/page/202302/1284646.shtml>.

tailless, blended wing body design which would deliver superior stealth capability, longer range, and lesser fuel consumption.⁶⁷

According to Wang Heifeng, chief designer at the Chengdu Aerospace Corporation, other notable technological features include AI integration, manned-unmanned teaming, omnidirectional sensors, as well as data-linking and combat management systems such as the C4ISR, surpassing aircraft technologies of both the US and Russia.⁶⁸ On 26 December 2024, China revealed two prototypes of its tailless sixth-generation fighter jets, well-capable of targeting US military bases in Guam, Diego Garcia, and Alaska with their combat reach greater than 2,500 kilometres.⁶⁹

China's vision for a sixth-generation fighter renders strong competition to the US Air Force's sixth-generation fighter project named "Next Generation Air Dominance."⁷⁰ The current available information shows that China is already in the research and development phase for its sixth-generation fighter and is likely to outcompete the US. This shows that China's goal of becoming the 'world-class force' by mid-21st century encompasses the next-gen fighter which would allow China a strong edge against the US and its allies.

So, while Pakistan already has plans in place for the acquisition of Chinese fifth-generation aircraft, China's development of sixth-generation fighters provides another

⁶⁷ Ibid

⁶⁸ Gordon Arthur, "When Will China Have a Sixth-Gen Fighter Jet?," *Defense News*, June 24, 2024, <https://www.defensenews.com/air/2024/06/24/when-will-china-have-a-sixth-gen-fighter-jet/>.

⁶⁹ Rathindra Kuruwita, "China's 6th-Generation Fighter: Potential Game Changer for Air Superiority in Asia?," *The Diplomat*, February 24, 2025, <https://thediplomat.com/2025/02/chinas-6th-generation-fighter-potential-game-changer-for-air-superiority-in-asia/#:~:text=By%20revealing%20their%20prototypes%2C%20China,MW%20mark%2C%20but%20also%20their>

⁷⁰ Jeremiah Gertler, "Air Force Next-Generation Air Dominance Program," ed. John R Joehn (Washington, DC: Congressional Research Service, June 23, 2022), <https://crsreports.congress.gov/product/pdf/IF/IF11659>.

opportunity of cooperation in the longer run. It would further increase Pakistan's qualitative advantage against India and other adversaries and strengthen the balance of power equation in South Asia and the wider Indo-Pacific region. However, to ensure that Pakistan is not merely a recipient of these developments, it is crucial to work towards joint manufacturing of these advanced fighters by leveraging its strategic partnership with China.

6.4 Challenges in Cooperation

While there is a great potential to join the R&D phases of the next-generation fighter with China, there are certain challenges and obstacles that can hinder cooperation. These mainly include logistical challenges, technological limitations, operational compatibility, political considerations, and regional dynamics.

When it comes to logistical challenges, maintaining a diverse array of military hardware from different sources puts a huge strain on Pakistan's resources. Also, integrating new Chinese systems require significant infrastructure development and training for personnel which can be resource-intensive and time consuming. Similarly, integrating Chinese equipment with existing Western systems in Pakistan's arsenal poses compatibility issues due to differences in technology standards, communication protocols, and interoperability challenges. There is also a lack of operational coordination which can be bridged through joint training exercises but requires significant efforts on both sides.

Additionally, it is important that while Pakistan reduces dependence on the US, it focuses on diversification and indigenisation in order to avoid falling into a buyer-seller

relationship with China. This can be done through joint ventures that enable Pakistan to maintain bargaining power and uphold strategic autonomy.

Although several challenges exist, initiatives like the National Aerospace Science and Technology Park (NASTP) established by the PAF is driving innovation through R&D to overcome technological limitations and ensure Pakistan's air superiority against adversaries.

7. POLICY RECOMMENDATIONS

To address challenges in Pakistan-China air defence cooperation, there are certain steps that Pakistan can take on an immediate basis and in the longer run:

7.1 Joint Aircraft Maintenance and Personnel Training with China

Pakistan must continue to engage China for capacity building and personnel training of the Pakistan Air Force. Engaging Chinese expertise is necessary for technological compatibility as it ensures that maintenance and training are aligned with the specific requirements of Chinese aircraft. It would also offer improved operational readiness, logistical and supply chain benefits, and stronger strategic partnership between the two countries.

