

KALKA - SHIMLA RAILWAY

Introduction:

The Kalka Shimla Railway was built during the British rule in India with an aim to connect by Shimla the summer capital of British Indian rail network. The rail network holds the *Guinness Book of World Records* for its 96 kilometres steepest rise in the altitude with crossover of 800 bridges & 103 tunnels with one tunnel being non-functional. The Kalka Shimla toy train was a Joint initiative of Indian Railways and Himachal Pradesh Tourism to promote the picturesque valleys, pine forest, captivating culture, and significant history, colonial wonders and natural beauty of the hill state.¹

Kalka Shimla Railway, a 96.6 kilometer long a single track working rail link was built in the mid-19th century to provide a service to the highland town of Shimla, it is emblematic of the technical and material efforts to disincorporate mountain populations through the railway. The world's highest multi-arch gallery bridge and the world's longest tunnel (at the time of construction) of the KSR were the testimony of the brilliant engineering skills applied to make this a dream a reality. Then the Shimla region took on considerable political importance as the Indian Colonial government decided to take up summer residence there, because of the healthier climate linked to the altitude. The question of transport to the Himalayan foothills, the Delhi region and the Ganges plain then became crucial. The possibility of rail link was mentioned as early as 1847.²

Popularly known as 'Mountain City of India', Shimla is located at an altitude of 2100 metre above mean sea level. The city extends along the east-west spinal axis extending on either side of the Ridge and several flanking spurs. It was planned and developed by the British on seven hills namely 2257 metre high Elysium Hill, 2070 metre Summer Hill, 2449 metre Jakhu Hill, 2160 metre Pleasant Hill, 2175 metre Prospect Hill, 2135 metre Observatory Hill and 1860 metre Annadale. Majesty of Shimla and its rare British heritage amidst the serene environs can be viewed from commanding sites of Jakhu- the crown of town, Kamna Devi, Tara Devi, Parimahal and Elysium Hill. The insequent, obsequent and subsequent tributaries joining consequent streams through wooded terrain, on

¹Mathur, *Bridges, buildings & black beauties of northern railway*, (Institute of Rail Transport in association with National Rail Museum, 2008), p.1

²Anthony S, Travis, *Planning for Tourism*, (International Tourism, India, 2011),pp. 2-3

one hand and deep gorges on the other, make Shimla more complex and difficult to be understood and interpreted which add to the mystery of this place.

The 96km narrow-gauge Kalka-Shimla Railway, often called the toy train line, was opened in 1903 to connect Shimla, the summer capital of British India, with the northern plains. In the same year carriages were built by the Railway onwards. The first carriages were very simple of 4- wheeled carriages, light and short (17 feet). The development flourished with the construction of the Kalka-Shimla railway line in 1906 which had more than 806 bridges and 103 tunnels. This ancient masterpiece of engineering became popular as the "British Jewel of the Orient". It also was a part of the UNESCO World Heritage Site, Mountain railways of India in 2008.³ In 1910⁴ new carriages were introduced by using steel under – frames and bogies, thereby reducing the number of derailments. In 1911,⁵ petrol-driven Rail Motor Cars were introduced on the line to carry mail. They were made by the Drewery Car Co. Ltd. in London which was equipped with White & Poppe 17 HP engines. Car no. 12 of this type is preserved in the National Rail Museum at New Delhi. The KSR initially had 4 travel classes. Furthermore, extremely luxurious saloon cars could be rented. The second car of this type which was built in 1912 (RA-2) has been conserved and restored.

The carriages were built by the Railway itself and it was replaced by diesel engines from 1952 onwards.⁶ The railway climbs more than 4,000ft through the Himalayan foothills, and is famous for its many bridges, tunnels and panoramic views; it has been managed by the State-owned Northeast Frontier Railway since 1958.⁷ Diesel electric motor cars were introduced from 1932,⁸ with large windows to give panoramic views of magnificent Himalayan mountain scenery. One of these cars (no.8) is known as the "Queen of Shivalik". With this type of car, the total of the journey time was reduced to 4 1/2 hours, which is still as the same of today. Generally speaking, the KSR has always attempted to improve its rolling stock, technical performance and passenger comfort. The locomotives were modified by the German company of Herschel in water and coal capacities, modification of the grate, and modification of the valve gear. Then the modified steam locomotives began to be scrapped in the 1970s, and the last ones remained in service until 1980.

³Vipin, A., *Development for Shimla Planning Area*, (2004). (Government of Himachal Pradesh, Shimla, 2004),p.6

⁴Alfred Dupont Chandler, K., *The Railroads*, (Arno Press, 1981),p.42

⁵*Report of the Shimla Water Works Committee* (1904), Punjab Government, Shimla, p.45

⁶*Journal of the Institution of Engineers Pakistan*, (Volume 5), (the University of Virginia, 1965,)

⁷Pubby, A., *Shimla Then and Now*, (Indus Publishing Company, New Delhi, 1988), p.17

⁸Amartya, S., *Development as Freedom*, (Oxford University Press, Oxford, 1999,)p.45

Origin and Growth of Kalka Shimla Railway:

This beautiful hill station is situated on a transverse hill spur of the Central Himalayas and is also considered as the gateway to Central Himalayas and Greater Himalayas. The mysterious Charm of this paradise beckons those who are eager to explore forbidden lands, and meet the people steadfast protecting their old tradition and culture with a vibrant religion. It is one of the best starting points for jeep Safari Tours and many treks into the Greater Himalayas. During the time of British rule in India, Sir John Lawrence, Viceroy of India, decided to take the trouble of moving the administration twice a year between Calcutta and Shimla over 1,000 miles away and declared Shimla as the Summer Capital of India in the year 1864.⁹

The Kalka- Shimla Toy Railway line (narrow gauge line -2 feet 6 inches), was built to make an easy approach to Shimla, the Summer Capital of India during the British rule. Railway line to Shimla dates back to the Introduction of railways in India (16 April 1853). In the Delhi gazette, a correspondent in November 1847 sketched the route of a railway to Shimla with estimates of the traffic, returns in appropriate style. Shimla was earlier the capital City of Punjab State in 1871 until Punjab was divided and Chandigarh was declared as its capital. Shimla was also the summer the capital of the regional Government of the undivided State Punjab. The offices of Punjab government were also shifted from about five months each year from 1871 to 1873, but from 1876, it became an annual practice though Punjab government continued to move to Shimla from Lahore till the partition of British India into two nations of India and Pakistan.¹⁰ Survey for a railway line to Shimla featured in the administrative reports of the Indian railways year after year. It is interesting to note that the Shimla line was the most surveyed line. The earliest survey was made in 1884 followed by another survey in 1885. Based on these two surveys, project report was submitted in 1887 to the government of British India. Lengthy debates followed and finally an adhesion line was chosen in preference to the rack system.

