

---

## Infrastructure Development in Tibet and their Military Dimensions

---

Virendra Sahai Verma\*



The broad core of 12<sup>th</sup> Five Year Plan ( 2011-2015), approved by the National People's Congress and released to public on 13 March 2011, addresses core issues of unbalanced regional development. It seeks to expand domestic demand and improve industrial structure by double income, guaranteed housing and massive development of western regions.

The initial comments on the plan are; "The plan has now turned its attention to increasing people's prosperity than national strength."<sup>1</sup> "The plan basically abandons concept of creating a consumer driven economy and falls back to the standard Chinese economic model of depending on massive infrastructure projects and export driven growth as primary models."<sup>2</sup> The plan would thus focus on accelerating infrastructure projects in western

China, which has lagged behind in most developmental indicators. Chinese People's Political Consultative Conference has called to "bring prosperity to border areas" campaign in the next plan.<sup>3</sup> Earlier in January 2010 at the Tibet Work Conference, President Hu Jintao had also called for the need for "leap frog development" to bring stability in Tibet and Xinjiang which have both seen ethnic unrest.

The priority of the 12<sup>th</sup> Plan is also in keeping with 'Western Development Strategy' in vogue since 1990. Ninety per cent of China's population lives in 10 per cent of the land in its developed eastern regions. The focus of development in Tibet and Xinjiang would cause movement of population from eastern regions. Thus, it would be prudent to watch over the next five to ten years the intensification in improvement in roads, rail, hydropower, airports, in the western regions largely inhabited by the minorities.

\*Virendra Sahai Verma is a former officer from Intelligence Corps Indian Army and presently a Visiting Fellow at Institute of Chinese Studies, New Delhi.

## INFRASTRUCTURE DEVELOPMENT IN TIBET AND THEIR MILITARY DIMENSIONS

Earlier in March 2010, in India, cutting across party lines 19 MPs expressed concern over military build up of China in Tibet. The Raksha Mantri (Defence Minister) explained in his statement some of the developments in Tibet and the steps which India has taken to counter the same. This presentation which was given by the author at the Institute of Chinese Studies on 30 March 2011 examined the military dimensions of the existing infrastructure, which has itself transformed the logistics of PLA considerably. The projects of road, rail and airports in pipeline are also discussed.

### Military Deployment

It is necessary to understand some of the unique features of military deployment in Tibet in order to understand this paper better.

#### *Military Regions.*

PLA has seven military regions. Lanzhou Military Region with Ari Military Sub District is responsible for Ngari area (western Tibet). Chengdu Military Region has Tibet Military Dist for rest of Tibet Autonomous Region (TAR).

**Figure 1**  
**China's Military Regions**



## INFRASTRUCTURE DEVELOPMENT IN TIBET AND THEIR MILITARY DIMENSIONS

---

### **1 *Availability of Troops in Tibet.***

Due to harsh environment and high cost of logistics, permanent deployment of troops in Tibet is restricted to two independent infantry Brigades, border regiments independent battalions and Para military troops. This is approximately total of 60 000 troops. This force is considered adequate for limited operations to occupy lightly held frontiers of India. For additional tasks, reinforcements of six to eight divisions are sought from Chengdu and Lanzhou Military Regions. In pre-Olympics riots in Tibet plateau in 2008 and in previous occasions additional troops were mobilized from these military regions. In addition, PLA has rapid reaction brigades in each group armies at the military regions. These are based on air transportation. PLA has recently tested deployment of some of the rapid reaction brigades of military regions in a high altitude area in TAR. For any limited war against India this potential might be sufficient.

We may also note that there is no shortage of troops in PRC. The limitation is logistics and restricted deployment areas in border regions. This restricts the total induction to about 30 to 35 Divisions (6/7 Group Armies). China is expected to use the full potential of as many combat

divisions only in an all out war. The total war may be in all sectors the main thrust would be to capture an important area which achieves their political objective and justify the war. It does not require much guess that such objective may be Tawang/ Arunachal Pradesh.

### **2. *Induction of Troops.***

The substantial recent improvement of rail, road and air arteries has made the induction and sustenance of troops from main land to bases in Tibet easier and less time-consuming than it was few years back. There are three main highways viz., northern, eastern and western, to Tibet and rail from main land to Lhasa. Aksai Chin road is very important for induction and maintenance from Xinjiang Military Region to Ngari area in western Tibet.

