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# INFRASTRUCTURE DEVELOPMENTS AT CHINESE AIR BASES IN THE WESTERN THEATRE COMMAND

DK PANDEY

*The enlightened ruler lays his plans well ahead; the good general cultivates his resources.*

—Sun Tzu

The world's biggest air travel market will be dominated by China, after overtaking the United States, as the country's hunger for aviation is growing exponentially. Presently, China has approximately 235 airports, but with many deficient to handle the envisaged upsurge in the number of passengers and flight density. Based on the demand pattern evaluation, government officials estimate that by 2035, around 450 airports will be required across the country. "At present, an average of eight new airports are opening in the country every year, while some facilities are being expanded and upgraded—but there are concerns within China that those already open are failing to meet modern expectations," as reported by CNN.<sup>1</sup>

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1. Matt Falcus and Maggie Hiufu Wong, "Beijing is Building Hundreds of Airports as Millions of Chinese Take to the Skies", CNN, May 25, 2019, at [https://www.cnn.com.cdn.ampproject.org/v/s/www.cnn.com/travel/amp/china-new-airports/index.html?amp\\_gsa=1&\\_js\\_v=a9&usqp=mq331AQKKAFAQrABIIACAw%3D%3D#amp\\_tf=From%20%251%24s&aoh=16572834993433&referrer=https%3A%2F%2Fwww.google.com&ampshare=https%3A%2F%2Fwww.cnn.com%2Ftravel%2Farticle%2Fchina-new-airports%2Findex.html](https://www.cnn.com.cdn.ampproject.org/v/s/www.cnn.com/travel/amp/china-new-airports/index.html?amp_gsa=1&_js_v=a9&usqp=mq331AQKKAFAQrABIIACAw%3D%3D#amp_tf=From%20%251%24s&aoh=16572834993433&referrer=https%3A%2F%2Fwww.google.com&ampshare=https%3A%2F%2Fwww.cnn.com%2Ftravel%2Farticle%2Fchina-new-airports%2Findex.html) . Accessed on June 22, 2022.

**In the garb of commercial aviation, China is developing infrastructure for military capabilities at numerous airports, as Chinese civil aviation accounts only for 20 per cent of all the air traffic, while the military controls 80 per cent of it.**

Airports are no longer standalone facilities. Availability of essential aviation services such as maintenance, repair, and overhaul at civil airports is common. To create user-friendly air operations facilities at various airports, the support of the efficient links with the other modes of transport, such as the road network and high-speed rail networks, is essential. Only a few Chinese airports have the relevant infrastructure for these support services due to growing global aviation operations. To capitalise on utility services, the Chinese government has been investing

heavily in airport linked infrastructural developments.

In the garb of commercial aviation, China is developing infrastructure for military capabilities at numerous airports, as Chinese civil aviation accounts only for 20 per cent of all the air traffic, while the military controls 80 per cent of it.<sup>2</sup> A country needs adequate infrastructure and logistics support to deploy troops and equipment successfully. The prerequisites for all-time military air operations are the associated navigational and support services. The provision of these essential support facilities for such operations is governed by terrain, accessibility and weather conditions. A significant expansion of its infrastructure is in progress which will enhance China's ability to project military power along its western border.

The People's Liberation Army (PLA), the military wing of the People's Republic of China (PRC), is making all efforts to complement essential elements to enhance military capacities at all its strategic locations.

China believes in an expansionist approach. Its growing security and economic interests in the South and Central Asian neighbouring countries necessitate infrastructural build-up to counter external and internal security threats or any unrest on its frontier.

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2. Ibid.

**REALIGNMENT OF MILITARY STRUCTURE**

The PLA was initially organised into seven military regions. A major review of the operational capabilities and infrastructure of the PLA was launched in December 2015. The reforms replaced the command structure and allowed the Chinese Communist Party to have greater control over the military and reinforce the combat capability of the PLA. The envisaged capacity improvement in reinforcement and rapid deployment of men, materials, and weapons to forward areas was aimed to be accomplished by the formidable growth of rail, road, and airport infrastructure.

In February 2016, the military regions were reorganised into five theatre commands, as depicted in Fig 1. The PLA theatre commands are accountable for formulating military strategies, policies and tactics to counter threats and crises within their Area Of Responsibility (AOR). A theatre command is structurally complex and political in nature. It is bureaucratic to a certain extent as a theatre commander shares equal authority and responsibilities with the assigned political commissar, i.e., the political head. These five commands are as appended below:<sup>3</sup>

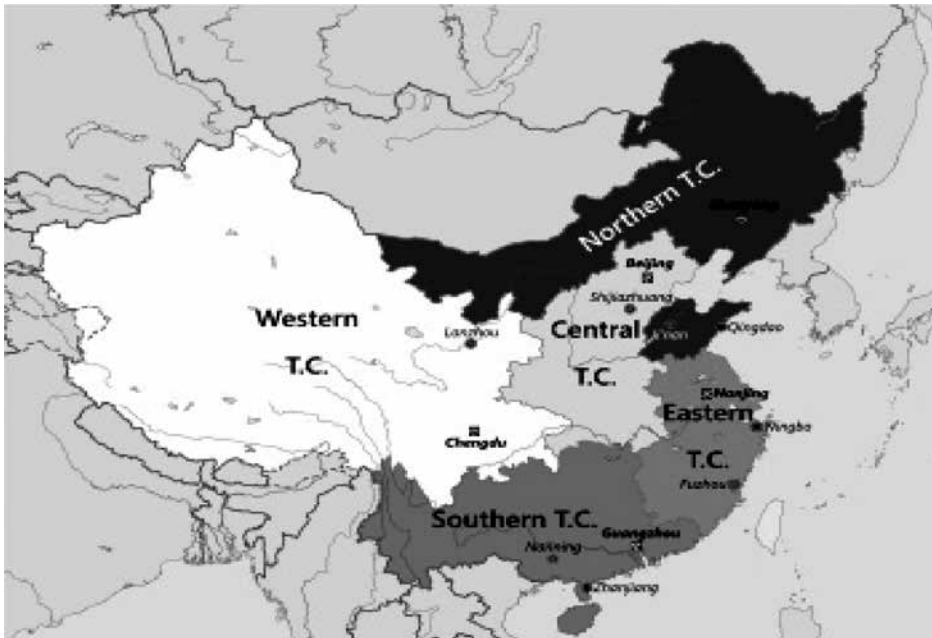
- Eastern Theatre Command with Headquarters (HQ) at Nanjing.
- Southern Theatre Command with HQ at Guangzhou.
- Western Theatre Command with HQ at Chengdu.
- Northern Theatre Command with HQ at Shenyang.
- Central Theatre Command with HQ at Beijing.

**The PLA theatre commands are accountable for formulating military strategies, policies and tactics to counter threats and crises within their Area Of Responsibility (AOR).**

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3. Claude Arpi, "New Airports on India's Borders", Tibet.net, June 15, 2018, at <https://t Tibet.net/new-airports-on-indias-borders/>. Accessed on June 10, 2022.

Fig 1: PLA Theatre Commands



Source: [https://en.wikipedia.org/wiki/Theater\\_commands\\_of\\_the\\_People%27s\\_Liberation\\_Army](https://en.wikipedia.org/wiki/Theater_commands_of_the_People%27s_Liberation_Army).