7.2 Formulate a Joint Export Strategy

In the shorter run, Pakistan and China can formulate a joint export strategy as it would further strengthen their successful joint production ventures like the JF-17 Thunder. While a number of countries like Azerbaijan, Myanmar, and Nigeria have bought JF-17 Thunder from Pakistan, a joint export strategy would further enhance Pakistan's credibility and strengthen its position as an emerging defence exporter in the

international markets. In addition to market expansion, a joint strategy would facilitate cost sharing, standardisation and quality assurance, risk mitigation, and mutual economic benefits. Such economic-defence cooperation would also present Pakistan and China as a united front in the Indo-Pacific strategic landscape.

7.3 Engage China through NASTP for 6th-generation R&D

The NASTP has become a key destination for collaborations on research and development with other countries. A prominent example has been Baykar Teknoloji, a top-notch company in Turkey's defence and technology industry, which signed a cooperation agreement with NASTP for R&D to strengthen bilateral cooperation between aviation industries of both countries.⁷¹ Similarly, China could also be invited for a cooperation agreement for the next-generation fighter development and other such capabilities. Although 6th-generation development currently seems a long shot, Pakistan's engagement in its research and development phases with China would largely enhance Pakistan's technological skillset.

7.4 Establish a Joint Institution for Cooperation on Advanced Defence Technologies

In the longer run, just like the Indo-US iCET agenda, Pakistan and China must also come together to establish an exclusive institution for cooperation on newer defence technologies. It would be greatly beneficial in terms of resource sharing, accelerated innovation, reduced dependence on Western technologies, and enhanced global standing of both countries. Moreover, it is highly significant for Pakistan to

⁷¹ Baykar, "Baykar Subsidiary to Conduct R&D Studies at Pakistan's NASTP," August 7, 2023, <https://baykartech.com/en/press/baykar-subsiadiary-to-conduct-rd-studies-at-pakistans-nastp/>.

enhance its AI capabilities which can be efficiently done under China's oversight and technology.

8. CONCLUSION

China's rapid air force modernisation, guided by a strategic shift from defensive towards active defence posture, has significantly enhanced its airpower capabilities and set the path for PLAAF to become a world-class force by mid-21st century. Such a swift transformation has also paved the way for greater air defence cooperation between China and Pakistan as both countries share common strategic interests and threats. The all-weather strategic partnership has been solidified by joint ventures such as the JF-17 Thunder and Pakistan's acquisition of J-10C, Wing Loong drones, and other such equipment from China. This cooperation has not only enhanced Pakistan's air defence capabilities but has largely reduced its dependence on traditional suppliers, particularly the US.

Looking ahead, the prospects of future cooperation between both countries seem promising. The near-term agreement for the purchase of J-35 stealth fighters, upgraded Wing Loong drones, and enormous potential for collaboration on sixth-generation aircraft and emerging technologies stand to multiply Pakistan's qualitative advantage against India. Such advancements will further strengthen Pakistan's position as a key player in the Indo-Pacific power matrix, contributing to strategic stability in the face of India's hegemonic assertions and US-China great power contestation.

Overall, strategic stability in South Asia and the wider Indo-Pacific largely depends on China-Pakistan defence partnership. A strong alignment between their defence

strategies and technologies will likely maintain a credible deterrent against regional adversaries and ensure a stable regional security environment. Therefore, sustained cooperation in air defence between China and Pakistan does not only serve bilateral interests but also regulates the broader regional equilibrium. However, Pakistan needs to overcome logistical, technological, and political challenges by focusing on a win-win relationship with China rather than settling for a one-way, seller-buyer dynamics.

