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Chinese Infrastructure Rush Across Northern Borders: What has Changed 'In the Last Four Years Plus'and why is it Significant

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Abstract

"Political Power grows out of the barrel of a Gun" (Peking Foreign Languages Press. 2021). True to this often quoted Maoism thought, Chinese Military (People's Liberation Army {PLA}) invaded Xinjiang (1949) and Tibet (1950) soon after the formation of the People's Republic of China (PRC) on 01 October 1949. What followed thereafter has been a continuum of infrastructure development— civil, military and dual use to strengthen the Chinese grip over these captured territories, now called the 'Xinjiang Uighur Autonomous Region (XUAR)' and 'Tibet Autonomous Region (TAR)'. Hence, India lost a peaceful border. All infrastructural development activities across the Indian frontier have had a direct impact on India - China political and security dynamics.

Fast forward to 2024 wherein the nation sees for itself, China's pace of infrastructure development has accelerated and is in a state of overdrive, especially post the India-China standoff, which commenced in mid 2020 and continues to progress at a threatening pace. These infrastructural developments have been done significantly for civil use (economic/ trade and tourism related), military utility and undoubtedly serves dual purpose at most times and places. The infrastructure thrust includes multiple road alignments, improved rail infrastructure, increased number of airports and helibases, etc. China is now supplementing its existing infrastructure across the Northern Borders by constantly modifying and improving the existing infrastructural component. In addition to the economic boost which comes along for TAR and XUAR, the fallouts of this infrastructure enhancement will include tremendous improvement in PLA's logistic capabilities by means of providing multiple and faster time options for rapid movement and deployment of troops and equipment. This improved infrastructure undoubtedly aims at consolidating PLA's grip over restive TAR and XUAR and also improves PLA's ability to project military power along the Chinese Western frontiers. This therefore, poses serious security threat across the Indian frontiers (opposite northern borders).

This article will focus on infrastructure developments opposite Ladakh, extending up to the India – China – Nepal Tri Junction, emphasising on aviation, road and railway enhancements and their strategic fallouts.

Keywords: China, India, Bilateral Relations, Northern Borders, Dual-Use Infrastructure Development

Aviation Infrastructure : Airports and Helibases

Functional Airports existed at Kashgar, Sache, Hotan (all XUAR) and Gargunsa (TAR) before the ongoing India – China standoff (Open Source Image Platforms). These airports have served dual purpose i.e. civil and miltary. Amongst these, Hotan airport reported maximum presence of military aerial assets and military like aviation activity. As far as helibases (also

termed heliports) are concerned, Xaidullah (XUAR) and Shiquanhe (TAR), have had functional helibases before the India – China standoff (Open Source Image Platforms) commenced.

New Aviation Infrastructure Developments in XUAR

All existing airports have seen considerable capability enhancement in allied and support infrastructure, in the last four years plus, especially military like, which is clearly evident from available satellite imagery.

- Kashgar Airport witnessed construction of 14 'Hardened Air Shelters' (HAS), work on which started in early 2020 (Open Source Image Platforms). These HAS were completed by late 2021 (Open Source Image Platforms) and have the ability to provide more robust protection to the fighter aircrafts.
- The Hotan Airport witnessed construction of a new runway, immediately south of the already existing one. Work on this new runway commenced in mid 2020 and was operational in early 2024 (Open Source Image Platforms). This runway is 800 meters longer than the existing one, with the allied and support infrastructure around it suggesting it to be a dedicated military purpose runway. Capability enhancement and developments to the existing support and allied infrastructure at the airport site continue till date.
- The Tashkurgan Airport, construction of which commenced in early 2020 (Open Source Image Platforms), was declared operational in December 2022 (Global Times, 2022). This is located alongside highway 'G 314' (Urumqi to Kashgar to Khunjerab Pass) at a distance of 350 Km North West of 'DBO, India (Daulat Beg Oldi, India)'. Assessing the current infrastructure here, airport seems civil, but given it's strategic location (proximity and approach to Shaksgam Valley), a quick transition to dual utility cannot be ruled out.
- The Keriya Airport (Yutian Wanfang Airport), falling alongside highway 'G 315' (Xining, Qinghai to Yecheng, XUAR) was declared operational in December 2020 (Open Source Image Platforms). This airport is located at a distance of 365 Km North East of 'DBO'. The airport reportedly serves a civil purpose, but given it's strategic location astride 'G 315' and proximity to Aksai Chin, a quick transition to dual utility, cannot be ruled out either.
- Pishan (North West of Hotan, XUAR), astride 'G 315', witnessed signatures of construction of an airfield in late 2023 (Open Source Image Platforms). This