The Western Theatre Command (WTC) is the largest theatre command of the PLA, with the largest geographical area. The WTC manages the Xinjiang, and Tibet Autonomous Region (TAR) as well as the borders along the Line of Actual Control (LAC) with India. This isolated Chinese area (Xinjiang and Tibet) sharing the border with India will have 30 airports in the near future, at the disposal of the WTC to facilitate the movement of military personnel, as reported by the *Hindustan Times*.<sup>4</sup>

Infrastructural developments have played a major role in China`s rapid economic growth over the last three decades. The laying of thousands of miles of rail and road tracks for building bridges and airports has led to the

4. Sutirtho Patranobis, "China: New Airports, Routes for PLA to Transport Personnel to Tibet, Xinjiang", *Hindustan Times*, September 9, 2022, at <https://www.hindustantimes.com/world-news/new-airports-routes-for-pla-to-transport-personnel-to-tibet-xinjiang-101631186326565.html>. Accessed on June 8, 2022.

ongoing construction boom. Chinese fixed assets investment saw 5.1 per cent growth in 2019, 2.9 per cent growth in 2020 which grew by 4.9 per cent in 2021.<sup>5</sup>

China has been putting its well-known and proven construction abilities to use in recent years for the expansion of infrastructure in support of fighter aircraft and other air operations, including the building of a network of air bases, cantonments and other military set-ups.

Since the early 1950s, Beijing began building roads in the Himalayan region. The region had limited road and rail connectivity in Tibet and Yunnan province due to topographical limitations. China, therefore, has been undertaking various infrastructural projects along the India-China border in recent years. These projects include the construction of hardened aircraft shelters as well as maintenance and support resources. The key infrastructure along the India-China border has been depicted in Fig 2.

**Fig 2: Key Infrastructure at Indo-China Border**

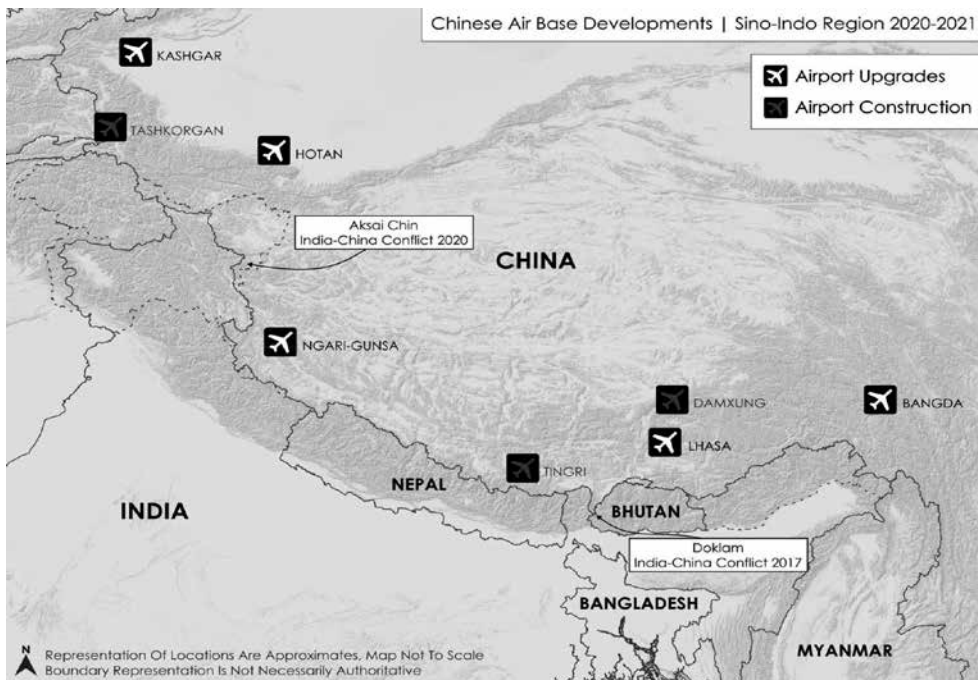


Source: <https://www.bbc.com/news/world-asia-53171124>.

5. Arendse Huld, "China Infrastructure Investment in 2022: Can it Stimulate Economic Growth?", *China Briefing*, February 11, 2022, at <https://www.china-briefing.com/news/china-infrastructure-investment-in-2022-spurring-economic-growth/>. Accessed on June 21 2022.

China has a number of airfields along the LAC with India (Fig 3), with five airports in Tibet being of dual use, i.e., for both civilian and military purposes. Upgradation of the Shigatse and Ngari Gunsa Airports and Lhasa’s all-weather Gonggar Airport is being undertaken by adding open and underground shelters, aprons and new runways. In addition, China is building three new airports in the WTC AOR. The construction work at these locations is heading for completion at a rapid pace.

**Fig 3: Existing and Planned Chinese Air Bases in WTC**



Source: <https://www.bbc.com/news/world-asia-53171124>.

Chinese airfields in the Tibet area are situated within 1,000 km of Indian Air Force bases (Table 1). Most of the airfields are at an elevation of between 3.5 km and 4.3 km Above Mean Sea Level (AMSL). To counter the aerodynamic complexities of high elevation, the PLA Air Force (PLAAF) is substituting its old combat aircraft and weapon inventory with modern and sophisticated fighters

and weaponry. To accommodate these assets, the relevant infrastructure is being created, and the existing one is being upgraded.

**Table 1: Chinese Air Bases: Elevation and Range from IAF Bases**

Air field	Elevation	Distance to IAF bases
Hoping	3900 m	300 km
Gonga Dz	3375 m	300 km
Pangta	4200 m	360 km
Donshoon	4300 m	450 km
Khotan	1380 m	600 km
Kashgar	1200 m	800 km
Shiganhe	4250 m	300 km
Golmu	4500 m	1000+ km
Bangda	4240 m	200 km
Dequen	3300 m	1000 km
Kunming	1900 m	800 km
Nachu	3200 m	600 km
Jey Kundo	1600 m	1000 km
Chengdu	600 m	800 km

Source: <https://forceindia.net/archives/archival-article-week/aerial-view/>.

Airfields in the WTC are of strategic concern for India. AVM Tiwary assesses that the “PLAAF can deploy around 16 squadrons in these airfields”.<sup>6</sup>

1. **KASHGAR** [IATA: KHG, ICAO: ZWSH; Elev: 1,380 m].

[Kashgar airport is 622 km from Srinagar, while Leh is 632 km].

Kashgar is also known as Kashi. It is a city in the Xinjiang Uyghur Autonomous Region (XUAR) in western China. Kashgar is predominantly populated by Muslim Uyghurs. It was a major business centre along the great Silk Road with a history of more than 2,000 years. It was a regrouping point for traders as the northern and southern Silk Routes converged here. These traders used to depart in group convoys for India, Pakistan, ancient Persia (present Iran) and Central Asian destinations. ‘Ivan Bazaar’,

6. AVM Arun Tiwary (Retd), “Role of Air Power in India-China Relationship”, *Force*, September 2010, at <https://forceindia.net/archives/archival-article-week/aerial-view/>. Accessed on June 20, 2022.



the reputed livestock market of Kashi, is still one of the largest and most colourful markets in the region.

Kashgar Airport (Fig 4) is a dual use one, i.e., military-civilian airport, along China's western borders in Xinjiang. The airport became operational on March 10, 1954, but the international flights started only in 2006. The Kashgar air base is approximately 475 km from eastern Ladakh.

**Fig 4: Kashgar Airport**



Source: <https://earth.google.com/web/@39.53777501,76.02159557,1367.99830297a,5828.02047071d,30.00000012y,0h,0t,0r/data=MikKJwolCiExSmVCZl85V3FIOUprM1cxZFFnUeIqQkdUaE93bVRrYWsgAQ>. Accessed on June 10, 2022.