Prior to construction of the railway to Shimla, connection with the outside world was by the help of horse carts, ox, carts, ponies etc. The road from Kalka to Shimla came to be

⁹James, *The complete book of tractor & trucks*, (Hermes House, 2005),p.38

¹⁰ Kalka Shimla Railway & Kangra railways Magazine – 1970-73

used for, wheeled traffic by the year 1860.¹¹ The Himachal Pradesh Secretariat (Eller lie building) was designed by Lt. Col. H.E.S. Abbott 100 years back. This beautiful building was constructed after dismantling an old building of the same name that housed the Military Department of the Punjab Government till 1886. Based on these two surveys, a project report was submitted in 1887 to the Government of India for an adhesion line, 68 miles in length and with a ruling gradient of 1 in 33. Ambala is a divisional headquarters of the Northern Railway Zone and is an important railway junction. The Delhi- Ambala – Kalka Railway Company, constructed this railway line after a contract was signed between the secretary of state and the company on June 29, 1898. As per the contract, the rail line was to be built without any pecuniary aid or guarantee from the government.¹² The land was, however, provided free of charge to the company. The estimated cost of Rs 86, 78,500, doubled during execution of the project. The line measuring 59.44 miles from Kalka to Shimla was opened for trains on 9th November, 1903 during the Viceroyalty of Lord Curzon. Because of peculiar working conditions of high capital cost was coupled with high maintenance cost of Kalka Shimla railway was allowed to charge higher fare compared to the prevailing fare for other rail lines in the plains. By 1904, a total of Rs. 1, 65, 25,000 was spent and the company was in a serious financial crisis. On representation of the company, the secretary of state decided to purchase the line, the purchase was affected from January 1, 1906, and then Solan district is one of the twelve districts of Himachal Pradesh state in northern India. Solan town the administrative headquarters of the district. It is a recorded history of a holy person named of Bhalkoo, the illiterate genius whose extraordinary engineering acumen played a vital role in the construction of the Kalka-Shimla rail line and has since been recognized.

In the beginning the trains were run with the help of the locomotives (steam engines) and there were only four coaches at that time, but with the passing of time the locomotives are replaced by the diesel engines and there are 6-7 coaches joined to the engines. The first locomotives were arrived from the famous Darjeeling Himalayan Railway in 1901¹³. Later on the locomotives were constructed by the two main British firms namely Sharp Stewart and Company and the Hunslet and the North British Locomotive Company that can be still seen in a yard in kalka railway station. Going back to year 1903,¹⁴ it is an engineering marvel. The narrow gauge line (2 feet 6 inches), measuring 59.44 miles from Kalka to Shimla was opened

¹¹Kanwar, P, *Imperial Simla*, (Oxford University Press, New Delhi, 1990),p.67

¹² Khadija Haq, *Human Development in South Asia*, (Oxford University Press, Karachi, 1996),pp.15-20

¹³Headrick, D.R. *The Tools of Empire*, (Oxford: Oxford University Press, New York, 1998),p.40

¹⁴Chambers. R, *Rural Development*, (Putting the Last First. London, 1983,)p.35

for trains on November 9, 1903 during the Viceroyalty of Lord Curzon. It is one of the longest narrow gauge railway routes still operating in India. On leaving Kalka, 656 meters (2,152 ft) above sea level, the railway enters the foothills and slowly commences its climb to Shimla railway station 2,076 meters (6,811 ft) and it takes 5 hrs of journey to reach Shimla, as the speed of the train remains between 15-20 kms per hrs. From Kalka to Shimla there are 18 railway stations, with crossing facilities and train stops at some of the stations to give way to the trains from the other side. There are 103 tunnels on the way (one is not used: so only 102 in service). The longest tunnel is tunnel No. 33, which is 1143 meters (3,750 feet) long; it was named after the famous Chief Engineer Barog.

Another tunnel was built later on by a newly appointed chief engineer of railways Mr. H.S. Harrington. The same tunnel and a railway station near it were named as Barog. This tunnel is the longest and the straight tunnel on the track. It is situated 900 feet below the main road. Another famous tunnel is tunnel No. 10,750 meters long and is known as “Koti Tunnel”, after the Koti railway station. The line has 864 small and big bridges. Bridge No.493, historically known as the “*Arch Gallery*”, situated between Kandaghat and Kanoh stations, is an arch bridge in three stages, constructed with stone. Sonwara and Dharampur is an arch gallery bridge having 5 tier galleries of multiple spans, constructed with stone masonry and bridging a deep valley.¹⁵ It has 919 curves, the sharpest being 48 degrees (a radius of 37.47 m or 122.93 feet). A couple of deluxe and ordinary trains (4-5 trains) a day, takes passengers from Kalka to Shimla and same number of train bring them back to Kalka every day. Another interesting feature is the Rail Motor Car of 1927 vintage – which was specially used for the travelling of Viceroy (Governor General) from Kalka to Shimla and it had the unique distinction of bringing Mahatma Gandhi in 1945 to Shimla to attend the Shimla Conference for talks with Viceroy Wavell about British plans for leaving India.¹⁶ Another important aspect of this track is its age-old communication system, which is still in vogue. The telephones being used by the stations are block phones and the control phone system, the former establish links between two stations while the later keeps in touch with other important stations. The token system, lanterns, which were used to give various safety and warning signals to the trains during the British regime, are in operation till date.

¹⁵Singh, A.K., *Railway Architectural Heritage of Bikaner*, (Indian Railways, August, 2000), p.98

¹⁶Thapa, S, *The Human Development Index* (Pacific Population Journal, 1992.), pp. 3-14

The route offers a panoramic feast of the picturesque country sides and the foothills of Himalayas (Shivalik ranges). The scenery along the whole route is one of the most magnificent characters of the journey. Throughout its length of approximately 60 miles (96 kms-5 hrs), the line runs in a continuous succession of the valleys and spurs, flanking mountains rising high with its extraordinary feat of engineering skills and popularity. The Shimla hill railways generate a lot of interest in travellers contributed to the speedy development of Shimla.¹⁷ The nearest broad gauge head is at Kalka a four- to- seven-hour journey from Delhi. After that, take the mountain train from Kalka to Shimla. The view is stunning, with the line passing through an amazing 103 tunnels. The fastest way to get to Kalka is to catch the Shatabdi Express, which departs early morning from the New Delhi Railway Station, arriving at Kalka four hours later.

