



# Road to Progress

India's abject infrastructure in the border areas facing China is its biggest vulnerability

## To get rich, one must build roads

*Ancient Chinese proverb*

INDIA AND CHINA SHARE A 3,488KM long disputed border, though China claims the border is only 2,000km. China also claims over a 100,000sqkm of India's territory. The Sino-Indian border is a peculiar set of contradictions, being the longest disputed border in the world as also the most peaceful disputed border with the last shot fired in anger in October of 1975. A fragile peace exists ever since, with the disputed border being the ever present potential driver for conflict between the two nuclear armed neighbours, home to one third of humanity.

The 1962 war was undoubtedly a debacle for India. Wars always bring out certain lessons, both for the victor and the vanquished. Though the Henderson Brooks report stays buried in secrecy, one lesson that India learned was that

the nation needs an effective and professional armed force capable of defending its frontiers. It needs to be remembered that post 1947-1948, there was a belief at the highest political levels that army was not relevant to a peaceful India. India also shied away from constructing roads and building infrastructure along the Tibet border in a mistaken belief that lack of roads will degrade the China threat, and deter deep incursions in the event of another war.

China, on the other hand, having crossed the high Himalayas and reaching the foothills in certain areas, unilaterally withdrew. It realised the enormity of the task of sustaining a force without an adequate road network. The People's Liberation Army (PLA) on 20 November 1962 was staring at a long and harsh winter, without the means to survive and sustain in the underdeveloped high altitude captured Indian territories. China learnt its lesson well and has gainfully applied

its energy and ample resources to create a world class, state-of-the-art, multi-dimensional infrastructure in Tibet Autonomous Region (TAR). This includes a vast road and rail network, airfields, oil pipelines, logistic installations, and warehousing. The infrastructure developed has also helped China integrate Tibet, settle its Han majority, thus changing the demographic pattern in this remote and generally hostile region. A review of this infrastructure is essential.

## China

The 3,105km long western highway runs north all along the Sino-Indian border connecting Lhasa and Kashgar (Xinjiang). It is 1,455km from Yecheng to Shiquanhe with a large number of lateral roads leading to the LAC. There are three alignments from Shiquanhe to Lhasa:

- **Northern Alignment:** 1,260km long and passes through Garze connecting with the Central Highway at Amdo.

**INDIA'S OPERATIONAL NIGHTMARE** Infrastructure is amongst India's biggest weaknesses in the eastern sector



■ **Southern Alignment:** Approximately 1,850 km long, class 50 all weather road from Shiquanhe to Lhasa.

■ **Alternate Alignment:** 1,650km long road connects Lhasa–Xigaze–Saka–Garze–Shiquanhe–Rudok.

The 2,122 km long central highway connects Xining (Qinghai province)–Gormo–Lhasa. This is the main highway and the lifeline of Tibet with over 80 per cent of the goods and passengers being transported on this Class 50, two-way, black-top road.

The 1,715 km eastern highway connects Chengdu to Ngiti. From Ngiti to Lhasa is a 700 km road, thus effectively connecting Lhasa to Chengdu (home to the Military Region Headquarters with 13th and 14th Group Armies in location).

A very large network of laterals and feeders has been constructed South of River Tsangpo, right up to the numerous passes along the Line of Actual Control (LAC).

**Railways Qinghai-Tibet:** The 1,142 km, single track Golmud–Lhasa rail link also known as the Qinghai–Tibet Railway (QTR) line is an engineering marvel as it is built in permafrost terrain at heights ranging up to 5,000 metres. This rail has the capacity of moving eight passenger trains per day and five million tonnes of goods. China plans to extend this network and connect the border areas along the LAC. The projects under construction and planned are:

- Lanzhou–Naqu rail link likely to be completed this year, will also provide redundancy to QTR and double the lift capability from the mainland to TAR.
- Kunming–Linzi–Lhasa rail link slated for completion in 2017 will facilitate the build up of the 14th group Army of Chengdu Military region.
- Chengdu–Linzi–Lhasa rail line scheduled for a 2018 completion will ensure speedier build up of ground forces from Beijing, Jinan and Guangzhou as it connects TAR to the main railway lines of the East Coast.
- Extension of the QTR to Shigatse and thereafter to Yatung will bring the rail link at the doorstep of Nathu la and pose a credible threat to Sikkim, and the vulnerable Siliguri corridor through the Chumbi Valley.
- Other extensions of QTR to Xigaze–Kashgar and Hotan in the Xinjiang Autonomous region are also under construction.