However, the difficulty in moving forward and maintenance of such a force from bases in Tibet, like Lhasa and Shigatse, to road heads and beyond in Himalayas still persists. Thus the forward movement will be slow and in echelons.

### **3. *Air Capability.***

Since all airfields in Tibet are in high altitude, combat efficiency of load carrying and range of their

fighters and transport aircrafts is reduced. Indian Air Force operating from lower airfields have longer range and more load carrying capacity.

#### **4. *Limited Campaigning season.***

Due to heavy snow and rain in the combat zone in high Himalayas the logistical build up and combat is severely restricted between mid December to mid-August. Thus the ideal campaigning period available is from mid-August to mid-December, i.e., about 120 days are available in a calendar year.

#### **Logistics Simplified**

- 1 A daily maintenance of PLA division of ten to fifteen thousand troops in moderate combat role may require 300 tons. Thirty Divisions will require 9000 tons per day. The road capacity of three main highways is approx 8000 tons to 10,000 tons per day. Thus, daily capacity of three highways almost meets the daily requirement of 30 divisions at 300 tons per day for 120 days. The stocks already held are available as reserves and for civilian population.
2. PLA would stockpile for a further period of 120 days for 30 Divisions for contingencies. This

requirement may be less ie 100 tons per day per division. They would also need to maintain civilian population. All of this would need approximately 100 tons per division per day for 120 days. This can be done in approx 30 days. Approximately 30 to 35 days are required for stocking for contingencies.<sup>1</sup>

3. PLA would use extensively recently built railways to Lhasa for induction of troops. It is 58 hours' (approximately two days) journey from Beijing and one train can take 900 passengers which means a battalion. At present two/three trains are running every day. It is assumed that the PLA can mobilize 10 trains per day. Division will take 20 trains and group army of 4 divisions will require 140 trains. With turn around time of four days, about one division will move from mainland to Lhasa in six to eight days carrying essential infantry arms and ammunition. Heavy equipment, guns and engineer equipment can follow by freight trains and by road. Essential troops are expected to move by air. Acclimatisation and move forward to deployment areas would be done in this period.
4. PLA is likely to move a group army of four divisions in maximum of 30-

## INFRASTRUCTURE DEVELOPMENT IN TIBET AND THEIR MILITARY DIMENSIONS

---

### **Mobilisation of 30/35 Divisions to Tibet**

Stocking by road	30 days
Induction of tps to Lhasa/Shigatse by rail	30 days
Move fwd to Rd Heads/Conc Areas by road	20 days
Time taken approx	50-60 days
Ideal Period avaibale for combat in same season	60-70 days

Earlier assessment was for most of one full season 120 days for stokcing/ inductions. Thus operations could not take place in same season.

### **Budget Allocation**

11th Five Year Plan 2006-11 26 Billion Yuan Target 58,000km

12th Five Year Plan 2011-15 50 Billion Yuan Target 70,000 KM

All ruran townships will be covered by highways.<sup>4</sup>

40 days, roads for pre combat stocking, railway for induction of troops, simultaneously. Airforce is likely to be used for initial echelons and rapid reaction brigades. Let us assume move forward from Lhasa-Shigatse to road head and beyond to concentration areas at the border will take another 15 to 20 days. Even then 60 to 75 days of ideal combat period , at a rough estimate, is available in same season.

The full mobilization of 30-35 divisions from main land right up

to concentration areas would now take about 50-60 days which earlier used to take more than 120 days. It is reduced to almost half primarily with rail to Lhasa. It is likely to be further reduced with extension of rail and road in forward areas.