BIBLIOGRAPHY

- Airforce Technology. "J-10 (Jian 10) Vigorous Dragon Multirole Tactical Fighter," October 13, 2020. <https://www.airforce-technology.com/projects/j-10/?cf-view>.
- Ali, Muhammad, and Syed Mussawar Hussain Bukhari. "INDIAN MILITARY DOCTRINE and ITS IMPACT on SOUTH ASIA'S STRATEGIC STABILITY." *Margalla Papers* 26, no. 1 (2022): 74–84. <https://doi.org/10.54690/margallapapers.26.1.98>.
- Anqi, Fan, and Deng Xiaoci. "China Hands over Data Collected from Pakistan's First Satellite Mission on Chang'e-6 Lunar Probe." *Global Times*, May 10, 2024. <https://www.globaltimes.cn/page/202405/1312051.shtml>.
- Ansari, Usman. "Pakistan Delivers JF-17 Fighters to Nigerian Air Force." *Defense News*, May 21, 2021. <https://www.defensenews.com/air/2021/05/21/pakistan-delivers-jf-17-fighters-to-nigerian-air-force/>.
- Arthur, Gordon. "India Approves Full Development of Fifth-Generation Fighter." *Defense News*, March 13, 2024. <https://www.defensenews.com/air/2024/03/13/india-approves-full-development-of-fifth-generation-fighter/>.
- . "When Will China Have a Sixth-Gen Fighter Jet?" *Defense News*, June 24, 2024. <https://www.defensenews.com/air/2024/06/24/when-will-china-have-a-sixth-gen-fighter-jet/>.
- Baykar. "Baykar Subsidiary to Conduct R&D Studies at Pakistan's NASTP," August 7, 2023. <https://baykartech.com/en/press/baykar-subsidiary-to-conduct-rd-studies-at-pakistans-nastp/>.
- Bitzinger, Richard A. "China's Shift from Civil-Military Integration to Military-Civil Fusion." *Asia Policy* 28, no. 1 (2021): 5–24. <https://doi.org/10.1353/asp.2021.0001>.
- Bose, Nandita, and Mike Stone. "Trump says US to increase military sales to India, eventually provide F-35 jets." *Reuters*, February 14, 2025. <https://www.reuters.com/business/aerospace-defense/markets/commodities/trump-says-india-agreed-purchase-more-us-oil-gas-2025-02-13/>.
- Centre for Aerospace and Security Studies (CASS) Lahore, *Air Doctrine: Applicability in Next-Generation Warfare for Pakistan Air Force*, February 2025.
- Defense Mirror. "Pakistani JF-17s, Wing Loong Drones Bomb 'Terrorist' Targets in Iran," January 18, 2024. <https://www.defensemirror.com/news/35868>.
- Everett, Maj Chad. "Quantum Technology." *Wild Blue Yonder*, July 20, 2023. <https://www.airuniversity.af.edu/Wild-Blue-Yonder/Articles/Article-Display/Article/3457421/quantum-technology/>.

- Farooq, Sadaf, Sadia Kazmi, and Javaria Javed. "Indo-US Strategic Partnership: Implications for Pakistan." *Policy Perspectives* 15, no. 1 (2018): 3–20. <https://www.jstor.org/stable/10.13169/polipers.15.1.0003>.
- Farrow, Alexander E. "Modernization and the Military-Civil Fusion Strategy." *Journal of the Indo-Pacific Affairs* 6, no. 6 (2023): 102–14. <https://media.defense.gov/2023/Sep/21/2003305658/-1/-1/1/JIPA%20-%20FARROW.PDF/JIPA%20-%20FARROW.PDF>.
- Gertler, Jeremiah. "Air Force Next-Generation Air Dominance Program." Edited by John R Joehn. Washington, DC: Congressional Research Service, June 23, 2022. <https://crsreports.congress.gov/product/pdf/IF/IF11659>.
- Gul, Azeem, Riaz Ahmed, and Lloyd W Fernald. "China's Strategic and Commercial Relations with Pakistan: Opportunities, Challenges and Prospects." *ISSRA Papers* 12 (2020): 159–74.
- Haider, Mateen. "Pakistan, Iraq Sign Land Mark Defense Deal." *The Nation*, May 12, 2024. <https://www.nation.com.pk/12-May-2024/pakistan-iraq-sign-land-mark-defense-deal>.
- Hoffman, Fabian. "Strategic Non-Nuclear Weapons and Strategic Stability - Promoting Trust through Technical Understanding." Fondation pour la Recherche Stratégique, November 2021. <https://www.frstrategie.org/sites/default/files/documents/programmes/Programme%20TNP%20-%20P5/2021/202103.pdf>.
- Hu, Weixing. "The United States, China, and the Indo-Pacific Strategy: The Rise and Return of Strategic Competition." *China Review* 20, no. 3 (2020): 127–42. <https://www.jstor.org/stable/26928114>.
- Hui, Zhang, and Xu Yelu. "Russia, India Eye Finalizing S-400 Deal as Putin Visits Modi." *Global Times*, December 7, 2021. <https://www.globaltimes.cn/page/202112/1240832.shtml>.
- Hyeon, Seong. "China Displays FC-31 Fighter Model at Saudi Defence Show amid Mideast Conflicts." *South China Morning Post*, February 12, 2024. <https://www.scmp.com/news/china/military/article/3251765/china-displays-fc-31-fighter-saudi-defence-show-bid-increase-exports-mideast-nations-explore-options>.
- Iqbal, Muhammad Zubair, and Musarat Amin. "Vacillation between Soft and Hard Balancing: China-Pakistan versus Indo-US Strategies." *Strategic Studies* 36, no. 1 (2016): 74–91. <https://www.jstor.org/stable/48535935>.
- Jawad, Muhammad, Sobia Jamil, and Dr Ashfaq Ahmed. "Pakistan-China Military and Security Ties: A Qualitative Analysis." *Pakistan Social Sciences Review* 3, no. 2 (2019): 279–96. [https://doi.org/10.35484/pssr.2019\(3-ii\)22](https://doi.org/10.35484/pssr.2019(3-ii)22).