The British officers start coming to Shimla for their summer holidays and for hunting parties. The forest of Shimla was full of hyena, bears, leopards, barking deers, jackals and many beautiful Himalayan pheasants. The delightful and beautiful climatic conditions of Shimla, representing something like European conditions in India and providing a wonderful opportunity to the Britishers for an escape not only from heat but also from the native culture of plains of India. By 1816, that the British government retained a part of the hill on which Shimla now stands after the close of the Gurkha War. The British established a cantonment at Sabathu and raised the First Nasiri Battalion. Capt. Ross, its commandant, constructed for himself a log hut with a thatched roof, which marked the beginning of Shimla. Capt. Charles Pratt Kennedy of Bengal Artillery succeeded Ross in 1821, and built a far more pretentious house, which was the first permanent house of the township. Shortly after his appointment, he was entrusted with the control of local matters in the hills and designated as the Deputy Superintendent of Sikh and Hill Affairs.¹⁸ In 1827, Lord Amherst, the Governor-General of India, spent the summer at Shimla and found the place to his liking. It was under his successor, Lord William Bentinck, that Shimla became the summer headquarters of the government of India.¹⁹

By the 1830s, Shimla had already developed as a major base for the British. However, the journey from the plains to Shimla was cumbersome. The first major achievement in this

¹⁷ Wanhill, S.R. *Tourism Development*, (Environmental and Community issues, Wiley, 1997),p.56

¹⁸ Dutta, D.M., *Indian Railways*, (Frontier North Frontier Railway, Guwahati, 2002),p.66

¹⁹ Sam Miller, *Himachal Pradesh*, (Blue Guides, South Asia, 2012), p.40

direction was the opening of the Grand Hindostan and Tibet Road in 1856. Earlier, the mode of travel to the hills was by jampans (sedan chair fitted with curtains and slung on poles borne by bearers at an even trot) for women, and men usually rode the track via Kasauli, Kakkarhati, Haripur and Syree to Shimla. Then came the 58-mile tract to Shimla passing through Dharampur, Solan, Kairee Ghat, to be followed by the Kalka-Shimla Tonga Service (Horse drive). After the acquirement of land, in 1832 Lord William Bentick, the next Governor General of Bengal from 1828 to 1835 (later the Governor General of India, as the title was created in 1833), visited Shimla. The Ambala Cantonment was established in the year 1843 after the British abandoned its cantonment at Karnal, following the malaria epidemic of 1841-42.²⁰ The mountain railways in the hills emerged as a result of the delayed interest evinced during the British Raj for establishing control over the Himalayas and other mountain ranges of India. It was in 1844 that Sir John Lawrence, the then Viceroy of India, had mooted the idea of a phased colonization of the hills, particularly as military garrisons. The British, in a proposal termed simply as 'Hill Railway', considered establishing geographically and culturally rich, stations across the country. The hill stations chosen for this purpose were Shimla, the then 'summer Capital'.²¹

The idea of a rail link to Shimla had been presented as early as November, 1847²² by a correspondent of the Delhi Gazette- this was six years before the first train whistled through the Indian sub-continent running between Mumbai and Thane. Within two decades of this observation, Shimla had officially become the 'summer capital' of British India and a staggering one fifth of the human race began being ruled for the better part of the year from this tiny town and the tenuous telegraph. The nineteenth century was at an end when work finally began on the line that would carry some of the most powerful people in this part of the world and add to the enduring romance of railway travel.²³

Prior to construction of the railway to Shimla, connection with the outside world was by the help of horse carts, ox carts, ponies etc. The road from Kalka to Shimla came to be used for, wheeled traffic by the year 1860, and then the viceroy, Sir John Lawrence, made the annual migration as official, and Shimla became the summer

²⁰ Sir Roper Lethbridge, *The Golden Book of India*, (Akar Books publication, New Delhi, 1893), p.35

²¹ Dane Keith Kennedy, *The Magic Mountains: Hill Stations and the British Raj*, (University of California press, London,) p. 55

²² Ajanta, *Brief history and guide*, (the University of Michigan, 2009,) p.49

²³ James, *North West frontier province*, (Seema publication, India, 2008), p.89

headquarters of the supreme government in India. On 1861 a rule was made that in the Councils of the Viceroy and the Governors, apart from the British, other people would also be included as members and some of the members would be Indian. Thus, apart from officials, some Indians and British traders, mill owners and plantation owners began to be made members of the Councils and they also started migrating to Shimla.²⁴

While the Sind, Punjab and Delhi Railway Companies constructed lines linking Lahore to Amritsar opened in 1862 and Lahore to Multan (operational in late 1864) and Amritsar to Delhi in 1870, connection from Lahore to Karachi was established in 1878 as the result of the completion of the Indus Valley State Railway. On the other hand, the Punjab Northern State Railway joined Lahore and Peshawar cantonments in 1883. Thus, by 1886 the government owned and operated North Western State Railway (later North Western Railway) was created by amalgamating most of the railways in Punjab and Sind and afterwards workshops were joined with these railways stations and railway lines, changing history of transportation and connectivity of the region. Even places like Ambala were connected to the railway network due to the cantonment.

Another line under the name of “East Indian railway” runs through the Ambala district joined Ambala Cantonment with Chandigarh which was 10 miles from Ambala cantonment. This was built for the military purposes. The Ambala district was connected to the rest of the country through roads as well, in which the Grand Trunk road was the major one. The G.T. road arrived at Ambala cantonment from the Karnal. The British also constructed the Ambala-Kalka road for Shimla and it was connected to the G.T road 4 miles above the Ambala cantonment. This made it easy for the mobilization of people and troops to the summer capital of Shimla for the British.

It was under the Viceroryship of Marquess Dufferin (1884 -1888) the construction of a railway line was actively considered. The historic Delhi-Ambala-Kalka railway line dates back to 1889. Situated 200 km north of Delhi, this town is extremely well connected by the rail and road network²⁵. Ambala is a major railway junction and it has 12 railway platforms and a daily passage of about 250 trains’. It also served as the best resting place for north India's tourist. G.T. Road (NH-1, National Highway 1) passes through Ambala Cantt and Ambala City. The Delhi-Ambala-Kalka line was opened in 1891; shorter layouts and other

²⁴Gazetteer of Shimla Hill State, *Punjab State Gazetteer*, (Vol-VIII), (Indus Publishing Company, New Delhi), pp. 3-21.