5. This has an important military dimension. PLA can move its full combat potential of 30-35 Divisions in same season with availability of adequate reserves for 120 days and 60-75 days of ideal campaigning period. For limited operations

## INFRASTRUCTURE DEVELOPMENT IN TIBET AND THEIR MILITARY DIMENSIONS

FIG 2: ROAD NETWORK IN TIBET

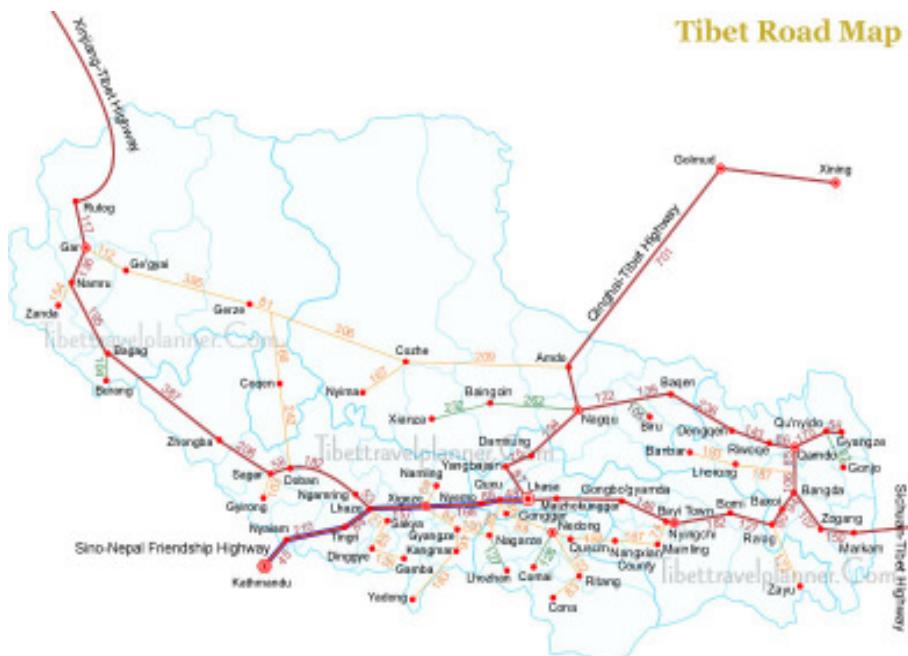
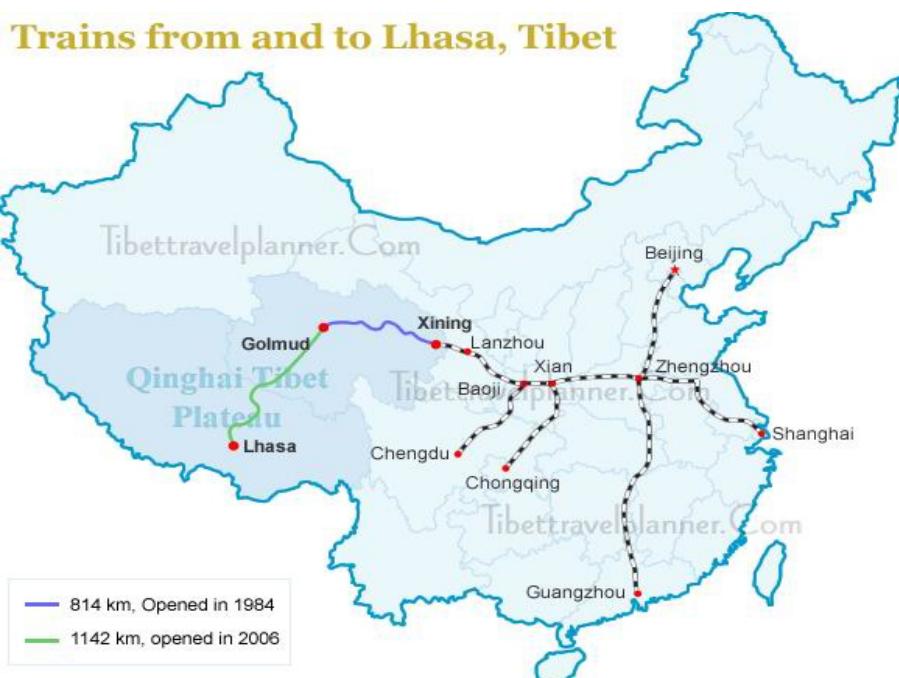


FIG 3: RAILNETWORK IN TIBET



## INFRASTRUCTURE DEVELOPMENT IN TIBET AND THEIR MILITARY DIMENSIONS

---

employing about 8 to 10 Divisions there are in any case enough resources and time in the same season.