construction activity continues till date, possibly nearing completion. Development of an airfield/ airport at this location will further increase the aviation infrastructure density, opposite Ladakh.

- Yecheng (Kargilik) witnessed construction of a new airfield post early 2023. This too is located astride 'G 315', as evident from satellite imagery ((Open Source Image Platforms). This construction activity commenced post early 2023 and continues till date, possibly nearing completion. Development of an airfield/ airport at this location will further increase the aviation infrastructure density, opposite Ladakh.
- Tianshuihai (Aksai Chin, along highway 'G-219'; Western Highway) has witnessed development of a new Helibase, work on which commenced in early 2020. The helibase now nears completion (Open Source Image Platforms). It is located 120 Kms East of 'DBO'.

New Aviation Infrastructure Developments in TAR

- The Gargunsa Airport has witnessed construction of 18 HAS, work on which commenced in mid 2020 (Open Source Image Platforms). These HAS have been built to provide more robust protection to fighter aircrafts. In addition, the airport has seen an overall improvement and capability enhancement in allied and support infrastructure, especially military like, which continues till date.
- The Purang Airport, construction of which commenced in early 2021, is seen to be in it's advanced stages (Open Source Image Platforms). It is 20 Kms North East of the India – China – Nepal Tri Junction. This airport, when operational, will be second closest to Indian Northern Borders, first being Miling (Linzhi) airport opposite Arunachal Pradesh, which is less than 15 Kms from the India's Northern Borders.
- Domar (East of Rudok, along G- 219) witnessed development of a new Helibase, work on which commenced in early 2020. This helibase now nears completion (Open Source Image Platforms). It is located 150 Km East of 'Chushul, India'.
- Development of Helistrips, opposite Ladakh, also commenced early 2021 onwards and their numbers continues to increase till date.

Why is this Aviation Infrastructure Development Significant?

Upgradations, improvements and capability enhancements of aviation infrastructure opposite Ladakh continues till date. Chinese intent of duality of utility, of any aviation

infrastructure in China, especially across Indian Northern borders in XUAR & TAR, is a given. Xinhua, the Chinese official mouthpiece, in an article of July 29, 2015 states "According to a joint statement from the country's Air Force and Aviation authority, China will advance integration of civil - military airports to strengthen aviation safety and combat support capabilities" (China Power). Even the famed Tibetologist Claude Arpi in his article mentions that "Dual use airports is a win win move for China (Arpi, C. 2016).

China today has six operational airports (Kashgar, Tashkurgan, Sache, Hotan, Keriya and Gargunsa) in close vicinity to the Indian Borders opposite Ladakh. In addition to these, Yecheng, Pishan and Purang airports are likely to be operational anytime soon. Minus Keriya and Tashkurgan airports, the other four operational airports have continuously reported presence of military aerial assets and regular military air activity (Open Source Image Platforms). There will now be four Helibases opposite Ladakh (including Tianshuihai and Domar, which are nearing completion) (Open Source Image Platforms). An increased density of such aviation infrastructure will undoubtedly enable PLA to mobilise and induct a larger force and logistic complement, in a relatively quicker timeframe. This includes personnel, equipment and logistics of varied types and purpose. Reinforcements, relief and rotation vide aerial mode, from the distant mainland, over longer distances will also be facilitated by this rapid improvement of aviation infrastructure. Building up more number of airports and helibases opposite Ladakh, also enables China to disperse it's military aerial assets, improve their existing radius of action and neutralise the shortcomings of performance imposed on it's aerial assets, due to the high Tibetan Plateau.