²⁵ John Rae, Report *of the Commissioner of Railways*, (Sydney, New South Wales Legislative Assembly, 1873), pp.2-3.

technical solutions were then considered by the rack system. Finally a contract was signed between the government and the Ambala- Kalka Railway, for the construction and operation of an adhesion line with a gauge of 2 feet. After the commencement of Delhi-Ambala-Kalka line, fresh surveys were made in 1892, and 1893 and two alternative proposals were submitted. During 1894,²⁶ four more alternate schemes were suggested-two adhesion lines 67-1/4 and 69-3/4 miles long and two rack lines 46-1/4 miles long each. Fresh surveys were again made in 1895 from Kalka to Solan with a view to locate the line either by 1 in 12 rack system or 1 in 25 adhesion system. Lengthy debates followed and finally an adhesion line was chosen in preference to the rack system. Kalka railway station is located at an altitude of 658 metres (2,159 ft) above mean sea level. It was allotted the railway code of KLK under the jurisdiction of Ambala railway division.

On June 29, 1898, a contract was signed between the Secretary of State and the Delhi-Ambala- Kalka Railway Company, for construction and working of a 2 ft chosen for Kalka to Shimla Railway. As per the contract, the rail line was to be built without any pecuniary aid guarantee from the Government, the land was, however provided free of charge. The military authorities were 2 ft chosen for Kalka to Shimla Railway. They recommended a standard 2 ft 6 in gauge for mountain and light strategic railways. Later it was constructed under Chief Engineer H.S. Harrington's supervision, guided by a local sage, Bhalku, at a cost of 840,000 rupees. The military authorities were skeptic about the narrower gauge of two feet chosen for Kalka-Shimla Railway. They recommended a standard two feet by six inches gauge for mountain and light strategic railways. The government of India yielded to the military requirements and on November 15th, 1901,²⁷ the contract with DUK was revised and two feet by six inches gauge was adopted for Kalka-Shimla Railway. This meant change of gauge for a portion of the line built in the year 1901.²⁸ The first locomotives to arrive were two classes "B" 0-4-0ST from the famous Darjeeling Himalayan Railway. These were built as 2 ft (610 mm) gauge engines, but were converted to 2 ft 6 in (762 mm) gauge. They were followed by 10 engines with a 0-4-2T wheel arrangement of a slightly larger design, introduced in 1902.²⁹ Until 1903 the British either rode or were carried with all their paraphernalia up the steep mountain sides to Shimla. Kalka-Shimla Railway was constructed

²⁶M.S. Kohli, *Mountains of India: Tourism, Adventure and Pilgrimage*, (Indus Publishing, India, 2002),p.54

²⁷*A Monthly Record of Political Events and Current Political Literature*, (vol-14), (Committee of the National Union of Conservative and Constitutional Associations, 1901)p.56

²⁸Ellen Beasley, *The Alleys and Back Buildings of Galveston* (A&S University press, 1923), pp.23-45

²⁹Chatopadhyay, K., *Economic Impact of Tourism Development*, (Kanishka Publisher, New Delhi, 1995),p.88

by Delhi-Ambala-Kalka Railway Company and opened for traffic in 1903. In 1905 the line was re-gauged to 762 mm (2 ft 6 in) wide narrow gauge.

Built by the Hunslet and the North British Locomotive Company, the locomotives were about 35 tons (35.56 tonnes), with 30" (762 mm) drivers and 14"x16" (355.6 mm x 406.4 mm) cylinders. These locomotives, later classed K and K2 by the North Western State Railways, subsequently handled the bulk of the railways traffic during the steam era. A pair of Kitson Meyer 2-6-2+2-6-2 articulated locomotives, classed TD, were supplied in 1928. They quickly fell into disfavour, as it often took all day for enough freight to be assembled to justify operating a goods train hauled by one of these locomotives. Shippers looking for a faster service started to turn to road transport. These 68 ton (69.09 tonnes) locomotives were soon transferred to the Kangra Valley Railway, and subsequently ended up converted to 1,000 mm (3 ft 3 ³/₈ in) Metre gauge in Pakistan. This was followed in the 1930's by the East Indian Railway on its Premier train, the Delhi-Kalka Mail and later on its Calcutta-Bombay Mail.³⁰ These were the last word in railway luxury at that time. Though it was the preferred mode of travel for senior civil servants, top men in commerce and industry and the army top brass, it was available to anyone who could afford the fare, regardless of nationality or caste, and this was true for all 'Upper Class' accommodation on all the trains.

One of the most interesting features of the Kalka-Shimla route is the absence of girder bridges. There is only one 60-foot plate girder span in a pinewood near Dharampur and a steel trestle viaduct, which replaced a stone gallery in 1935.³¹ Multi-arched galleries like Roman aqueducts being the commonest means of carrying the line over the ravines between hill spurs. There is only 60ft. plate girder span in a pine wood near the old engine' bungalow Dharampur, and steel trestle viaduct which replaced a stone gallery 869 bridges representing about 3% of the line. Multi-arched galleries like ancient Roman aqueducts have been used to take the tracks over the difficult terrain, which would otherwise have been difficult to cover. These stone masonry arched bridges, which use lime stone, an arch and each arch having a different configuration.

During 1944,³² due to heavy snowfall of about 12ft., the existing platform shelter was collapsed and consequently the shed over the station building and platform was constructed under the supervision of late Mr. M. W. Baldwin, the then KLK-SML section. On first floor,

³⁰Magadi., *Himachal Pradesh*, (Volume 2), (Light & Life Publishers, India,1979),p.32

³¹Rao, M.A, *Indian Railways*, (Volume 28), (Ministry of Railway Board, India,1983),p.99

³²*The Wealth of India* (Council of Scientific and Industrial Research, 1952, India),p.211

electric & station superintendent office, Pay office and two rest rooms were constructed. In 1946 leaders of the Indian nationalist movement came to Shimla for a crucial conference that paved the way to Independence. Shimla's legacy of British control has left in somewhat of Aesthetic anomaly: an Indian town, a state capital, no less that looks and feels like a village in Northern England. Himachal Pradesh came into existence as a "Chief Commissioner province" of the Indian union on 15 April, 1948 as a result of merging 30 princely states of Punjab and Shimla Hills. Even after that a portion of it remained the capital of Punjab province (which remained in India after the partition), until the new city of Chandigarh was made (1953).³³

By 1951, the main objectives of railways planning have been to develop the transport infrastructure to carry the projected quantum of traffic and meet the developmental needs of the economy. Indian Railways have implemented nine five-year plans, apart from annual plans in some years. During the plans, emphasis was laid on a comprehensive program of system modernization, becoming one of the largest networks in the world. By 1955, the first diesel locomotives on the Kalka-Shimla Railway, class ZDM-1 by Arnold Jung Locomotive (articulated with two prime movers) were installed and class ZDM-2 built by Maschinenbau Kiel (MaK) was introduced in 1960.³⁴ These locomotives were later transferred to other lines.