**Airfields in TAR:** China has constructed 14 major air bases, upgrading Gangga, Pangta, Linzhi, Naqu and Saga; in addition to Hoping and Shiquanhe airfields, which will facilitate better pay-



**SWIFT AND SHARP** Chinese road leading up to Bum la in Arunachal Pradesh

load (weapon) carrying capability even in adverse weather conditions. Moreover, People’s Liberation Army Air Force (PLAAF) has a credible air-to-air refueling capability and hence, can optimise the main airfields in Kunming which are located at lower altitudes and thus, enable aircraft to carry full payloads. Additional Advance Landing Grounds (ALGs) have been constructed for all weather operations of Unarmed Aerial Vehicles (UAVs). Reportedly, new airfields are being constructed at Tazhong, Shache, Loulan, Tumshuq, Qiemo and Fuyun.

In recent years, China has reportedly inducted and de-inducted two division size forces in TAR in a 48 hour cycle as part of the annual exercises. This demonstrated capability is a sure signal of a three dimensional build-up and sustenance capability of PLA in the event of a conflict with India. It is also a wake-up call for India to build requisite capabilities and enhance capacities.

**Communication Infrastructure:** China has established over 70 VSAT stations in TAR in addition to an extensive optical fibre communication (OFC) infrastructure connecting all 55 counties. All command and control centres, military headquarters at all levels and border guarding forces are connected by OFC.

**Logistics Infrastructure in TAR:** The population of Tibet is approximately three million and dependent mainly on local resources. The infrastructure developed in terms of logistics installations is much more than is required to sustain the Tibetan people and has obvious military considerations. Major logistics hubs have been created at Lhasa, Naqu,

Ngiti, Shigatse, Rudok, Shiquanhe and Kasghar. Naqu hub itself with road-rail and -air connectivity is estimated to handle 2.2 million tonnes of cargo by 2015 and 3.1 million tonnes by 2020.

The present capacity of logistics bases in TAR is planned to be increased from the present three million tonnes to five million tonnes by 2022. The mother bases of Naqu, Ngiti, Tsetang, Shigatse and Shiquanhe give unmatched capability and flexibility to the PLA to apply combat power and sustain it in any or all theatre of operations.

**China Pakistan Economic Corridor:** This corridor is a saviour for Pakistan as it provides strategic security linkages with China, domination of Afghanistan and the balancing of India. President Xi Jinping’s recent visit and the promised USD46 billion investment has also energised a failing Pakistan economy. The Karakoram Highway (KKH) is the world’s highest paved road connecting Pakistan’s Northern Areas, through the ancient Silk Route.

A 1,300 km road connects Kashgar in Xinjiang to Abbottabad in Pakistan. It has been built by piercing through the formidable Karakoram-Himalayan mountain ranges. The KKH physically links the politically sensitive but resource rich region of Xinjiang to Beijing in the East, and Gilgit-Baltistan in the West. The proximity of Gilgit-Baltistan to Afghanistan, Tajikistan and India, in addition to Xinjiang and Tibet, gives Pakistan a strategic, economic, diplomatic, logistical and political advantage. From China’s perspective, KKH is the alternate energy supply route from the Persian





**AIR COMFORT C-130J landing at DBO. In the absence of roads, Indian military has to depend extensively on aerial support**

Gulf to Xinjiang, and gives it the much sought after access to the Straits of Hormuz and Suez Canal. It also needs to be highlighted that President Xi Jinping, signed the pending Gwadar Development Agreement within 24 hours of assuming power on 11 March 2013. The security implications of this corridor were detailed in the cover story of the April issue of FORCE.