6. The warning period available is thus considerably reduced.

### **Current Strategic Projects**

1. Black topping of entire highway to Nepal.
2. Lhasa Gongga Expressway. 37.9 km to be completed in March 2011.
3. Nyingtri Prefecture-Metog 117 Km highway . It is located at the lower end of Yarlung-Tsangpo River at eastern end of Himalayas close to Indian border. Metog county population is only 10,000 whereas the project cost is 950 Million Yuan (\$ 138.6 Million). The road is strategic. It will take one more year to complete due to huge tunnels through which it is being constructed.
4. Shih chuan Ho -Hotan Highway.
5. Rudok-Aksai Chin Road.

### **Railway Net Work**

#### ***Golmo-Lhasa Rail***

Indigenous technology that resolved insoluble problems of

frozen earth and altitude sickness had surprised the world. In 2006, China successfully completed Golmo-Lhasa railway project, one year ahead of schedule.

The Tibet Railway is 1,956 kilometers from Xining, Qinghai Province to Lhasa. The Golmud-Lhasa section, construction started in 2001 extends 1,142 kilometers with the highest elevation being some 5,072 meters above sea level at Tanggula Range making it also the highest railway in the world. Great forethought, ingenuity and creativity overcame the engineering difficulties during construction, the design of the train itself, and the efforts made to protect the environment, flora and fauna. Since the opening of Qinghai-Tibet Railway, great changes have taken place in Lhasa and other cities along the route.

It is 58 hour journey from Beijing carrying 900 passengers. There are three routes. Beijing-Lhasa daily train. Alternate day Chengdu-Lhasa/Chongqing-Lhasa. Another route in pipe line to start alternative service is between Shanghai-Lhasa/ Guangzhou-Lhasa. Thus three to four thousand passengers can reach Lhasa every day.

PLA Air Force recently used Lhasa rail to transport combat material.

## INFRASTRUCTURE DEVELOPMENT IN TIBET AND THEIR MILITARY DIMENSIONS

---

ballistic missiles were also transported by rail to Tibet to test if they can withstand change of pressure.<sup>5</sup> Since 2010 Tibet Military Region is very active using Lhasa rail for military exercises.

### ***Lhasa-Shigatse Rail***

253 km long rail under construction is expected to be operational by 2014. Shigatse is second biggest city. It is traditional seat of the Panchen Lama at Tashilhunpo Monastery. Feasibility studies have been carried out to extend the rail line by another 400 km to border town of Nyalam. Kathmandu will be not more than 120 Km away. Besides enhancing Chinese influence in Nepal the rail will have strategic military significance.

It is learnt plans exists for extension of rail line to Yatung in Chumbi valley, at the door step of Sikkim, Bhutan and vital Siliguri corridor. *China Daily* on 27 September 10 announced extension of Lhasa rail to Nyingtri, close to Arunachal. This will make deployment of troops opposite Arunachal faster. The work will begin in 2013

The extension of railway lines to Nyalam and Yatung will boost trade to India and Nepal and will usher development in the region. Yatung –

Nathula-Sikkim trade route would prosper. The plan appears to open major trade avenue to south Asia though these axes.

It was pointed out earlier in the paper that it is still difficult and time consuming to move troops from Lhasa/Shigatse to road head and concentration areas in Himalays. Rail at the door steps at Yatung and Nyingtri will make deployment as much faster with much less notice.

### ***Golmud-Korla (Xinjiang) Rail***

The bidding for designs has commenced for 1240 km rail between Golmud to Korla in Xinjiang. \$ 784 million project will start this year. When completed the distance between Lhasa and Urumqi will reduce by 1000 km. It will pass through Kunlun mountains, Qaidam basin, Milan, Tarim Basin thus necessitating the technology to overcome frozen earth and high altitude. Officially stated purpose of the gigantic project is ethnic unity. It is the first direct rail link between Tibet and Xinjiang.<sup>6</sup> The military dimension is considerable switch over of troops between unrestive minority regions.