The presence of military elements and activities at these aviation hubs highlight the strategic motivations that underpin these developments, making them critical components of China's military strategy vis-`a- vis India, across it's northern borders.

Railway Infrastructure

Limited rail infrastructure exists opposite Ladakh. The closest rail heads are Hotan and Yecheng in XUAR, both being approximately 265 Kms North of 'DBO'. Rail head at Shigatse (TAR), operationalised in 2014 is 775 Km East of the India – China – Nepal Tri Junction.

New Railway Infrastructure Developments

Golmud (Qinghai) – Ruoqiang (XUAR) railway line (part of Golmud – Korla Railway), work on which commenced in 2014 was declared operational in June 2020 (Keju,

W. 2020). The Hotan – Ruoqiang railway line (track laying of which commenced in May 2020), was declared operational in mid June 2022 (Zhang, K. 2022). This Hotan – Ruoqiang section was last of the 2700 Km railway loop line encircling the Taklamakan Desert, China's largest desert. No further railway construction activity has been discerned in the last four years plus.

Why is this Railway Infrastructure Development Significant

Enhanced railway infrastructure, in addition to providing an economic boost to the regions of XUAR, is aimed to enhance PLA's capability and capacity to collectively mobilise it's forces and equipment over longer distances in relatively shorter duration. Railways give PLA an added option for carriage of heavy and bulky military equipment and loads, over longer distances at far higher speeds than roads. Connecting Ruoqiang with both Golmud and Hotan vide railway provides PLA two distinct advantages. *Firstly*, the force complement of 76 Group Army (GA) located in distant provinces of Gansu and 'Ningxia Hui Autonomus Region (NHAR)' can now be inducted by rail, to areas opposite Ladakh in a relatively faster time frame. *Secondly*, the force complement of 76 GA present at Qinghai province can also induct to areas opposite Ladakh vide the Golmud – Ruoqiang - Hotan rail, in a relatively faster time frame. Reinforcements, relief and rotation from distant mainland China can now mobilise in shorter time frames opposite Ladakh. Railway as a mobility and carriage platform will be optimally utilised by 'PLA Rocket Force (PLARF)', for mobilising it's missile arsenal opposite areas of Ladakh and firing per se. This is a viable and effective additional alternative and threat in being.

Road Infrastructure

'G-219' (Western Highway) connecting Lhasa (TAR) and Kashgar (XUAR) has remained the primary highway opposite Ladakh (this has now been extended to Kanas, XUAR in the North and to Dongxing, Guangxi in the South— a total of 10,065 Km (the longest National Highway in China). Another relevant highway is the 'G 315' connecting Xining (Qinghai) and Kashgar (XUAR). This highway primarily runs along Southern Xinjiang, not very far opposite the Ladakh region.

New Road Infrastructure Developments

Evident from satellite imagery (Open Source Image Platforms), China has largely improved, widened and upgraded all it's prominent roads leading westwards of the G- 219,

towards Indian borders. All prominent axials emanating from G-219, moving westwards have now been black topped and also been inter connected by freshly constructed laterals (roads). All these are complete or now nearing completion (Open Source Image Platforms).