## India

As a misplaced strategy, India shied away from constructing roads along the India-China border. In 2010, defence minister A.K. Antony, while addressing a function organised by the Border Roads Organisation (BRO), said, "Earlier the thinking was that inaccessibility in far-flung areas would be a deterrent to the enemies." He acknowledged that this was an 'incorrect approach' and stated that the government has decided to upgrade roads, tunnels and airfields in the border areas.

The China Study Group approved 73 roads to be constructed in 2005. However, only 19 of these roads have been completed. The delay can be attributed to multiple reasons from bad planning, environment clearances, construction capacities, lack of will to take hard decisions and funding. The fact remains that the much needed road connectivity along India-China border is either non-existent or woefully inadequate even for development of the region, leave aside defence needs.

Ladakh is connected by two major

passes, Zojila, which remains open for approximate five months a year, and Rohtang, which remains open for a lesser duration. This limited period of road days available are just about adequate to meet the ever increasing material demands of the people of Ladakh and the army for sustenance during winter.

The old Tibet road is the single road axis leading to Puh from Shimla in Himachal Pradesh. This axis is prone to major disruptions during monsoons and closes in part during winter. Similarly, the roads leading to Harsil, Joshimath, and Tawaghat are no better and no closer to the LAC. The Uttarakhand floods of June 2013 are a stark reminder of the state of road connectivity and susceptibility to weather. Sikkim, too, remains connected from Siliguri with a single road axis prone to disruptions during monsoon and winter.

Three bridges over the mighty Brahmaputra river and an odd ferry connect Arunachal Pradesh to Assam. The 319 km road from Tezpur to Tawang remains in poor state, and takes over nine to 10 hours. The recent visit to Tawang by defence minister Manohar Parrikar will hopefully give the much needed impetus to road construction and maintenance, now that the BRO is directly responsible to the ministry of defence (MoD).

To summarise, road-heads in India are five to 50 km from the LAC in eastern Ladakh, whereas China has constructed roads right up to its perception of the LAC in most areas. In the middle sector, Indian roads are 30 to 70 km vis-a-vis five

km of China. Indian roads are 10-15 km short of LAC, wherein China has the last mile connectivity to the passes both in Sikkim and Tawang. In the areas of east Arunachal Pradesh the state of roads is dismal with the LAC being 20 to 70 km from the road-head, whereas the Chinese roads are mostly up to the LAC and in a few places, a mere 20 km away.

India is planning to construct nine strategic railway lines along the northern borders to facilitate regional development and movement of troops and stores. The estimated construction cost of the nine lines is pegged at Rs 55,831 crore.

Fortunately for India, the airfields located in the plains are in the proximity of the borders. Additional air bases are being planned to be constructed and others made operational close to the border. As these bases are located in the plains, the air assets can be fully exploited. However, there remains an urgent need to construct ALGs and aviation bases for helicopters and UAVs.

## Implications

The yawning gap in the quantity and quality of India and China's infrastructure near the LAC has multiple implications. Militarily, these implications for India are far reaching. C. Raja Mohan, a leading expert on China and strategic affairs, contends that China's road-building is unlikely to lead to a military confrontation between the two countries, he believes that the current expansion of Chinese infrastructure in Tibet confronts India with a different set of chal-

lenges. For one, it brutally exposes the poor state of transportation networks on the sub-continental side — the southern slopes of the Himalayas. Raja Mohan states that the message from China is clear: on the frontiers, infrastructure is power in its broadest sense. The awful state of infrastructure on the border is the result, incredibly enough, of a deliberate policy in New Delhi over the last several decades, that is, not to develop connectivity along the frontier.

China has concentrated on the three Rs along the LAC i.e. Roads, Radars and Reserves. PLA troops are located on road-heads and have the ability for quick reaction/ action given the mobility provided by the road connectivity and early warning by the surveillance radars which have been liberally deployed all along the LAC. In addition to an effective and efficient border management, this facilitates China's claims to the disputed territories, and brings civil settlements closer to the LAC.

