



Modes of Travel in Mughal Era: Roads and Bridges

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The present article explores the roads and bridges as the modes of travel during 16th and 17th century. During this period roads and related activities were planned and supervised by the Public Work Department. Whenever the emperor started on a journey, the Public Work Department sends hundreds of labours in advance to repair and improve roads. If the journey was uncomfortable due to stones, rocks even paths the officials of the Public Work Department would arrange to clear the obstructions. Anthony Monserrate Portuguese Priest (1578-1582 AD) who visited India at the time of Akbar (1556-1605) was impressed by Akbar's organisation of roads. Akbar had appointed Mohammad Qasim Khan as head known as Diwan-Bautat, of Public Works Department. Agra Fort was built under his supervision. He was made commander of Agra, who conquered Kashmir valley. He was, then appointed Governor of Kabul, where he was killed. Anthony Moneserrate appreciates the efficiency of Mohammad Qasim Khan, who was in charge of road and bridges and efficiently removed any obstruction on the roads levelling them to facilitate movements. Wooden and boats, bridges were constructed for army with elephants, camels, horses, baggyers and artillery to corn safety.

Jungles and hilly regions could considerably impede the journey. So the army was accompanied by thousands of wood and stone cutters to clear, repair and improve the roads. These men were experienced in their work. Murtazo Khan,ⁱⁱ the Governor of Punjab, during his expedition to Agra in 1613, took thousands of pioneers with him to clear the jungle and make the way easier.

Roads and bridge builders were known as Dakhilli from the troops. They were called half troopers. These included carpenters, workers in iron, water-carriers and match-lock bearers. Zamindar had to recruit a number of labourers to maintain roads and to deal with any emergency in the area.

Busy highways and important roads were maintained, but lesser routes and roads were repaired and looked after only before the emperor used them. As the emperors were often on the move and did not always follow well-worn routes were built and connected with existing roads.

The description of the tours of the Mughal emperors in the different part of the country gives a glimpse of road building activity and its technique. Kashmir was a favourite summer resort of the Mughal Emperors. It had many roads, but these were all difficult to travel.

The Punjal route, which took off from Bhimber, was easier to travel. Akbar travelled to Kashmir thrice by this route. On his first visit (April 22, 1589) he sent thousands of cutters, snappers and other labourers make a good road under the supervision of Qasim Khan. When it was ready, Akbar travelled along with his retinue.

Similarly Jahangir (1605-1627) entered the Kashmir Valley through Pir Punjal. Wishing to use Poonch road, Jahangir sent Nuruddin Quili, a mansabdar, to get the road repaired. A large number of artificers, such as stone cutters, carpenters and spadesmen were dispatched with him to whom an elephant was given.ⁱⁱⁱ Nuruddin Quili reported that he had repaired the road, but it was still unsafe due to snow. He requested Jahangir to wait for a month. But the emperor did not wait. He took the Pakli route where the snow was not troublesome.

Shah Jahan (1627-1658) also travelled to Kashmir by Pir Panjal route in the seventh year of his reign and found the route difficult. Aurangzeb (1658-1707) once to Kashmir during his long reign of nearly fifty years. Like Shah Jahan he had also followed the Pir Panjal route.

Roads were fraught with hazards and so imperial travellers had to pay dearly with the lives of their followers and beasts. Mughal engineers and road builders did their best to keep the roads well maintained.

The roads of Eastern India presented another set of problems. These were hazardous and travellers had to face great inconvenience due to heavy monsoon, ravines and rivers. Sebastian F. Manrique (c. 1590 – 1669) was a Portuguese missionary and traveler. He traveled around countries of the East for about sixteen years during 1628–1643. He found his journey from Orissa to Bengal exhausting. He had to cross and recross rivers and streams due to heavy rain. He states,^{iv} “In most cases there were no boats and bridges and we crossed with water up to our knees, our waists or even our breasts and on one day we crossed eleven streams at greater risks, their current being swollen and rapid.”

The Technology in Road Building:

The road building technique of the Mughals is easy to infer. Thousands of labourers, sappers, stone cutters were employed to clear the obstacles on the roads and to make them fit for travels. They knew about explosives, using them effectively in many sieges and campaigns. Though explosives were usually used for military purposes, these were also for clearing the way for road making. Wood cutters cleared tree covered areas for making roads. Snappers and stone cutters cleared stony grounds. Some sort of hammer was also used to level off the surface of the roads.

Another feature of road-building technique during the Mughal was that there was a systematic survey of the area. Records of surveys and land measurement were utilized by the Public Works Department for road making.