- G-695, a newly announced road alignment (in year 2022), West of G -219, has been in news (National Highway Network Route Schedule). This highway will move from Lhunze (opposite Arunachal Pradesh) to Mazar (XUAR), opposite Ladakh. From Lhunze, it will reach Purang (opposite the India – China – Nepal tri junction), onto Zanda from where it further moves up North, ending at Mazar (XUAR) opposite Ladakh, meeting the G -219. This highway aims at joining various, already existing road alignments under one head and nomenclature, as it moves along Northern Borders as well as opposite Ladakh. This Highway finds itself much closer to Indian Borders when compared to G- 219. Development (and improvements to the existing alignments) of this Highway is under way (Open Source Image Platforms).
- G- 216 (Arpi, C. 2021), is another prominent road, which was first conceptualised by Chinese way back in 1953. This road moves from Altay (XUAR) to Urumqi, Korla, Minfeng (on G- 315), Gerze (on G- 317) to Kyirong, a county in Shigatse City (TAR) on the border with Nepal. Major part of this highway, from Minfeng (XUAR) upto Kyirong is being developed at a fast pace. This highway runs parallel to G- 219, when opposite Ladakh. There are evident signatures of construction of laterals connecting G-216 and G-219 (at Sumxi and Rudok {both on the G-219}) (Open Source Image Platforms). G-216 is neither fully constructed nor fully (Open Source Image Platforms).
- G-580 (Aksu – Hotan – Kangxiwar: all in XUAR) is another significant road being developed. The road stretches between Hotan and Kangxiwar and is more significant for the Ladakh frontiers. Kangxiwar falls astride G- 219 and is less than 100 Kms from the Karakoram Pass. A road cutting across the mighty Kunlun mountains from Hotan Southwards to Kangxiwar opposite Indian Borders is an alarming development, to say the least. This road is being developed at a fast pace and is yet to be operationalised (Open Source Image Platforms).
- G- 317. Another significant road development activity leading to areas opposite Ladakh, is the upgradation of the Provincial Highway connecting Amdo (on the Central Highway— G- 109) with Shiquanhe (on G- 219). This is being upgraded to a National Highway and will be merged with the existing G- 317 (presently Chengdu, Sichuan to Amdo).

Why is this Road Infrastructure Development Significant*?*

G- 695 and G- 216 (on to the West and East of the operational G- 219 {Western Highway} respectively) offers the PLA simultaneity of movement vide multiple avenues of approach, as well as load shedding from the busy G- 219, dispersal of mobilising forces and higher force projection ratios in much shorter timeframes. Construction of laterals gives them the opportunity and avenue to switch their force complement from one sector to the other, in event of hostilities. Enhanced road density increases their movement avenues/ capacity and shortens time frames of movement to areas opposite Ladakh. Terminal ends of all prominent axials (now black topped) (Open Source Image Platforms), branching off from G- 219 upto Indian Borders opposite Ladakh, facilitate mobile patrolling and area domination in relatively shorter time frames. These axials enable exploitation by PLA for purpose of frequent patrolling and surprise face- offs opposite areas of differing perceptions, on Indian Northern Borders.

Bridging the Pangong Tso (Open Source Image Platforms)