China has effectively reduced the hitherto build-up capability to wage a war against India from a two campaigning seasons (spread over two summers) to a single season. Employing the multi-dimensional infrastructure available, China has now the capability to build requisite forces in a few weeks time, apply and sustain them from within existing logistics resource within TAR and replenished from mainland China. This capability is further enhanced as PLA's 15 Airborne Corps and Rapid Reaction Forces can be air-lifted to augment the combat power deployed in situ. This is a significant military threat as it enhances the PLA's ability to engage in a short and swift war.

China, thus, has created the capability to rapidly build, apply and sustain requisite combat power in the event of a war with India. Coupled with logistics installations which house over 300,000 tonnes needed to support the combat forces, China has the ability to maintain the momentum and logistically sustain a war from within the resources deployed in TAR for over a month. The supply chain of course would replenish these stocks from day one.

The existing infrastructure provides China the flexibility for application of its combat power in any chosen sector as also to rapidly move and deploy mechanised formations and exploit these for a quick manoeuvre and capture of claimed Indian territories and sensitive areas especially so in eastern Ladakh and north Sikkim. It also facilitates the deployment and employment of Second

Artillery Division, with some serious consequences for India.

## Options for India

India will need to optimise all elements of national power and maximise its use of soft power or smart power, to include diplomatic, economic, military, informational, and political. It needs to give further impetus to the 'Act East Policy' and make it more dynamic and purposeful to ensure initiatives with Japan, Vietnam, Laos, Cambodia, Myanmar and Mongolia are carried to their logical conclusion.

The roads are the first basic need; the airfields, ALGs and logistics installations can only be constructed once the road communication network is in place. The Modi government has demonstrated the resolve to take and implement hard decisions in the interest of national security. Below are some of the initiatives which the government needs to take on a priority basis in a time bound manner.

Amend the land acquisition bill 2014 to exclude 100 km along our northern borders and 50 km along our western borders, required for defence needs, i.e. national security.

Prepare an integrated infrastructure development plan for the northern borders with a new framework. The National Highways Authority of India (NHAI) should be made responsible for ensuring construction of main and alternate highways as also the state highways and major arterial roads. The feeder roads can be constructed and maintained by the BRO and the last mile connectivity can be undertaken by the army from the operation works funds and integral engineering resources. At present the BRO is ineffective and incapable of meeting the road construction targets and needs major overhaul. The systems are such that they deter private players to be part of the infrastructure development. The construction of roads need to

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be outsourced to private players, these could be outsourced in clusters to ensure economy of scales and optimising the usage of the plant inducted, as in the high altitude areas the plant otherwise will lie idle for six months a year.

China respects strength and exploits the weak. It is imperative that India builds capabilities and enhances existing capacities. The raising of the accretion forces including the mountain strike corps (MSC) is a long overdue capability. The government must provide fiscal support to ensure that the planned timelines are met and the strike corps is raised with full compliments and equipment. The reports of the raising of the strike corps being frozen if correct will be like delivering a stillborn baby placed permanently on a ventilator. Paucity of funds cannot jeopardise national security.

There is an apparent urgency on the part of both India and China to resolve the boundary question starting with a common understanding of the LAC. The joint statement post Modi's recent visit to Beijing states: "The two sides affirmed that an early settlement of the boundary question serves the basic interests of the two countries and should be pursued as a strategic objective by the two governments. Bearing in mind the overall bilateral relations and the long-term interests of the two peoples, the two sides are determined to actively seek a political settlement of the boundary question."

This is a major shift in positions by both on the boundary question. With two strong and pragmatic leaders in Prime Minister Narendra Modi and President Xi Jinping, the resolution of the boundary and a common understanding of the LAC seem doable. As negotiations start in right earnest, it becomes imperative to give the much-needed impetus and focus to infrastructure development, to reinforce own claims.

The present force deployment along the northern borders is effective and capable of defending our territories, however, it is not a cost-effective model, as it is based on ab initio deployment of defensive forces all along the 3,488 km long LAC. In addition to the defence needs, the road-rail-air infrastructure will give the much needed impetus to development of our remote border region and contribute to education, health, tourism and economic benefits accruing to the people leading to long term peace, stability and development. ||

*(The writer is a former director general military operations)*