During the Mughal Era, roads were immediately repaired when these were damaged by rain. During Aurangzeb campaign to Khelna in December 1701, the rain had damaged the road leading to the fort. The surrounding area was hilly and covered with dense jungles. It was even difficult for a single footman to cross it. Saqi Mustald Khan described,^v “the defiles and pits were deeply sunk. The hills were deeply rooted in the soil.” Fattullah Khan was ordered to overcome these impediments. He was experienced in this project. Under his supervision, snappers accomplished the work in one week. It is stated: Hills were removed, ups and downs and trees cut down. Thus a level road was made, enough for a hundred horsemen to march easily.^{vi}

Aurangzeb had faced a similar difficulty in earlier campaigns. The forts of Parnale and Pawargarh were as inaccessible as that of Khelana. Under the direction of Fattullah Khan, rocks were broken and a path was made into the hill that was wide enough to allow three men to walk easily. Finally snappers demolished a high hill and built roads up to the gates of forts, which were then conquered.

Road-building and construction were carried out during winter or early summer. It was during the monsoon. Unexpected rain could bring enormous problems and difficulties. So most of the campaigns for road making were launched during the dry season. The movement of the imperial army in Malwa an Akbar’s expedition against Abdullah Khan in 1562 was greatly hampered by unseasonable rains. Abul-Fazal was the prominent scholar at the court of Akbar. He wrote a detailed history of Akbar's reign which is known as Akbarnama. He describes the campaign thus: “On account of the lightning, the rain and the floods and vicious mud, and the numerous holes and ditches which characterize the province of Malwa, the march

was difficult. The horses had to swim like hippopotami, and the camels to traverse floods like the ship on the ocean. At last after hundreds of difficulties they came to the village of Ranad and encamped there. On account of the excessive rain they halted there two days. On account of the quantity of mud on this march, the horses sank up to their chests and the very hair of the camels became the burden to them. With a thousand difficulties they moved along.”^{vii} It does not mean that people did not travel at all during the monsoon. In fact, they travelled during all the season. The important change was the number of travelers. Only absolute necessity brought people out of their homes and villages. Caravans were rarely organised during the monsoon. As roads were fit for travel only in the dry season, caravans made their journeys during summer or winter. December was the best month for road journey.

The development of all weathers was not regarded a necessity as during the monsoon, rivers and streams provided an easy means of travel. In the dry season, the road system coped adequately with the demands placed upon it. Agra was considered the biggest town of the world. Since the traffic was scanty in the absence of the emperor, there was no need for the broad roads in all the parts of the country. Wide roads were not thought necessary. Psychologically, the narrow streets produced a stronger sense of community feeling and enabled groups of people from the same profession and cast to live together harmoniously. Delhi’s streets were wide and beautiful and there were arched arcades containing shops on both sides of the streets. Ahmedabad was renamed for its wide streets. Most of the cities and towns had some paved streets and roads. Fortified towns were mostly paved with bricks. Lahore had also well kept streets.

In Bengal during the brief governorship of prince Muhammad Azam (1678-1679), paved roads were introduced. He lived in Dhaka and travel was difficult during the monsoon. To improve travel conditions, he had one of its roads paved the bricks. Gradually the paving of road spread. Tavernier in 1689 found the road of Rajmahal paved with bricks for at least two to four miles. Hamilton^{viii} mentions a paved road and a fort path at carver Cuttak had also five roads.

In almost all parts of India, even in smaller towns and cities ample remains of brick road have been found. M. Vost states, in Fatepur Sikri, road about a mile long leading to the market place were paved flints; Cambay’s streets were straight and flint-paved path.^{ix}

The Mughal Rulers were aware of the fact that some roads in some places were dusty and inadequate. There was also no scarcity of bricks. Stone was also available. Marble and

other stones were transported from long distances to build places, mosques, minarets and mansoleums but no positive steps were taken to pave trunk roads. In spite of the wealth and resources of the Mughals and considering their contribution to art and literature, the absence of metalled or paved trunk road is surprising.

It can be assessed that trunk roads were not paved on account of the mode of travel and conveyance. Horses and bullocks were shod. The wear and tear of their shoes would have been considerable if the roads were paved and metalled. It would have damaged paved and brick built roads. Bullock carts and horses were used for longer journeys and roads outside the town were suited for the animals.

Bridges as Modes of Travel:

Realizing fully the value of bridges to their road-network. The Mughals encouraged their construction and built bridges of various types. The idea of crossing fords, streams or rivers by bridges existed in earlier civilization also. But the Mughals were familiar with boat bridges known as Pontoon bridges.

Bridges were substituting for roads as another mode of travel. Babur used a pontoon bridge to cross the Ganges near Qanuj on February 27, 1528.^x Humayun his son, was credited with many innovations, including a movable bridge of several boats joined together with iron nails. Man, camels and horses were able to cross rivers on such bridges.

Engineers of the Mughal era were skilled in making Pontoon bridges. While returning to Agra from Jaunpur in March 1566, Akbar^{xi} camped on the bank of the Ganges at Manikpur. He ordered his officers to build a bridge on the river with boats. They completed it in four days. The king gave orders that only one type of troops or transport should approach the bridge at a time. The cavalry, the infantry, the camels, other baggage animals, flocks and herds should pass over separately and in a single file. Elephants were not allowed to cross such bridges lest they should sink them by their weight. Boat bridges did not take long time to build. These could be ready from one to four days.