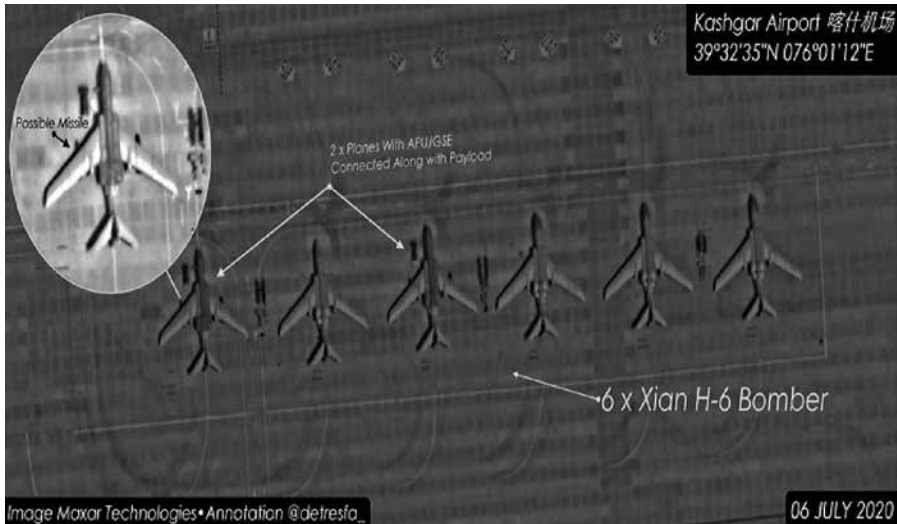
Satellite imagery of Kashgar air base shows the military infrastructural developments. These include construction of 12 new large and hardened hangars, and extension of the apron, possibly for fighters and Airborne Early Warning (AEW) aircraft, and a temporary aircraft shelter. A new active air defence site integrated within the grounds of the air base itself has been also constructed.<sup>7</sup>

The PLAAF has deployed various assets at the airport. The PLA has deployed the H-6 bombers (Fig 5).

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7. Detresfa, Sim Tack, The Intel Lab, Tyler Rogoway, "Tracking China's Sudden Airpower Expansion Along Its Western Border", *The Drive*, June 16, 2021, at <https://www.thedrive.com/the-war-zone/41065/tracking-chinas-sudden-airpower-expansion-along-its-western-border>. Accessed on June 20, 2022.

**Fig 5: Kashgar: Deployments of H-6 Bombers**



Source: <https://twitter.com/farhanjamil1975/status/1290185527421833216/photo/2>. Tweet Date: August 3, 2020.

Deployments of JH-7 and J-11/16 bombers (Fig 6) have also been observed in the satellite imagery.

**Fig 6: Kashgar: Deployments of JH-7 and J-11/16 Bombers**



Source: <https://twitter.com/farhanjamil1975/status/1290185527421833216/photo/3>. Tweet Date: August 3, 2020.

**Major protests rocked Hotan in the year 2008, when 500 Uyghur women demonstrated to demand greater self-determination for China's largest Muslim minority group.**

China has deployed its DF-4 missiles at this air base. The range of DF-4 missiles is up to 5,500 km.<sup>8</sup> To cater these deployments, all support services have been also created.

2. **HOTAN.** [ IATA: HTN, ICAO: ZWTN; Elev: 1,424 m].  
[Hotan airport is 400 km from Leh, while Srinagar is 570 km].

'Hotan' has been mentioned in Sanskrit cosmological texts with different names such as Godana, Gosthana/Gausthana/Gaustana or Godaniya, meaning the 'land of cows' in Sanskrit. The same name, in Chinese, is written as 'Yu-t'ien', and pronounced as 'Gu-dana'. The pronunciation with time has transformed to 'Kho-tan'.<sup>9</sup>

Post 225 CE, the area was inhabited by Indo-European speaking people known as the Vijaya. They were influenced by the culture of northern India and Afghanistan.<sup>10</sup>

Presently, it is the centre of a region where cotton, corn, wheat, rice and fruit are grown. The area is a gold and jade mining hot spot, and is the main source of valuable stones like jade.<sup>11</sup> Major protests rocked Hotan in the year 2008, when 500 Uyghur women demonstrated to demand greater self-determination for China's largest Muslim minority group.<sup>12</sup>

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8. India Intelligence News, Twitter, October 1, 2020, at <https://twitter.com/ExposeAntiIndia/status/1311373785941946373>. Accessed on July 11, 2022.
  9. Bangwei Wang and Tansen Sen, "India and China: Interactions through Buddhism and Diplomacy", A Collection of Essays by Professor Prabodh Chandra Bagchi, 2011, at [https://books.google.co.in/books?id=hrA1DgAAQBAJ&pg=PA186&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.in/books?id=hrA1DgAAQBAJ&pg=PA186&redir_esc=y#v=onepage&q&f=false). Accessed on June 26, 2022.
  10. Amy Tikkanen, "Hotan, China", Britannica, July 28, 2010, at <https://www.britannica.com/place/Hotan>. Accessed on June 22, 2022.
  11. Ibid.
  12. Rayon Anson, "Hotan's Jade Trade", Pulitzer Center, October 30, 2008, at <https://pulitzercenter.org/stories/hotans-jade-trade>. Accessed on June 22, 2022.

This region has been consistently under development, due to the economic and strategic goals. Various military infrastructural projects are also in progress.

The Hotan air base (Fig 7) is a dual use airport with an area of 17,493.4 sq m (as of November 2016). It is located about 10 km away from the centre of Hetian. It has a concrete runway 11/29 of 45-m width. Hotan Airport was rebuilt and expanded three times in 1964, 2002 and 2014.<sup>13</sup>

**Fig 7: Hotan Air Base**



Source: <https://earth.google.com/web/@37.03155718,79.87909014,1429.02770453a,4649.78614791d,35y,-2.37428721h,0.35982166t,0r/data=MikKJwoiCiExSmVCZl85V3FlOUprM1cxZFFnUElqQkdUaE93bVRrYWsgAQ>. Accessed on June 10, 2022.

Hotan city is near Kunlun in the south and the Taklimakan desert in the north, which affects the weather pattern. The outcome of infra-projects has been seen at the air base in the form of large structures for troops and upgradation of the ammunition points. It has an Instrument Landing System (ILS), and can undertake air operations of Boeing B747 and smaller aircraft. Satellite images indicate that fighter aircraft (Fig 8) were deployed in an operational readiness state, with Early Warning/ Airborne Early Warning and

13. John Pike, "Hotan Airport/Hetian Airport", Global Security, July 1, 2021, at <https://www.globalsecurity.org/military/world/china/hotan.htm>. Accessed on June 1, 2022.

Control (EW/AEW&C) platforms (Fig 9) and air defence units reported to be in response to an India-China face-off.<sup>14</sup>

**Fig 8: Hotan Airport Deployments of Fighters**



Source: [https://twitter.com/detresfa\\_/status/1284064851929624577/photo/1](https://twitter.com/detresfa_/status/1284064851929624577/photo/1). Tweet Date: July 17, 2020.

**Fig 9: Hotan Airport Deployments of EW / AEW&C**



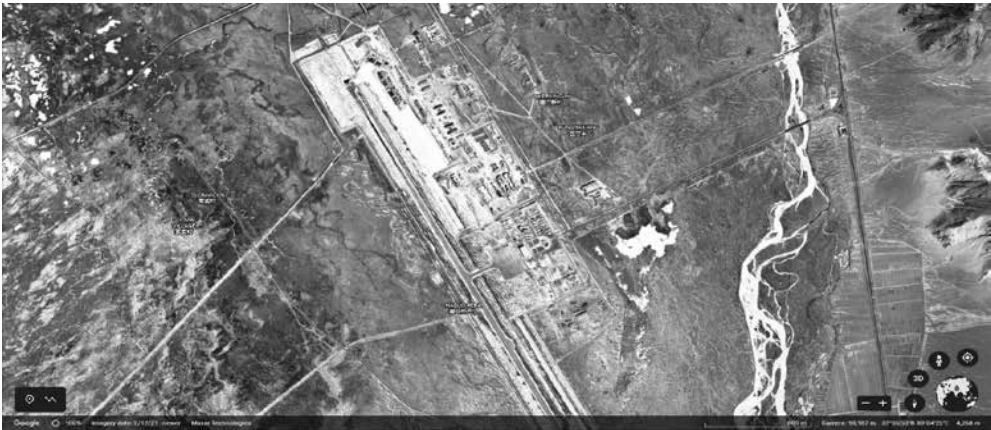
Source: [https://twitter.com/detresfa\\_/status/1284064851929624577/photo/1](https://twitter.com/detresfa_/status/1284064851929624577/photo/1). Tweet Date: July 17, 2020.