Ambala division is headed by Divisional Railway Manager (DRM). This Division is the newest member of the Northern Railway family. It was created on July 1, 1987 by transferring 639 kms from the Delhi Division and 348 kms from the Ferozpur Division. Ambala became fully operational with effect from August 15, 1988.³⁵ 62% of the Division is in Punjab while the remaining portion serves Haryana, Himachal Pradesh, Uttar Pradesh, Rajasthan and the Union territory of Chandigarh. The division has 141 stations and includes the famous and picturesque Kalka-Shimla narrow-gauge section. Besides carrying prestigious passenger trains connecting Punjab with the rest of the country, the Division is an important freight handling center. The electrification of the Ambala-Chandigarh sector was completed in 1998-99.³⁶ In 2010,³⁷ with a motive to give tourists another exciting way to reach the

³³ Prakesh, *Chandigarh's Le Corbusier*, (Mapin Publishing Pvt. Limited, India, 2002)p.34

³⁴ Dane Keith, *The Magic Mountains: Hill Stations and the British Raj*, (University of California Press, London, 1996),p.46

³⁵ Mishra, *Himachal Region in India*, (Indus publication, India, 1994)p.78

³⁶ Michael, *'The progress of transport history'*, (Journal of Transport History, 1991))pp. 74-87.

³⁷ Jenkin, C.L., *Environmental Constractions in Tourism Development*, (Print House, Jodhpur, 1992), p.44

Queen of Hills, Railway Department has proposed to introduce two new Summer Special Trains on Kalka-Shimla route. The decision to run two special trains has been taken keeping in mind the growing number of tourists that trip to Shimla during summers.

Various Stations in Kalka Shimla Railway:

Kalka railway station is the northern terminus of the Delhi- Kalka -line and the starting point of UNESCO World Heritage Site Kalka Shimla Railway is located in the Indian State of Haryana. The route winds from the Himalayan Sivalik foothills at Kalka to several important points such as Dharampur, Solan, Kandaghat, Taradevi, Barog, Salogra, Totu (Jutogh), Summerhill and Shimla at an altitude of 2,076 meters (6,811 ft).

Kalka:

The Kalka–Shimla Railway was built in 1898. It is in 6 km at 1:42 the railway climbs steadily through the expanding town in a series of tight “*loops*” after crossing the JajraNadi. At the time of construction 107 tunnels and 864 bridges, were built throughout the course of the track. The Chief Engineer of the project was H.S. Herlington.

Taksal:

Taksal is in 5 km at 1:36 the railway enters a valley and climbs up to Gumman in a series of “*Reverse*” “*loops*” the second of which includes a short tunnel.

Gumman:

Gumman is in 6 km at 1:30 the line clings to the side of the valley with glimpses of the road and motorway.

Koti:

Koti station is the second longest tunnel on the route which is 694 m long. Little difficult to see the purpose of this tunnel as it merely cuts off a shoulder of the mountain. Little by little, the road rises to meet the railway and 2 km short of Sonwara, at Jabli there is a level crossing – the only one on the route.³⁸

Sonwara:

³⁸Brandon, K., "*Planning for People and Parks: Design Dilemmas*," (World Development, Vol. 20, No. 4, April, 1992),p.20

Sonwara is in 6 km at 1:46, After Sonwara the line enters a delightful double switchback to claw up some height and finally, after tunnelling through the ridge, reaches the road – and the Continental Divide – at Dharampur station.

Dharampur:

Dharampur is in 6 km at 1:55 Between Dharampur and Solan, a fault line runs from NW to SE across the route of the railway. The watershed along this valley is at Kumarhatti and lies at an altitude of 1580 m. To get there, the railway contours round the northern slope of the mountain and then sidles across the valley almost without you noticing that you have actually just crossed a vital bridge which connects the Sivalik hills or Sub-Himalayan ranges to the Mahabharata ranges of the Himalaya.³⁹

Kumarhatti:

Kumarhatti is in 4 km at -1:80 having crossed the valley, the railway now faces a long ridge 300 m high blocking its route. The main road has to go right round the end adding an extra 8 km but the railway engineers chose to burrow through the ridge using a 1144 m long tunnel which emerges at Barog station – the prettiest station on the route and the usual stop for a comfort break of 10 minutes.

Barog:

Barog is in 4 km level the town of Solan is situated on a broad saddle on the Continental Divide overlooked by the 2000 m summit of Mount Karol. It is an ideal place for a town with plenty of space for housing and industry but it was not high enough for the British who wanted cool air and huge vistas.⁴⁰

Solan:

The first task of the railway is to contour round the base of Mt Karol.⁴¹ Salogra (1500) to Kandaghat (1420) – 7 km at -1:88 the choice of contour is determined by the next saddle to which the railway is aiming which is 80 m lower than Solan.

Salogra:

Salogra is in 7 km at -1:88 the choice of contour is determined by the next saddle to which the railway is aiming which is 80 m lower than Solan.

Kandaghat:

Kandaghat is 5 km at 1:28 here the road and the railway choose different sides of the mountain on their way up to the next saddle at Kathlighat. The latter chooses the east side in

³⁹Chakraborty, P., *Adventure Tourism in the Himalaya*, Yojana, (Vol. 40, No. 8,) 1996.

⁴⁰Kaur, J., *"Thrills of Trekking"*, (Tourism Recreation Research, Vol. V. No. 2., 1980)

⁴¹Kaur, J., *Himalayan Pilgrimage and the New Tourism*, (Himalayan Books, New Delhi, 1985),p.34

order to make use of some deep valleys which enable it to lengthen the route and lessen the gradient but this is still one of the steepest sections of the line. Fine multi-arched bridges crown the heads of these valleys, the most impressive of which is bridge 541 just before Kanoh station.