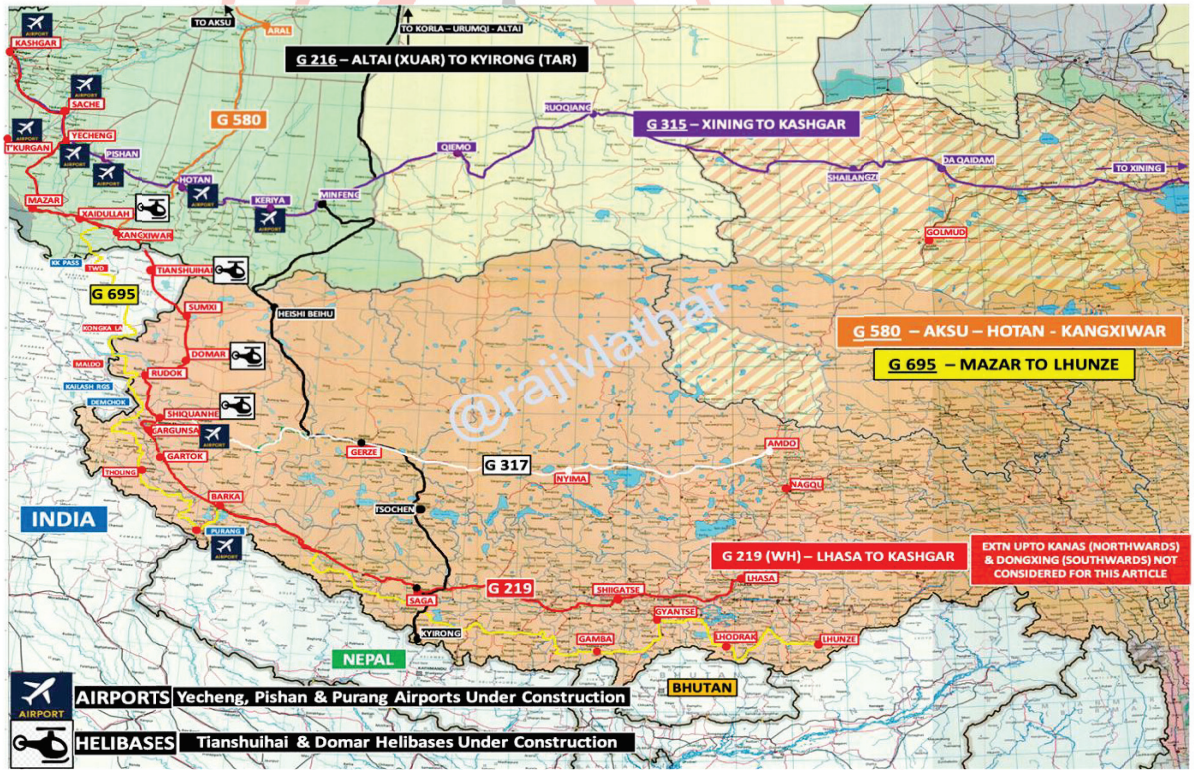
In conjunction with it's infrastructure thrust and buildup across Ladakh, China has been constructing a new bridge over the Pangong Tso Lake. The bridge spans the narrowest portion of the lake, which is approximately 450 meters wide. China started bridging activity over Pangong Tso in early October 2021 (Open Source Image Platforms). The first bridge, which is 450 meters long and 6 meters wide, was completed in early May 2022 (Open Source Image Platforms). Construction on the the second, main bridge (10 meters wide) commenced alongside in early 2022 (Open Source Image Platforms). This too is nearing completion and is likely to be declared operational anytime soon. Finishing touches to the overall bridging activity (including possible removal of the first constructed bridge) and support infrastructure development continues till date at this site (Open Source Image Platforms).

Why is this Bridge Construction Significant

Both in times of peace and hostilities, this bridge will serve as a logistical boon for PLA, by reducing time and distances drastically, between movements (personnel, equipment and overall logistics), across North and South of Pangong Tso, resulting in shorter distances traversed and lesser time taken. No more does the adversary have to fall back to G- 219 or switch his forces or equipment between North and South of Pangong Tso.

Conclusion

China has been continuously and assertively, with a strategic intent and mindset, working towards expansion of multi- modal infrastructure across Northern Borders, including opposite Ladakh. This includes aviation, roads, rail and other ground transportation infrastructure. China aims to further integrate the two autonomous regions (TAR and XUAR) into China's social and economic fabric. They have explicitly linked the new aviation and surface infrastructure to further enhance China's ability to mobilise and project strategic and military assets upto and within the two regions, opposite Indian Borders. Infrastructure expansion and enhancement remains an ever increasing threat along the Northern Borders. Chinese have shown a clear intent to further widen the infrastructure differential in such areas. While China's extensive and focused rapidly evolving infrastructure offers significant military and operational advantages, India must not let it's firm foot off the 'infrastructure boost pedal' and continue to equally accelerate its efforts in enhancing its own infrastructure to ensure and enable a credible posture across the Northern Borders.



* Yecheng Airport declared operational on November 28, 2024

Source *: Base Map of "Amnye Machen Institute, Tibetan Centre for Advanced Studies – Tibet and Adjacent Areas under Communist China's Occupation. Annotated by The Author*

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