14. Damien Symon, Twitter, July 17, 2020, at [https://twitter.com/detresfa\\_/status/1284064851929624577/photo/1](https://twitter.com/detresfa_/status/1284064851929624577/photo/1). Accessed on July 11, 2022.

3. **NGARI GUNSA AIR BASE** [IATA: **NGQ**, ICAO: **ZUAL**, Elev: 4,274 m].  
[Ngari Günsa airport is 300 km from Leh, while Srinagar is 530 km].

Ngari Günsa Airport (Fig 10) is a dual use airport, also known as 'Shiquanhe' Airport. Ngari Günsa is renowned for Mount Kailash and the sacred Lake Manasarovar as religious spots. These are considered the "Holy Mountain" and "Sacred Lake" by Tibetan Buddhists and Hindu pilgrims. The nearest airport to both these locations is Ngari Airport.<sup>15</sup>

**Fig 10: Ngari Günsa: Overview, 2022**



Source: [https://earth.google.com/web/@32.10005721,80.05699112,4267.84563605a,4864.38417121d,30.](https://earth.google.com/web/@32.10005721,80.05699112,4267.84563605a,4864.38417121d,30.0000022y,360h,0.00008523t,0r/)

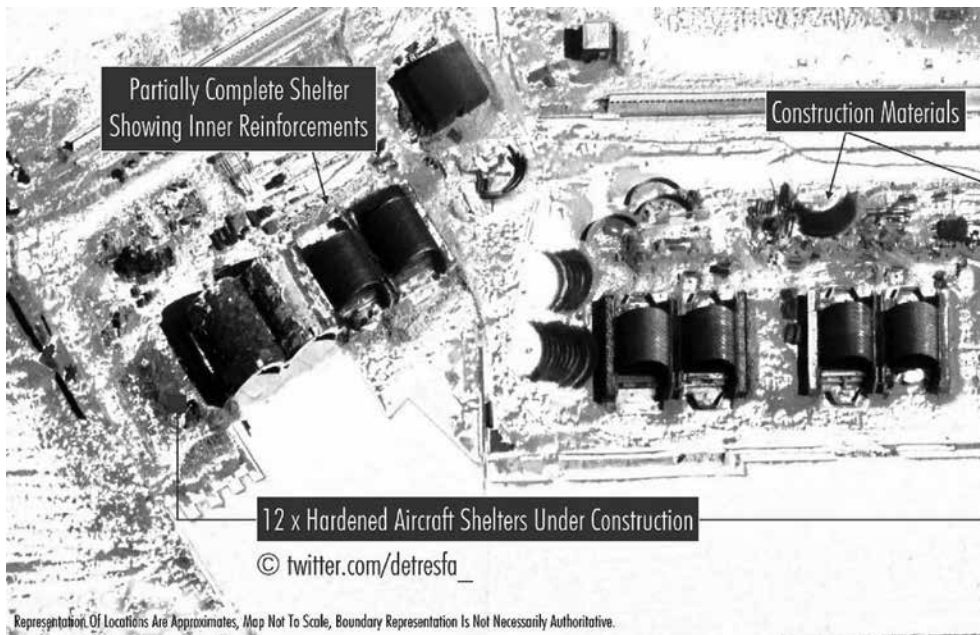
[0000022y,360h,0.00008523t,0r/data=MikKJwolCiExSmVCZl85V3FIOUprM1cxZFFnUElqQkdUaE93bVRrYWsgAQ](https://earth.google.com/web/@32.10005721,80.05699112,4267.84563605a,4864.38417121d,30.0000022y,360h,0.00008523t,0r/data=MikKJwolCiExSmVCZl85V3FIOUprM1cxZFFnUElqQkdUaE93bVRrYWsgAQ). Accessed on June 10, 2022.

China has undertaken the expansion and modernisation of a civilian air-strip into a military one by undertaking extensive construction. After Daocheng Yading Airport, Qamdo Bamda Airport, and Kangding Airport, Ngari Günsa is the fourth highest airport in the world. Construction of the airport (Fig 11) started in May 2007 and was expected to cost Yuan 1.65

15. Sonam Tenphel, "Ngari Günsa Airport Guide: Flights to Ngari from Lhasa, Kashgar, Urumchi, Chengdu and Xian", *Tibet Vista*, December 30, 2020, at <https://www.tibetravel.org/flights-to-tibet/ali-kunsha-airport.html>. Accessed on June 22, 2022.

billion (US\$ 241.22 million). Air operations commenced at Ngari Gunsa in July 2010.

**Fig 11: Ngari Gunsa Airport: Construction Works**



Source: <https://swarajyamag.com/defence/new-satellite-imagery-shows-china-has-deployed-uavs-fighter-jets-at-ngari-gunsa-airbase-close-to-lac>. Accessed on June 22, 2022.

The air base is strategically vital in view of operations in the WTC as it is close to the Indian borders. Infrastructural developments have been consistently undertaken. Massive construction activities near the runway can be established from an comparative analysis of two images, as depicted in Fig 12.<sup>16</sup>

16. Vishnu Som, "China Expands Airbase Near Ladakh, Fighter Jets On Tarmac", NDTV.com, May 26, 2020, at <https://www.ndtv.com/india-news/china-expands-airbase-near-ladakh-fighter-jets-on-tarmac-ndtv-exclusive-2235487>. Accessed on June 21, 2022.

**Fig 12: Ngari Gunsa: Comparative Overview, April 2020 and May 2020**



Source: Twitter/@detresfa, at <https://www.ndtv.com/india-news/china-expands-airbase-near-ladakh-fighter-jets-on-tarmac-ndtv-exclusive-2235487>.

According to *Swarajyamag*, “Satellite imagery of February 2021 shows that China is expanding its Ngari Gunsa air base close to Ladakh, located only 200 km away from the Pangong Lake.” A few hardened shelters and hangars have been strengthened to provide an effective shielding cover from enemy missiles and bombs to the fighter jets deployed at the base.<sup>17</sup>

To enhance the operational preparedness, regular detachments of fighters and helicopters have operated from this base (Fig 13). The base has one of the longest runways to facilitate all types of air operations.

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17. “Satellite Images Show China Is Expanding Its Airbase Near Ladakh, Building Hardened Shelters For Fighter Jets”, *Swarajya*, March 15, 2021, at <https://swarajyamag.com/news-brief/satellite-images-show-china-is-expanding-its-airbase-near-ladakh-building-hardened-shelters-for-fighter-jets>. Accessed on June 20, 2022.



**Fig 13: Ngari Gunsä: Deployment of Fighters**



Source: [https://twitter.com/detresfa\\_/status/1282241381444882433](https://twitter.com/detresfa_/status/1282241381444882433). Tweet Date: July 12, 2020.

4. **SHIGATSE AIR BASE** [IATA: RKZ, ICAO: ZURK, Elev: 3,782 m].  
 [Shigatse airport is 315 km from Bagdogra, while Darbhanga is 504 km and Gorakhpur is 655 km].