Kanoh:

Kanoh Railway passes through the line of Kanoh to Kathlighat by 8 km at 1:80 Road, rail and watershed all meet again at Kathlighat. (A 'ghat' is a ridge or mountain pass.)

Kathlighat :

Kathlighat is 5 km at 1:38, the road and the railway jostle for position along the narrow ridge but since there is climbing to be done, the railway first take a wide detour round a spur to the west; then crosses the ridge to the other side at Shalaghat.

Shogi:

Shogi is in 8 km level for a while the railway runs right along the crest of the ridge aiming straight for the peak on which the temple of Tara Devi stands. To the left you can clearly see the runway of the airport at Jubbarhatti. On reaching the end of the ridge, the road veers left and the railway right.⁴² As the railway rounds the base of the mountain, magnificent views of Shimla present themselves.⁴³ The third longest tunnel on the route (493 m long) brings us back to the west side of the ridge and into Tara Devi station.⁴⁴ (The altitude given on the station name board is the height of the temple, not the height of the station.)

Tara Devi:

Tara Devi is 5 km at 1:62 faced with the 2100 m peak of Kamna Devi right ahead, it is the turn of the road to go right and the railway left. Jutogh (1920) to Summer Hill (2040) – 3 km at 1:25 as the train rounds the bend, the Vice regal Lodge comes into view and a bit of steep climbing brings us into the penultimate station. *Summer Hill* (2040) to Shimla (2075) – 3 km at 1:86 the line skirts round observatory hill before diving into the last tunnel (which at 383 m long is the fourth longest) to emerge on the south side of the ridge into Shimla station.⁴⁵

⁴²Mehta, S.P., *Discovery India Over Northern Railway*, (Indian Railway, November, India, 1999),p.45

⁴³Morison, A.M., *The Tourism System*, (PHI, New Jersey, 1985), p.23

⁴⁴Tyagi, N., "*Hill Resorts of Uttar Pradesh Himalayas*, (publication: Indus Publishing Company, New Delhi, 1991),p.88

⁴⁵Wahab, S., *Tourism Management*, (Tourism International Press, London, 1975),p.65

Shimla Station:

As we have seen, Shimla sits on a sunny, south-facing ridge on the Continental Divide at an altitude of 2200 m. The gradient of the route up from Kalka, which is essentially shared by both the road and the railway, is never that steep and long before the British came, the road was part of a much longer trade route, the Hindustan-Tibet road which continues beyond Shimla through Fagu and Theog to Narkanda at 2700 m where it descends off the Continental Divide into the valley of the Sutlej river at a height of 800 m. It then follows the river deep into the high Himalayas to a height of 2700 m at the foot of the Shipki La pass whose summit at the Tibetan border lies at 3900 m. This border is, of course, closed as much of the Indo-chinese border territory is in dispute. In short, Shimla is the first place on the well-trodden Tibetan trade route which reaches the magic 2000 m mark. Solan is not high enough and there seemed little reason to go any further to, for example, Theog which was already a thriving market town surrounded by heavily cultivated orchards and terraces. In Shimla, the British found enough flat land on the top of the ridge, cool breezes from all directions and shady pine forests in which to wander and have their picnics.⁴⁶

⁴⁶Basu, A.R., *Natural Heritage of India*, (Environment Management, Publishers and Distributors, Delhi, 1989), p.76

Kalka - Shimla Railway Station

Stations	KM
Kalka	96 km
Taksal	5 Km
Gumman	5 km
Koti	6 km
Sonwara	10 km
Dharampur	6 km
Kumarhatti	1580 m
Barog	4 km
Solan	6 km
Salogra	7 km
kandaghat	5 km
KanoH	8 km
Kathlight	5 km
Shogi	8 km
Tara Devi	5 km
Jutogh	3 km
Shimla	3 km

Sources From: The Tourism System of kalka Shimla Railway Book⁴⁷

Special Features of Kalka Shimla Railway:

Locomotives:

In the olden days the tiny locomotive may have exhausted all its water, therefore a water pipe is available at this midway point and the station is conveniently named as “water pipe”. The name continues through the diesel locos now no more get exhausted and the water

⁴⁷ Morison, A.M., *Op.Cit.*, p.65

pipe has lost its importance, instead a tea staff on the platform serves the passengers on this mid-way point.⁴⁸

The first locomotives to arrive were two classes "B" 0-4-0ST from the famous Darjeeling Himalayan Railway. These were built as 2 ft. (610 mm) gauge engines, but were converted to 2 ft. 6 in (762 mm) gauge in 1901.⁴⁹ They were not large enough for the job, and were sold in 1908. They were followed by 10 engines with a 0-4-2T wheel arrangement of a slightly larger design, introduced in 1902. These locomotives weighed 21.5 tons 21.85 tonnes each, and had 30" (762 mm) driving wheels, and 12"x16" (304.8 mm x 406.4 mm) cylinders. They were later classified into the "B" class by the North Western State Railways. All these locomotives were constructed by the British firm of Sharp, Stewart and Company.

Larger locomotives were introduced in the form of a 2-6-2T, of which 30 were built with slight variations between 1904 and 1910.⁵⁰ Built by the Hunslet and the North British Locomotive Company, these locomotives were about 35 tons (35.56 tonnes), with 30" (762 mm) drivers and 14"x16" (355.6 mm x 406.4 mm) cylinders. These locomotives, later classed K and K2 by the North Western State Railways, subsequently handled the bulk of the railways traffic during the steam era. A pair of Kitson – Meyer 2-6-2+2-6-2 articulated locomotives, classed TD, were supplied in 1928. They quickly fell into disfavour, as it often took all day for enough freight to be assembled to justify operating a goods train hauled by one of these locomotives. Shippers looking for a faster service started to turn to road transport. Steam operation of regular trains ended 1971.⁵¹(As seen in the picture in left)

Diesel locomotives:

The first diesel locomotives on the Kalka–Shimla Railway, class ZDM-1 by Arnold Jung Locomotive articulated with two prime movers, started operation in 1955.⁵² In the 1960s, class ZDM-2 built by Maschinebau Kiel (MaK) was introduced. These locomotives were later transferred to other lines. In this line is operated with class ZDM-3 diesel-hydraulic locomotives (522 kW, 50 km/h), built 1970 to 1982 by Chittaranjan Locomotive Works with a single cab road switcher body. Six locomotives of the same class were built in 2008/2009