- Joe, Rick. "Assessing the J-35A: The Chinese Air Force's New Stealth Fighter." *The Diplomat*, November 20, 2024, <https://thediplomat.com/2024/11/assessing-the-j-35a-the-chinese-air-forces-new-stealth-fighter/>
- . "China's J-20 Gets Another Upgrade." *The Diplomat*, August 01, 2023. <https://thediplomat.com/2023/08/chinas-j-20-gets-another-upgrade/>
- Khattak, Dr Masood ur Rehman, Dr Muhammad Khan, and Dr Ghulam Qumber. "EVOLUTION of NEW INDIAN MILITARY STRATEGY: IMPLICATIONS for PAKISTAN." *Margalla Papers* 23, no. 1 (2019): 139–49. <https://margallapapers.ndu.edu.pk/site/issue/view/14/97>.
- Kubiak, Katarzyna. "Quantum Technology and Submarine Near-Invulnerability." London, UK: European Leadership Network, December 2020. <https://www.europeanleadershipnetwork.org/wp-content/uploads/2020/12/Quantum-report.pdf>.
- Kuruwita, Rathindra. "China's 6th-Generation Fighter: Potential Game Changer for Air Superiority in Asia?" *The Diplomat*, February 24, 2025. <https://thediplomat.com/2025/02/chinas-6th-generation-fighter-potential-game-changer-for-air-superiority-in-asia/#:~:text=By%20revealing%20their%20prototypes%2C%20China,MW%20mark%2C%20but%20also%20their>
- Lalwani, Sameer. "A Threshold Alliance: The China-Pakistan Military Relationship." Washington, DC: United States Institute of Peace, March 2023. https://www.usip.org/sites/default/files/2023-03/sr-517_threshold-alliance-china-pakistan-military-relationship.pdf.
- Li, Xiaobing . "The Dragon's Wing: The People's Liberation Army Air Force's Strategy." *Journal of Indo-Pacific Affairs* 5, no. 4 (2022): 125–36. https://media.defense.gov/2022/Jul/31/2003046326/-1/-1/1/_JIPA%20JULY-AUGUST%202022.PDF/_JIPA%20JULY-AUGUST%202022.PDF.
- Lynch III, Thomas F. "The Decades-Long 'Double-Double Game' Pakistan, the United States, and the Taliban." *Military Review*, no. July-August (2018): 64–77. <https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/JA-18/Lynch-Pakistan-US-Taliban.pdf>.
- Pakistan Aeronautical Complex Kamra. "Karakoram-8 (K-8) Aircraft," n.d. <https://www.pac.org.pk/k-8>.
- Press Information Department. "Induction of J-10C in Fighter Fleet of Pakistan Air Force Is a Huge Milestone." *Ministry of Information and Broadcasting, Government of Pakistan*, March 13, 2022. https://pid.gov.pk/site/press_detail/19418.