Shigatse Airport has a 5,000 x 60 m (16,404 x 197 ft) paved runway.<sup>18</sup> An asphalt overrun of a width of 60 m at each end is also available. It is the longest public runway in the world.

After the Doklam standoff, a new runway of approximately 3,000 m (9,840 ft) was constructed for the conduct of military operations. Shigatse Airport (Fig 14), a dual-use airport that was formerly used for civil flights, was transformed into an airfield. This airport is the fifth civil airport in Tibet and the fifth highest airport of China. Aircraft have to fly under very tough geographical conditions, that too in inconsistent weather while operating in the Shigatse Airport zone.<sup>19</sup>

18. Karl L. Swartz, "RKZ-Airport", *Great Circle Mapper*, 2004-2022, at <http://www.gcmap.com/airport/RKZ>. Accessed on July 6, 2022  
 19. TibetTravel.com, "Shigatse Peace Airport", January 31, 2018, at <https://www.tibettravel.com/flights-to-tibet/Shigatse-airport.html>. Accessed on June 22, 2022.

Construction of Shigatse Airport started in 1968 and was completed in 1973. The military expansion project in 2010 added an extra Yuan 512 million to the facility's value. On October 30, 2010, the airport was opened for operations. It is the fifth civilian airport in Tibet.<sup>20</sup>

The airport is strategically located at the centre of the China-India border. China has constructed the hardened aircraft shelters at this base to facilitate increased military operations in the future. There are new movable hangars, aprons and surface-to-air missile sites at the air base.<sup>21</sup>

**Fig 14: Shigatse Air Base: Overview**



Source: <https://chinapower.csis.org/china-tibet-xinjiang-border-india-military-airport-heliport/>.

Deployments of 3 EA-03 reconnaissance Unmanned Aerial Vehicles (UAVs), J-10, J-11, JH-7A, Il-76, and Mi-17 (Figs 15 and 16) at Shigatse Airport have been observed in the previous years.

20. "Shigatse Peace Airport", Wikipedia.org, May 2022, at [https://en.wikipedia.org/wiki/Shigatse\\_Peace\\_Airport#cite\\_note-xinhua-3](https://en.wikipedia.org/wiki/Shigatse_Peace_Airport#cite_note-xinhua-3). Accessed on June 22, 2022.

21. "How Is China Expanding its Infrastructure to Project Power Along its Western Borders?", *China Power*, March 16, 2022, at <https://chinapower.csis.org/china-tibet-xinjiang-border-india-military-airport-heliport/>. Accessed on June 22, 2022.

**Fig 15: Deployments at Shigatse Air Base**



Source: <https://twitter.com/dafengcao/status/916160874083057664/photo/3>. Tweet Date: October 6, 2017.

**Fig 16: UAV Deployment at Shigatse Air Base**



Source: <https://twitter.com/allsourceca/status/969259647444992000?lang=da>. Tweet Date: March 1, 2018.

5. **LHASA GONGGAR AIR BASE** [IATA: LXA, ICAO: ZULS, Ele: 3,570 m].  
 [Lhasa Gonggar airport is 383 km from Bagdogra, while Darbhanga is 615 km and Gorakhpur is 795 km].

**Nyingchi air base is a dual-use airport serving the military town of Nyingchi. The airport is located in the valley of the Yarlung Tsangpo river, which is part of the southeast of the Qinghai-Tibet plateau.**

The construction of the Chinese air base at Lhasa (Fig 17), the capital of China's Tibet Autonomous Region, began on the Yarlung Zangbo River Valley in March 1966. The construction work of the main runway finished in September 1966 with a cement surface. This airport is facilitating the services to the capital city of Lhasa, and to Shigatse and Tsetang areas of Tibet.

China regularly deploys fighters, helicopters, and other platforms at the Lhasa Gonggar airport for the maintain the supporting infrastructures developed over a period.

**Fig 17: Lhasa Gonggar Airport: Overview**



Source: <https://swarajyamag.com/news-brief/amid-tensions-china-upgrades-its-airbase-near-doklam-to-deploy-more-fighter-jets-in-tibet-builds-hardened-shelters>. Accessed on June 27, 2022.

Storage of arms, ammunition, logistics resources, maintenance shelters have also expanded. New construction of relevant structures, essentially required to ensure efficient operations, has been steadily planned and executed.

China has opened a newly constructed terminal at the airport which is claimed to be the biggest in Tibet. The airport expansion project was carried out at a cost of US\$ 603 million.<sup>22</sup> A third airstrip is planned for further expansion of the airport.

According to media reports, China had deployed 8 fighter jets, 22 Mi-17 helicopters, one KJ 500 AEW eye-in-the-sky aircraft and also surface-to-air missile systems at Lhasa Gonggar Airport.<sup>23</sup>

6. **NYINGCHI AIR BASE** [IATA: LZY, ICAO: ZUNZ, Elev: 2,949 m].

[Nyingchi airport is 235 km from Chhabua, while Tezpur is 356 km and Gorakhpur is 655 km].

Nyingchi, the evergreen city, is called “the Switzerland in eastern Tibet” due to its unique landscapes of forests and rivers which are not available in other regions of Tibet.<sup>24</sup> It has various complexities for air operations.

Nyingchi air base (Fig 18) is a dual-use airport serving the military town of Nyingchi. The airport is located in the valley of the Yarlung Tsangpo river, which is part of the southeast of the Qinghai-Tibet plateau. The airport is located in a mountainous area (with elevation of 4 km) and is surrounded by clouds and fog throughout the year. Nyingchi Mainling Airport, is the lowest airport in Tibet Autonomous Region (TAR).

The airport is in a winding valley. Therefore, landing aircraft face one of the most challenging instrument approaches in the world. The airport is just 15 km from the LAC. Consequently, it is the closest airport to India. The

22. Press Trust of India, “China Opens New Expanded Terminal at Lhasa Airport in Tibet: Report”, *Business Standard*, August 9, 2021, at [https://www.business-standard.com/article/international/china-opens-new-expanded-terminal-at-lhasa-airport-in-tibet-report-121080901158\\_1.html](https://www.business-standard.com/article/international/china-opens-new-expanded-terminal-at-lhasa-airport-in-tibet-report-121080901158_1.html). Accessed on June 20, 2022.
23. Tibetan Review, “China seen to have Upped Threat Posturing Against India with Tibet Deployments”, *Tibetanreview.net*, February 2018, at <https://www.tibetanreview.net/china-seen-to-have-upped-threat-posturing-against-india-with-tibet-deployments/>. Accessed on June 26, 2022.
24. Kunga, “Nyingchi Mainling Airport: Another Great Alternative to Fly to Tibet”, *TibetTravel.org*, September 6, 2018, at <https://www.tibettravel.org/blog/nyingchi-airport-tibet/>. Accessed on June 26, 2022.

**Fig 18: Nyingchi Airport: Overview**



Source: <https://chinapower.csis.org/china-tibet-xinjiang-border-india-military-airport-heliport/>.

forests of Nyingchi cover an area of 2.64 million hectares, or 46.3 per cent. Site clearance was a major task. The airport was built at a cost of Yuan 780 million (US\$ 96.18 million) (Fig 19).

**Fig 19: Nyingchi Airport: Infrastructural Developments**



Source: <https://theprint.in/defence/tibet-sees-jump-in-chinese-air-force-activity-after-doklam-standoff/35368/>. Accessed on July 11, 2022.