⁴⁸ T.A.F.Stone, *Steam versus electric locomotives for heavy grades*, (Superintendent government printing, 1921),p.33

⁴⁹ Jonathan Clay, *Locomotive Portraits*, (Superintendent government printing, 2015,)p.165

⁵⁰ Shukla, J.P., *Kalka-Shimla Heritage Hill Railways*, (Indian Railways, August, 2000)p.39

⁵¹ Wanhill, S.R., *Tourism Development*, (Environmental and Community Issues, Wiley, 1997)p.67

⁵² Lawrence Saunders, *The Railway Engineer*,(Volume 53), 1932)

by Central Railway Loco Workshop Parel with updated components and a dual cab body providing better visibility of the track.⁵³

Engine:

Kalka Shimla Railway is famous for its rail-motor-cars. The earliest 'Automobiles' or 'Rail Motor Cars' on Kalka Shimla Railway bore a marked resemblance to the char-abanc. They were petrol driven and had white & poppe engines, supplied by Drewry Car co. Ltd. of London. The rail cars are now fitted with a transparent fibreglass roof, thus affording a beautiful view to the travellers. Kalka Shimla Toy Train has about 07 coaches that can accommodate around 200 passengers in a single trip. The 700 horsepower B-B type diesel engines run energetically meeting the challenge of hazardous and adverse weather conditions temperatures were ranging from 0 to 45°C, heavy snowfall -average recording 2 feet during winters, and the annual rainfall of 200-250 cm, perceived by the valley. The train acquires up a moderate average speed of 25-30 km throughout its journey enabling its travelers to soak in the beauty of the picturesque valley.⁵⁴

Tunnels, Curves and Bridges:

Kalka and Shimla are located just north of Chandigarh, in India's mountainous northern state of Himachal Pradesh. The captivating train route connects both places. It runs for 96 kilometers (60 miles) though 20 railway stations, 103 tunnels, 800 bridges, and an incredible 900 curves. The longest tunnel, which stretches for more than a kilometer, is near the main railway station at Barog.⁵⁵ The most spectacular scenery occurs from Barog to Shimla. The train's speed is greatly restricted by the steep gradient that it has to climb, but this allows for plenty of fascinating sightseeing along the way. The most architectural complex bridge is bridge number 226 which spans a deep valley that is enclosed on two sides by steep peaks. This bridge was constructed in five stages with each level having its own stone arched tier. The bridge is an elegant piece of architecture but is difficult to see from the train carriages. The original cost for the railway was Rs 8,678,500 and the first public train service along the route was in 1903. The high maintenance and running costs were crippling to the company who had originally constructed the railway and the entire rail network had to be nationalised

⁵³ Krishan, K., *Tourism Theory Planning and Practice*, (Indus Publications, New Delhi, 1997)p.48

⁵⁴ Mill R.C., *Tourism*, (The International Business Prentic Hall, 1990,) p.40

⁵⁵ Harish Chandra Rai ,*The Simla story*, (O.C. Sud, 1992, India), p.209

in 1906 managed by the British/India government. The government bought the entire rail route for Rs17, 107,748 in 1906. Since 1906 the railway has owned by the state.

Special Carriages:

In addition to the normal train services, there two heritage carriages that run on the Shimla-Kalka route as part of the newly introduced Special Heritage Train. The Shivalik Palace Tourist Coach was built in 1966, while the Shivalik Queen Tourist Coach dates back to 1974. Both carriages were recently refurbished to become part of the new train service, which aims to recreate the bygone era for passengers.

Train Services:

There are three main tourist train services that run on the Kalka Shimla railway. These are: Shivalik Deluxe Express, Himalayan Queen, Rail Motor Car.

Shivalik Deluxe Express:

Shivalik Deluxe Express is a premium express train with carpet, wide glass windows that open, cushioned seats, and relaxing music. It fits 120 passengers. Food is provided. There are no stops along the way.

Himalayan Queen:

Himalayan Queen is a standard train service. Food isn't provided but can be purchased at the 10 or so stations that it stops at along the way. Owing to the number of stops, this train is the most suitable for those who like to get out and explore.

Shivalik Express Time Table from KSR

Train No	Train Name	Departure	Arrival
I ks Passenger	Kalka Shimla Railway	04.00 AM	09.20 AM
241 NG superfast	Shivalik Deluxe Express	05.30 AM	10.15 AM
251 Mail	Kalka Shimla Mail	06.00 AM	11.00 AM
255 Express	Himalayan Queen Express	12.10 PM	05.20 PM
253 Hoilday	Holiday Special	06.30 AM	11.55 AM
101 Rail Motor Car	Rail Motor car	11.35 AM	03.40 PM
257 Hoilday	Holiday Special	12.45 PM	06.30 PM

Rail Motor Car:

Rail Motor is uniquely resembles a bus from the time of the Second World War.⁵⁶ It's got a transparent roof, and fits only 14 passengers. It's also an express service, with food provided. There is one stop, at Barog.

Tunnels in Station and Multi Arch in track:

Tunnels in Station:

Kalka Shimla Railway, one of the very few heritage Railways in the world offers special trains and coaches besides the regular train service between Kalka & Shimla. The Kalka Shimla Railway line is one of the most popular hill railways in India. The trains running on these tracks are popularly called 'Toy Trains'. A journey on this railway is a

⁵⁶ David Lowe, P. *Intermodal Freight Transport*, (Linacre House Publication, India, 2005), p.40

unique experience as one passes through the breath-taking landscape of the majestic Himalayas, through tunnels and over bridges; amid the lush green valley's embellished with pine and oak trees. The traveler is left with a long lasting memory of rhapsody and triumph. The Kalka Shimla railway line was inaugurated by the British Viceroy, Lord Curzon in November 1903, covering the distance of 96 km from Kalka through the curving tracks, up to Shimla hills- the summer capital of colonial India. The toy train passes through 102 tunnels (originally 103), 969 bridges, 919 curves and 20 railway stations in its entire journey. The Guinness Book on 'Rail Facts and Feats' included Kalka-Shimla Railway as the greatest narrow gauge engineering achievement in India.⁵⁷

A total of 107 tunnels were built but in 1930 they were numbered again as some of the tunnels were not in use and the total number came down to 103. By 2006, it tunnel has 46 at Solan brewery was demolished and today only 102 are active. There are 889 bridges and 919 total turns. The rise in altitude is from 656 meters above sea level at Kalka to 2076 meters at Shimla. All this shows that this line is an amazing achievement of engineering when you consider the fact that it was built 150 years ago. The track has been active for all these years and proves that when the British build something they build it to last. An interesting feature about these tunnels is that till today, whenever these tunnels have to be illuminated for maintenance, plain mirrors are used to catch the sunlight and reflect this light inside the tunnel.