### ***Sichuan -Lhasa Rail.***

A long term project presently on paper is 1629 km Sichuan-Lhasa rail

## INFRASTRUCTURE DEVELOPMENT IN TIBET AND THEIR MILITARY DIMENSIONS

---

Airports in Tibet are as follows:-

- |                           |   |                                   |
|---------------------------|---|-----------------------------------|
| 1. Gonggar                | Lhasa   | 3600 meters altitude.             |
| 2. Bamda                  | Chamdo  | 4300 meters highest in the world. |
| 3. Shigatse Peace Airport | Shigatse  | Oct 10                            |
| 4. Gunsa                  | Ngari   | June 10. 4000 meters altitude.    |
| 5. Nyingtri               | World's most difficult to access due to narrow Yarlung Tsangpo river valley. Open 100 days in a year. |                                   |
| 6. Nagchu                 | North Tibet   |                                   |
| 7. Xigage                 | Construction announced in Apr 2010.   |                                   |

line. This will cover Chengdu- Lhasa in eight hours. Biohuan -Lhasa road takes three days. 100 billion yuan project is expected to boost economic growth along the way including Yulung copper mines with 6.5 million tons proven reserves. Chengdu being the HQ of Military Region and an important base for military reinforcements is significant. The mobilization of troops from Chengdu will be considerably reduced

### ***Yunan-TAR Rail.***

Recently commenced Dali-Lijang rail in Yunan is said to be part of larger network to connect Kunming to TAR

### **Airports in Tibet**

Raksha Mantri stated in Parliament on 06 March 2011, " PLA is also rapidly upgrading several other

airstrips in TAR as well as south China to add to five air bases from where Chinese Sukhoi -27UBK and Sukhoi-30 MKK fighters have practiced operations in recent times."<sup>7</sup> The Minister was referring to division level exercise in June/July 2010 where a mechanized formation had moved as rapid reaction force. In this for the first time Sukhoi aircrafts were used.

### **Recent Military Exercises**

'Ex Stride 2009' was a long range war game involving more than 50,000 troops held in Aug 2009. It involved moving four rapid reaction brigades from four military regions namely Shenjang, Lanzhou, Jinan and Guangzhou.<sup>8</sup> PLA focus in recent years is to increase coordination and mobility between country's seven military regions which was found

lacking in 2008 unrest in Tibet and in Sichuan earth quake same year

### **Tibet: World Class Tourist Destination**

"Tibet is being reinvented as opportunity for globalised leisure industry where it competes with destinations world wide." <sup>9</sup> It has been declared a 'pillar industry' in 2010-2020 master plan. 2636 new hotel rooms are already under construction. By the end of 2020 the annual visits of tourists will exceed 20 million, three times of 2010. It will not be one city destination. This will need new airports, expressways, railway lines, hydro dams, power stations. As per reports star properties alone will rise to 500 from 350 now. Tourism was 14 % of GDP of TAR in 2010.

### **Conclusion**

The development of infrastructure in Tibet and other backward regions in western China is part of an equated

development since 1990. This has been further strengthened in the 12<sup>th</sup> Five Year Plan. Tibet is also being reinvented as a world tourist destination. Projects of road, rail and airports are essential for development for Tibet and other minority regions. The projects close to the border have significant military orientation.

The existing infrastructure makes rapid deployment of full potential of thirty-thirty-five division possible in about 50/60 days. PLA is capable to launch operations in the same season. After ongoing and new projects are completed by the end of 12<sup>th</sup> five year plan, PLA capability will further enhance. There is need for constant review of the situation. Raksha Mantri has assured that the government has taken "cognizance" of the situation. He also outlined some steps being taken by Indian government. However, he has to match his words with necessary action on the ground. ■

### **Notes**

- 1 James Fallows, 'China's 12<sup>th</sup> Five Year Plan, Is it wrong to plan ahead,' 15 Feb 2011
- 2 Steva Dickinson, 'China's 12 Five Year Plan: Infrastructure, Infrastructure and More Infrastructure,' posted on 18 March 2011.
- 3 *Times of India*, 07 March 2011, 'China Plans Tibet-Xinjiang rail links.'

- 
- 4 *The Hindu*, New Delhi, 'MPs express concern over China's Military Build up along Border' 07 March 2011
  - 5 *Xinhua* report 30 September 2010
  - 6 *Times of India*, New Delhi, 07 March 2011.
  - 7 *PLA Daily*. 03 Aug 2010, 'A new improvement in military transportation capacity of PLA Air Force in combat support.'
  - 8 *The Hindu* , 'MPs express concern over China's Military Build up along Border' 07 March 2011)
  - 9 *Tibetan Review*, September 2009, p 28)
  - 10 Gabriel Lafitte, *Tibetan Review*, Delhi, Nov 10,