**Qamdo Bamda Airport, a dual-use air base is also known as “the world’s farthest airport away from the city”, and “the airport with the world’s worst weather” due to its high height above mean sea level. This location has prolonged bad weather conditions.**

Post the India-China standoff in eastern Ladakh, the PLAAF has increased the upgradation of airports to include air defence and other specific requirements of the PLAAF. The airport has a new terminal building with apron expansion. In addition to military infrastructure, accommodation facilities for troops have been constructed at the airport. Expansion at Nyingchi Airport caters for the supply and reinforcements for quick and efficient switching of forces by transport aircraft”.<sup>25</sup>

Nyingchi, being a large PLA military town in Tibet, has strategic importance. Chinese President Xi Jinping, who is the general secretary of the ruling Communist Party of China (CPC) and chairman of the Central Military Commission (CMC), during his visit to the Tibet Autonomous Region (TAR), discussed the affairs with senior officials of the military command of the PLA, operating at the LAC with India.<sup>26</sup>

7. **QAMDO BAMDA AIRPORT** [IATA: BPX, ICAO: ZUBD, Elev: 4,334 m]. [Changdu Bangda airport is 428 km from Chhabua, while Tezpur is 628 km].

Qamdo Bamda Airport, a dual-use air base, also known as ‘Changdu Bangda Airport’ and ‘Chamdo Pangta air base’ (Fig 20) as it is situated in the narrow valley on the western bank of the Yuqu river at the Banda meadow in Chamdo prefecture. The formal construction of the runway started in May

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25. Col Vinayak Bhat (Retd), “China Strengthens Dual-Use Nyingchi Airbase close to India-Tibet Border”, *Indiatoday.in*, December 3, 2020, at <https://www.indiatoday.in/world/story/china-strengthens-dual-use-nyingchi-airbase-close-to-india-tibet-border-1746481-2020-12-03>. Accessed on June 26, 2022.

26. PTI, “Xi Jinping Meets Top Military Officials in Lhasa; Highlights Lasting Stability and Prosperity in Tibet”, *The Economics Times*, July 24, 2021, at <https://economictimes.indiatimes.com/news/defence/xi-jinping-meets-top-military-officials-in-lhasa-highlights-lasting-stability-and-prosperity-in-tibet/articleshow/84707575.cms>. Accessed on June 20, 2022.

1993 and was completed in October 1994.<sup>27</sup> It is also known as “the world’s farthest airport away from the city”, and “the airport with the world’s worst weather” due to its high height above mean sea level. This location has prolonged bad weather conditions. Wind speed in winter is often more than 30 m per second, and the annual winter temperature drops to less than –20 degrees Celsius.

A drop in aircraft engine performance, resulting in lift limitations of the aircraft is observed due to the high altitude. To compensate for this limitation, longer take-off and landing runs are required for higher lift-off speeds. In order to ascend and land safely, the airport is equipped with a paved runway with the length of 5.5 km, which is the longest in the world.<sup>28</sup>

**Fig 20: Chamdo Bangda Airport: Overview**



Source: <https://www.topchinatravel.com/tibet-travel/main-airports-in-tibet.htm>.

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27. Namgyi and Ye Hui, “Airports in Tibet”, China Tibettour.com, 2004, at <https://web.archive.org/web/20120301105457/http://en.tibettour.com.cn/geography/200412005113103530.htm>. Accessed on June 23, 2022.

28. Top China Travel, “Chamdo Bangda Airport”, 2004, at <https://www.topchinatravel.com/chamdo/chamdo-bangda-airport.htm>. Accessed on June 22, 2022.



**To encounter the limitations of the fighter aircraft operations in the WTC area, especially close to the LAC with India, the PLA has formulated a plan for the upgradation of its military preparedness.**

Nyingchi Airport is about 740 km away from Chamdo while Lhasa Airport is about 1,150 km away from Chamdo. The airport is 136 km away from Chamdo. It takes approximately 2 hours and 50 minutes to travel to Chamdo from Bangda Airport via the G214 (Fig 21). There are shuttle buses for plying to and from the airport.<sup>29</sup>

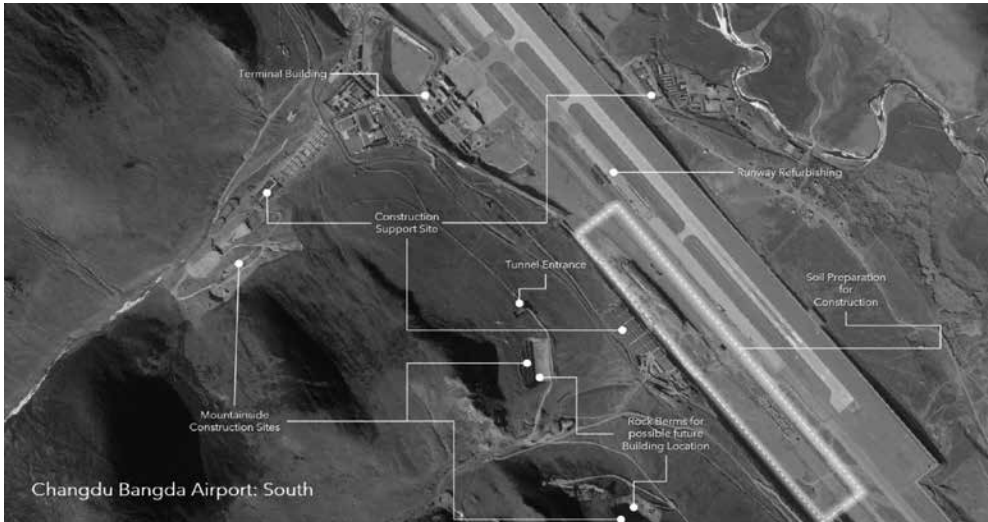
**Fig 21: Chamdo Bangda Airport Connectivity from Qamdo**



Source: <https://www.tibettravel.org/flights-to-tibet/bangda-airport.html>.

China is revamping the Changdu Bangda Airport, situated 165 km from the LAC with India in the east of Tibet. The air base had enlargement of the runway a decade ago and now has a new extra airstrip (Fig 22).

29. Cindy Xiao, "Chamdo Bangda Airport", TibetTravel.org, November 19 2019, at <https://www.tibettravel.org/flights-to-tibet/bangda-airport.html>. Accessed on June 24, 2022.

**Fig 22: Chamdo Bangda Airport: Strategic Constructions**

Source: <https://www.thedrive.com/the-war-zone/41065/tracking-chinas-sudden-airpower-expansion-along-its-western-border>. Accessed on June 24, 2022.

### **NEW CHINESE AIR BASES UNDER CONSTRUCTION IN WTC: SHAKCHE, TINGRI, TASHKURGAN, DAMXUNG**

“The Chinese Air Force has traditionally been weak in this part of the LAC with India. India has an edge over the Chinese Air Force in terms of strike capability”, as claimed by Ajit Dubey of ANI, about the balance between Chinese and Indian military capabilities.<sup>30</sup> To encounter the limitations of the fighter aircraft operations in the WTC area, especially close to the LAC with India, the PLA has formulated a plan for the upgradation of its military preparedness.<sup>31</sup>

In addition to enhance infrastructure at existing air bases and airports, the construction of new runways at several locations in the WTC is being

30. Ajit Dubey, “China Developing New Fighter Aircraft Base near Ladakh”, ANI News, July 19, 2021, at <https://www.aninews.in/news/national/general-news/china-developing-new-fighter-aircraft-base-near-ladakh20210719162905/>. Accessed on June 20, 2022.

31. Swarajya, “China Strengthens Military Presence in Tibet: To Build New Army Camps, Three Airports Near Line of Actual Control”, Swarajya, February 15, 2019, at <https://swarajyamag.com/insta/china-strengthens-military-presence-in-tibet-to-build-new-army-camps-three-airports-near-line-of-actual-control>. Accessed on June 20, 2022.