- Press, Daryl G. "The Myth of Air Power in the Persian Gulf War and the Future of Warfare." *International Security* 26, no. 2 (2001): 5–44. <https://doi.org/10.1162/016228801753191123>.
- Rehman, Dr Sumaira, Dr Muhammad Ikram, Dr Sawaira Rashid, and Muhammad Waqas Naeem. "China-Pakistan Defense Cooperation: Critical Analysis." *Journal of Xi'an Shiyou University* 19, no. 2 (2023): 1048–68. <https://www.xisdjxsu.asia/V19I02-87.pdf>.
- Roblin, Sebastien. "Minister: Pakistan Bought Chinese J-10 Jets to Counter India's Rafales." *Forbes*, January 3, 2022. <https://www.forbes.com/sites/sebastienroblin/2021/12/31/minister-pakistan-bought-chinese-j-10-jets-to-counter-indias-rafales/?sh=76e925e11ef2>.
- Roomi, Shahzad M. "J-10C and Pakistan Air Force's Modernization in Context of Indian Military Doctrinal Evolution." Accessed June 26, 2024. https://www.academia.edu/86796010/J_10C_and_Pakistan_Air_Forces_Modernization_in_Context_of_Indian_Military_Doctrinal_Evolution.
- Shah, Rizwan. "Pakistan Secures Historic \$1.6 Billion Defense Deal with Azerbaijan for JF-17 Fighters." *PAF Falcons*, February 22, 2024. <https://paffalcons.com/fighter-aircraft/pakistan-secures-jf17-deal-with-azerbaijan/>.
- The State Council Information Office of the People's Republic of China. "China's Military Strategy." Beijing, May 2015. https://www.chinadaily.com.cn/china/2015-05/26/content_20820628.htm.
- . "China's National Defense in the New Era," 2019. <https://www.chinadaily.com.cn/specials/whitepaperonnationaldefenseinnewera.pdf>.
- The White House. "JOINT FACT SHEET: The United States and India Continue to Chart an Ambitious Course for the Initiative on Critical and Emerging Technology," June 17, 2024. <https://www.whitehouse.gov/briefing-room/statements-releases/2024/06/17/joint-fact-sheet-the-united-states-and-india-continue-to-chart-an-ambitious-course-for-the-initiative-on-critical-and-emerging-technology/>.
- Xiaoci, Deng. "China Delivers Advanced Communication Satellite to Pakistan Following Successful Launch." *Global Times*, May 30, 2024. <https://www.globaltimes.cn/page/202405/1313341.shtml>.
- Xiaoping, Lu. *The PLA Air Force*. China Intercontinental Press, 2012.
- Xuanzun, Liu. "China May Consider More Su-35 Fighters after Russian New Offer: Report." *Global Times*, June 30, 2019. <https://www.globaltimes.cn/content/1156219.shtml>.

- . “China Reveals Tailless Concept for Next-Generation Fighter Jet.” *Global Times*, February 1, 2023. <https://www.globaltimes.cn/page/202302/1284646.shtml>.
- . “China’s J-20 Stealth Fighter Jet Receiving Upgrades; next Generation Coming Soon: Test Pilot.” *Global Times*, May 30, 2024. <https://www.globaltimes.cn/page/202405/1313356.shtml>.
- . “China’s Latest Bomber H-6N Spotted Carrying Hypersonic Missile.” *Global Times*, October 20, 2020. <https://www.globaltimes.cn/content/1204106.shtml>.
- . “China’s In-Development H-20 Bomber Worth the Excitement: PLA Air Force Deputy Commander.” *Global Times*, March 11, 2024. <https://www.globaltimes.cn/page/202403/1308604.shtml>.
- . “H-6K Variant Seen at China-Russia Strategic Patrol.” *Global Times*, December 23, 2020. <https://www.globaltimes.cn/content/1210797.shtml>.
- . “J-20 Fighter Jet Active in All Five PLA Theater Commands: Delegate.” *Global Times*, October 20, 2022. <https://www.globaltimes.cn/page/202210/1277527.shtml>.
- . “Pakistan’s Acquisition of Chinese J-10C Fighter Jets Significant for Both Sides: Analysts.” *Global Times*, February 20, 2022. <https://www.globaltimes.cn/page/202202/1252714.shtml>.
- . “Pakistan’s Plan to Buy Chinese FC-31 Stealth Fighter Jets ‘Win-Win Cooperation’ - Global Times.” *Global Times*, January 17, 2024. <https://www.globaltimes.cn/page/202401/1305570.shtml>.
- . “China to display HQ-19 surface-to-air missile system with ballistic missile intercepting capabilities at airshow for 1st time,” *Global Times*, November 07, 2024, <https://www.globaltimes.cn/page/202411/1322644.shtml>
- Xuanzun, Liu, and Fan Wei. “China’s Wing Loong Drones to See More Applications, Become More Intelligent: Chief Designer.” *Global Times*, December 1, 2023. <https://www.globaltimes.cn/page/202312/1302868.shtml>.
- . “China Debuts Latest Air Defense Missiles, Laser at Airshow China 2022.” *Global Times*, November 13, 2022. <https://www.globaltimes.cn/page/202211/1279382.shtml>.