During his stay in Bengal 1624, Shah Jahan ordered Mirza Nathan^{xii} to construct a bridge over the Ganga near the pass of Garhi. The boat bridge was completed in four days. Boats of various sizes and shapes were made under the supervision of Admiralty officers known as Mir Bahri, Bengal, Kashmir and Sindh were popular for their different types of boats. These were used as bridges during campaigns. The department also took the work of the construction of roads sometimes.

On certain occasions boat bridges were not easily built. Sometimes the engineers encountered great difficulties when they had to build bridges on turbulent rivers. Nevertheless boat bridge were favoured for their economy and conveniences.

Permanent Bridges:

At some places, permanent Bridges of boats were also constructed. The Mughals did not neglect the construction of permanent boat bridges. When Shah Jahan shifted his capital from Agra to Delhi, which was on the bank of Jamuna, it was linked by a bridge of boats.

The first permanent stone bridge was near Karnal. During his journey to Kabul, Akbar ordered the building of a bridge on the Indus and rivers in Kabul. Under the supervision of Abul Fazal^{xiii} a stone bridge was built at Sultanpur in Punjab.

The Mughal Emperor Jahangir constructed a bridge on the Baba Hasal Abdal in the fourth year of his reign. Under the supervision of Abdul Hassan, the chief paymaster known as Mir Bakshi, a stone bridge 140 yards wide was built for him to across the river Mahi in Gujrat. It was the largest river after Narbada and Tapti.^{xiv} Jahangir ordered four big elephants to cross it at the same time to test the strength of the bridge. The elephants crossed it comfortably. The bridge at Salimgarh, which was also built during the reign of Jahangir was regarded as a fine piece of architecture, bold in design and with a solid foundation.

There were many bridges in around both Delhi and Agra. Lahore had a beautiful stone bridge. It was built of hewn-stone and supported by fifteen fine arches.^{xv} In Kashmir, there were several bridges of different style and designs. There were two near Nain Sukh across Kunhar and Jahangir ordered the construction of another bridge parallel to it for his foot men and horses to cross. In Srinagar, there were four solid bridges built of stone and wood.

Several bridges on the way from Agra to Patna or Dacca, one bridge near Akbarpur, the other at Chaparghatta, a bridge at Khuramabad, known as Jahanabad, a bridge on the river Sangar near Musanagar and a bridge at Shahsaram, bridges on 99 nullahas between Feni and Chittagarh.^{xvi} It is not easy to locate and describe all the bridges constructed under the Mughal. One thing is clear that bridges were not always got constructed by emperors only. Some were built by governors on their own initiative to serve military and administrative deeds. Others were built by merchants, zamindars from philanthropic motives.

Wooden Bridges:

A large number of wooden bridges were also scattered under the Mughal period.^{xvii} During his journey to Kabul with Akbar, Moneserrate saw a wooden bridge built over the

Sutlej in Machivara-Ludhiana district, and noticed several other across the Beas and the Ravi. In the Valley of Kashmir these were many strong wooden bridges.

Jahangir's comment on the construction of wooden bridges in Kashmir deserve a mention: "The way in which they made bridges in this country is to throw pine trees on the surface of the water and fasten the two ends strongly to rocks and having thrown on to these, thick planks of wood, made them firm into pegs and ropes and these with a little repair last for years."^{xviii}

Rope Bridges:

Rope bridges were used in the mountainous region of the country. They were common in Kashmir. Jahangir describes the construction of a rope bridge during an expedition against the Raja of Kistwar, to the south of Kashmir. It was difficult to cross the river at Bhandarkot as the place was surrounded by hills on the bank of river Maru: "They attach string ropes and fasten one rope end to the top of the hill, and the other on the opposite side of the water. Then they attach two other ropes a gaz higher than these, that foot passengers may place their feet on the planks and taking hold of the upper ropes, may descend from the top of the hill to the bottom and so cross the river. This bridge they called Zampas in the language of the people of the hill country."^{xix}

Since it was not always possible for the government to build bridges wherever these were needed, the residents of the area built these bridges for their use and convenience.

Resting Wall:

The resting walls were another feature of the Mughals. Jahangir saw stretches of resting walls from 2.5 to 3 gaz (yards) in the length on his way to Gujrat. The walls were made for the comfort of the porters. When they were tired, they placed their load on a wall, take a rest, and later take up their loads again without any assistance. This idea fascinated Jahangir and he ordered their erections in all large towns. It also indicates that resting walls existed before Jahangir's initiative and its use was widespread in some areas.

It is obvious that the Mughals were fully aware of the need for good roads. The towns and campaigns of emperors give a good picture of road conditions. The narratives of the travellers also provide details of the conditions of the roads during this period. Their descriptions are valuable as they were closely involved in travel and transport. They provide fairly accurate knowledge of different routes and roads in different parts of the country.

Thus we may conclude that the Mughal administration was concerned with the comfort and convenience of travellers and so built an effective network of communication in the form of roads and bridges.

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