**The State Council of China and the Central Military Commission approved the construction of Shakche Airport (Fig 23) with a budget of Yuan 541 million in January 2014.**

undertaken. These projects include construction of runways at Shakche, Tingri, Damxung in eastern Tibet, next to Sikkim and Arunachal Pradesh, and Tashkurgan in Xinjiang, close to China's border with Tajikistan.<sup>32</sup> China is planning to spend around US\$ 2.6 billion on this project, Tibet will soon have three new airports in Lhasa area, according to the expansion plans designed by the Civil Aviation Administration of China and the TAR government. A communiqué

dated June 9, 2018, said: "Construction of the three airports, all above the altitude of 3,900 meters, should begin in 2019."<sup>33</sup>

Sutirtho Patranobis, a *Hindustan Times* reporter, claims, "The remote Chinese regions of Xinjiang and Tibet bordering India will soon have 30 airports at the disposal of the Western Theatre Command (WTC) to facilitate the movement of army personnel. Among these, three new airports to be built in the Tibet Autonomous Region are those at Lhunze county, Tingri county and Burang county, close to the border with India".<sup>34</sup>

The new runways will fill the large gaps between two airports along the Indian border. If PLAAF units are based at these airports, China will boost its capabilities along the border to project air power into India.<sup>35</sup>

Air facilities will be complemented by the expansion of rail and road infrastructure to promote PLA logistics and military mobility, the Tibetan Press has reported.<sup>36</sup>

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32. Ibid.

33. Ibid.

34. Ibid.

35. China Power Team, "How Is China Expanding its Infrastructure to Project Power Along its Western Borders?", *China Power*, March 16, 2022, at <https://chinapower.csis.org/china-tibet-xinjiang-border-india-military-airport-heliport/>. Accessed on June 23, 2022.

36. ANI, "China Upgrading Military Infra Along Western Frontier in Tibet, Xinjiang", *Economic Times*, March 26, 2022, at <https://economictimes.indiatimes.com/news/defence/china-upgrading-military-infra-along-western-frontier-in-tibet-xinjiang/articleshow/90464733.cms>. Accessed on June 24, 2022.

**SHAKCHE, XINJIANG** [IATA: QSZ, ICAO: ZWSC, Elev: 1,290 m, coordinates: 39° 02' 19» N 75° 51' 54» E] [Shakche Airport is 640 km from Srinagar, while Leh is 645 km] serves Yarkant County (Shache) in Kashgar prefecture of XUAR. The State Council of China and the Central Military Commission approved the construction of Shakche Airport (Fig 23) with a budget of Yuan 541 million in January 2014. The project includes four stations on the apron and other essential support services like communication, navigation, meteorology, power supply, water supply, oil supply, fire rescue, etc. It became operational in August 2017.<sup>37</sup>

**Fig 23: Shakche Airport: Overview**



Source: <https://news.abplive.com/news/india/china-developing-fighter-aircraft-base-shakche-region-near-ladakh-lac-report-1470597>.

“Shakche air base, the base near Ladakh, is coming up to bridge the strategic gap of 400 km between the existing air bases of Kashgar and Hotan which have been carrying out fighter operations along the Indian borders for a long time. This new base for fighter operations will fill up the gap for

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37. Carnoc (in Chinese), “The Civil Airport Project in Shache County”, TS.CN, January 23, 2014, at <https://web.archive.org/web/20160304191315/>; [http://news.ts.cn/content/2014-01/23/content\\_9233649.htm](http://news.ts.cn/content/2014-01/23/content_9233649.htm). Accessed on June 24, 2022.

**Tashkurgan Airport is first high plateau airport of Xinjiang.**

**Its construction commenced in April 2020 with an estimated investment of Yuan 1.63 billion (US\$ 251 million).**

the Chinese Air Force in this region,” government sources told ANI.<sup>38</sup>

**TINGRI** [IATA: none, ICAO: none, Elev: 4.3 km, Coordinate: 28° 59’38” N 86° 33’ 32” E]. [Tingri airport is 278 km from Bagdogra, while Darbhanga is 294 km, Gorakhpur is 385 km and Tezpur is 657 km].

Tingri is a high-altitude public/military airport (Fig 24) in Tingri county, TAR. It lies across the Himalayas from Kathmandu. This airfield is presently under construction. Tingri fills the gap between Burang to the west and Shigatze to the east. Its construction began in August 2019.<sup>39</sup>

**Fig 24: Tingri Airport Location: Overview**



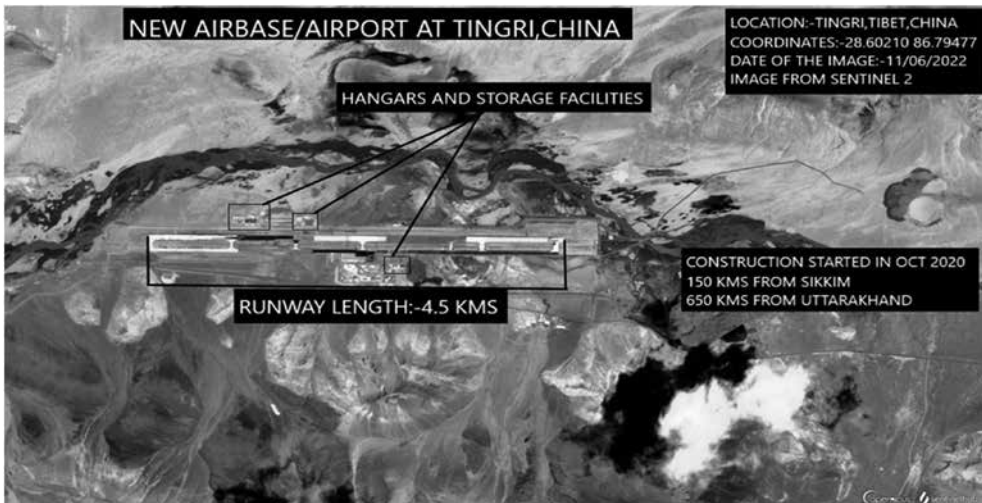
Source: [https://earth.google.com/web/@28.50025029,87.31654612,5409.7135899a,868084.98039097d,30.00000106y,0h,0t,0r/data=MikKJwolCiExSm\\_VCZl85V3FIOUprM1cxZFFnUelqQkdUaE93bVRrYWsgAQ](https://earth.google.com/web/@28.50025029,87.31654612,5409.7135899a,868084.98039097d,30.00000106y,0h,0t,0r/data=MikKJwolCiExSm_VCZl85V3FIOUprM1cxZFFnUelqQkdUaE93bVRrYWsgAQ). Accessed on June 10, 2022.

38 ANI, “China Developing New Fighter Aircraft Base near Ladakh”, *Economictimes.indiatimes.com*, July 19, 2021, at <https://economictimes.indiatimes.com/news/defence/china-developing-new-fighter-aircraft-base-near-ladakh/articleshow/84550286.cms?from=mdr>. Accessed on June 24, 2022.

39. “Substantial Progress has been Made in the Construction of Tingri Airport, and the Foundation Treatment Experimental Research Project has been Launched”, July 19, 2019, at <http://www.rikaze.gov.cn/content/2019/9790.html>. Accessed on June 22, 2022.

Recent imagery (Fig 25) shows that the construction of runways and taxiways is in progress. Likely storage sites and other associated support resources are also under construction.<sup>40</sup>

**Fig 25: Infrastructure at Tingri Airport**



Source: <https://twitter.com/Mrcool63040811/status/1536257718771519488>. Tweet Date: June 13, 2022.

**TASHKURGAN** [IATA: none, ICAO: none, Elev: 3,200 m, Coordinate: 38° 01' 45" N 75° 12' 52" E].

[Tashkurgan Airport is 414 km from Srinagar, while Leh is 458 km and Gorakhpur is 655 km].

Tashkurgan town in China, is close to Pakistan Occupied Kashmir (POK) and is located in the Tajik Autonomous County of the Kashgar prefecture in XUAR. The development of a state-of-the-art airport in Tashkurgan, Xinjiang province, was initiated by China in 2020. It neighbours Pakistan, Tajikistan, and Afghanistan.

40. Ibid.

The airport is likely to be landmark point in the China-Pakistan Economic Corridor (CPEC) and the Belt and Road Initiative (BRI). The Tashkurgan Airport will bring tourists to the Pamir plateau, known for its natural beauty and unique culture. The economic development of the entire Xinjiang region will get a boost, as per the China Global Television Network (CGTN).<sup>41</sup>

Tashkurgan is a small trading city nestled on the Pamir plateau along the Karakoram highway. The city came into the limelight due to China's US\$ 62 billion CPEC linking Kashgar in Xinjiang to Tashkurgan.

Tashkurgan has a high altitude, with a complex terrain. It provides poor clearance conditions. Inclement weather in the region complicates the infrastructural work. Seasoned construction designers with the experience of site selection and construction of plateau airports in Tibet, Qinghai and other regions were employed for this. The team considered three alternative sites in the area, within 30 km around the county seat. The sites were compared and analysed, and Aktamu, which is 13 km away from the county, was considered, deliberated upon and finalised as the airport site.

Tashkurgan Airport (Fig 26) is first high plateau airport of Xinjiang. Its construction commenced in April 2020 with an estimated investment of Yuan 1.63 billion (US\$ 251 million). The airport has been designed to handle 400 tonnes of loads and 160,000 passengers annually.<sup>42</sup> The launch ceremony of the airport was on April 26, 2022, as reported by the Chinese media. Coronavirus and high altitude sickness did affect the construction workers and delayed the project a little.

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41. Haroon Hayder, "China is Building The World's Highest Airport Under CPEC", ProPakistani.pk, April 29, 2020, at <https://propakistani.pk/2020/04/29/china-is-building-the-worlds-highest-airport-under-cpec/>. Accessed on June 22, 2022.

42. Kunal Chonkar, "China, Pakistan Discuss Mutually Strategic Tashkurgan Airport", May 12, 2020, at <https://thenews21.com/china-pakistan-discuss-mutually-strategic-tashkurgan-airport>. Accessed on June 22, 2022.

**Fig 26: Tashkurgan Airport: Overview**



Source: [https://twitter.com/search?q=Tashkurgan%20Airport%20&src=typeahead\\_click&f=top](https://twitter.com/search?q=Tashkurgan%20Airport%20&src=typeahead_click&f=top).

This airport gives China access to the remote areas of the plateau. According to the layout of the airport, there is a runway 3,800 m long, 45 m wide, a terminal of 3,000 sq m, and an apron with four stands.<sup>43</sup> Tashkurgan air base is a professed “hot and high” airport, requiring a longer take-off run than normal.

This airport will act as a springboard for China’s ambitions in Central Asia.

China has been claiming the entire Pamir region in Tajikistan. Tajikistan ceded 1,158 sq km of territory to China in 2010. The Chinese hidden agenda behind the construction of the airport in Tashkurgan, close to the Tajik border, and allowing flights from the airport, is to assert its claim. It is certainly going to affect the geostrategic equation.<sup>44</sup>

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43. n 32.

44. Brig V Mahalingam, Twitter, August 2, 2021, at <https://twitter.com/BrigMahalingam/status/1422204471971434507>. Accessed on June 23, 2022.



**Construction for the Damxung Airport began in 1955 and was completed in May 1956 (in only 118 days), involving human labour without any transport machinery. Damxung Airport in the Damxung county of Lhasa is the first civil airport of Tibet.**

**DAMXUNG** [ICAO: None, IATA: None, Elev: 4,282 m, Coordinates: 30° 31' 49" N 91° 04' 38" E].

Damxung Airport is 458 km from Tezpur, while Bagdogra is 495 km and Dibrugarh is 501 km].

Damxung means 'selected grassland' in the Tibetan language.<sup>45</sup> 'Damxung grassland' was gifted by the 5th Dalai Lama to Güshi Khan. In 1956, the county was transferred to Lhasa city. Construction for the Damxung Airport (Fig 27) began in 1955 and was completed in May 1956 (in only 118 days), involving human labour without any transport machinery.

**Fig 27: Damxung Airport: Overview**



Source: Google map; <https://t.co/gawKqxN3z6>.

45. Mei Zhimin, "A 6.6-Magnitude Earthquake hits Dangxiong County, Lhasa, Tibet", News.Sohu.com, October 6, 2008, at <http://news.sohu.com/20081006/n259875642.shtml>. Accessed on June 27, 2022.

Damxung Airport in the Damxung county of Lhasa is the first civil airport of Tibet, not the widely acclaimed Gonggar Airport.<sup>46</sup>

Damxung Airport is located in a remote location, across the river from Gongtang township in southwestern Damxung county. It is at a height of 4.2 km above mean sea level. It had a 4.5 km gravel runway. Regular upkeep of the runway comprised tedious activity due to the strong winds blowing on the rocks.

This airport had only one non-bitumen runway. Obviously, it was unsuitable for large and heavier aircraft and other modern jets. Today, the airport is well connected, with roads for transportation, etc. The pictorial layout of the area is appended in Fig 28.

**Fig 28: Infrastructure at Damxung Airport**



Source: <https://twitter.com/Mrcool63040811/status/1533726414293176325/photo/1>. Tweet Date: June 6, 2022.

46. Tenzin Woebom, "Damxung Airport, Tibet's First Civil Airport", China Tibet Online, February 7, 2014, at [http://www.vtibet.cn/en/culture/tibettology/201407/t20140702\\_209243.html](http://www.vtibet.cn/en/culture/tibettology/201407/t20140702_209243.html). Accessed on June 23, 2022.

Damxung Airport is now “out of commission gloriously”, and the runway has become a racetrack for local herders. The Lhasa Aviation Office was moved from Damxung to Gonggar Airport.

It can be assessed based on imagery that Damxung Airport may act as a standby to the Gonggar Airport in case of any contingency. Two airports, in close vicinity, may also facilitate easy launching of a large strike package.

The latest reports of areas under construction at these places illustrate various stages of the work, like the soil preparation, and outlining of runways, aprons, and associated services.

## CONCLUSION

China’s infrastructure investment has historically been a vital springboard for its economic growth. The infrastructural developments will obviously boost the rapid expansion of the civil aviation activities. But increase in flying density in any constant air space will result in further congestion of the air space. This is a vital, critical and unavoidable aspect of management of aviation growth. It must be addressed well in time to ensure the safe and efficient conduct of air operations.

Chinese infrastructural growth represents a significant increase in the capacity of Chinese air power. Since late 2012, China has significantly increased the infrastructure investment in the western part of the WTC. It has connected 61 cities by air by launching more than 100 air routes. It is anticipated that connectivity within the South Asian region will be increased in the future to boost trade and logistics.<sup>47</sup>

With its expansionist approach, the enhancement of Chinese infrastructure for military objectives, rapid modernisation of PLAAF resources as well as its aviation industry are points of concern for India. PLAAF infrastructure improvements in China’s westernmost provinces are obviously being made with the goal of projecting more air power along the contested boundary with India and enhancing the viability of air operations in event of an actual armed confrontation. To become a global superpower, the PLAAF is

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47. n. 20.

seeking and acquiring offensive dynamism. With modernised training and advanced technological support, it may pose a threat to India. In view of the enhancement of the military resources by China, adequate preparation to counter any resultant Chinese threat merits immediate consideration.

*One mark of a great soldier is that he fights on his own terms or fights not at all.*

—Sun Tzu