Dagshai and Solan: (270 meters (890 ft) below the road)

Dagshai is one of the oldest cantonment towns in the Solan district of Himachal Pradesh, India. It is situated on top of a 5689 feet (1734 mtr) high hillock that stands sphinx-like astride the Kalka Shimla Railway Highway at a point about 11 km from Solan. It was founded in 1847 by the East India Company by securing free of cost five villages from Maharaja of Patiala aka Bhupinder Singh.

It is named after the engineer who had commenced digging the tunnel from both sides of the mountain but could not complete it and hence committed suicide (he was buried near the site of the tunnel). His Indian counterpart, known by the name Bhalku, who helped H. S. Harrington to build another tunnel about 1 kilometres (0.62 mi) away from the abandoned

⁵⁷Ashuorth, G.J., *Recreation and Tourism Man and Environment*, (Bell and Hyman Publisher, London, 1985), p.102

tunnel, was honoured with a medal and turban as an appreciation for his contribution to building tunnels, by the then Viceroy of India.⁵⁸

Koti Tunnel: (No.10)

Koti Tunnel, 2276 feet long was built at a cost of Rs. 3.83 lakhs, work commenced in May 1900 and was completed in October 1903.⁵⁹ The tunnel passes through clay and shale. In 1947-48, a 160 feet long arch was rebuilt, without affecting the normal train working.

Colonel Barog and Tunnel (No.33)

This story is about a British Colonel and the longest tunnel on this railway line. Colonel Barog was a Railway Engineer and he was assigned with the building of this tunnel. He decided to dig from both sides of the mountain in order to decrease the amount of time spent on building it. But his calculations were wrong and the two sides failed to meet each other in the middle.

Barog Tunnels, 3752 feet long, is the longest tunnel on kalka Shimla Railway. For a long time, it remained the second longest tunnel of Indian Railways. Its construction was started in July 1900, and completed in September 1903, at a cost of Rs. 8.40 lakhs. The government fined him Rs 1 as a humiliating punishment. Colonel Barog couldn't take it and committed suicide near the tunnel. Some say he shot his dog before he shot himself near his failed tunnel. Later the tunnel was completed by Chief Engineer H.S. Harrington with the help of local ascetic Bhalku. This tunnel is today's Barog tunnel even though it is completely different from the failed tunnel of Colonel Barog. Bhalku also helped to build several other tunnels on the line and was awarded a medal and turban from the British Viceroy. The Barog tunnel is 1143 meters long and it takes 2.5 minutes for the train to cross through.⁶⁰ In recent years the abandoned tunnel has attracted much attention and has been widely regarded one of the most haunted sites in India. Ironically all this haunting activity has made the tunnel (and Colonel Barog) far more famous than it ever could have been otherwise.

The Ghost of Tunnel (No.103)

Shimla has a lot of ghost stories associated with it. There's one about tunnel number 103 on the Shimla-Kalka railway line that has the ghost of a British sahib. The ghost in tunnel 103 is said to be one that talks back in full context with the humans he comes in contact with.

⁵⁸ Clark, *Getting People Involved* (International development, 1978), pp. 28-31

⁵⁹ Abram, *David, Rough guide to India*, (Rough Guides, 2003,),p. 479

⁶⁰ Jagmeet, *"Man behind Barog tunnel lies forgotten"*, (Tribune published October 2009) p.35.

This tunnel 1135 feet long, was built at accost of Rs. 1.96 lakhs; work commenced in February 1902 and was completed in September 1903. In 1949, a cracked portion of the tunnel, 65 feet long, was rebuilt at a cost of Rs. 24,000.⁶¹ (As seen in the picture in left)

Tara Devi Tunnel (No.91)

This tunnel was being built under the residence of a powerful goddess and the workers were scared of working there as they didn't want to face the goddess' wrath. Work had to be stopped for a little while when a breathing pipe was mistaken for a large snake sent by the goddess herself. This tunnel is the second longest tunnel on the track at 992 meters. Today the track continues to be an object of pride for all Himachal and one of fascination for the tourists. There is another tunnel of 992-metre-long called Tara Devi (no. 91) tunnel that was built at a cost of Rs.3.04 lakhs by British East India Company. Since a shrine of Tara Devi Tunnel stood on top of the Tara Devi mountain.

Taksal Tunnel (No.13):

The railway enters a valley and climbs up to Gumman in a series of reverse loops the second of which includes a short tunnel.⁶² The gradient here is very steep, and in order to achieve the flatter gradients required by the Railways, the line develops into three loops at Taksal, Gumman and Dharampur.

Multi Arch in track:

One of the most interesting features of the Kalka-Shimla route is the absence of girder bridges. An interesting feature of the Kalka-Shimla Railway is the almost complete absence of Girder bridges. Multi arched galleries like ancient roman aqueducts being the commonest means of carrying the line over the ravines between the hills spur. There is only one 60 feet plate girder span in a Pinewood near the old engineer's bungalow at Dharampur and a steel trestle via duct, which replaced a stone gallery in 1935 in the 869 bridges representing about 3 percent of the line.⁶³ (As seen in the picture in left)

⁶¹ Pamela Kanwar, *Imperial Shimla*, (2nd edition, Oxford University Press, New Delhi, 2003).p.77

⁶²Jain, K. *Transport Economics*, (Allahabad, 1979), p. 15

⁶³ Balachandran, *India and the World Economy* (1850-1950), (publication: Oxford University Press, 2003, New Delhi), p. 80

Dharampur in Track:

It is a steel trestle viaduct, which replaced a stone gallery in 1935. The remaining 866 bridges, representing three per cent of the line, carry the rail track over the ravines and between the hill spurs. Multi-arched galleries like ancient Roman aqueducts have been used to take the tracks over the difficult terrain, which would otherwise have been difficult to cover. These stone masonry arched⁶⁴ bridges, which use lime stone, have as many as four storeys, each story having an arch and each arch having a different configuration. Bridge No. 493, historically known as the "Arch Gallery", situated.⁶⁵

Kandaghat and Kanoh Track:

It is an arch bridge in three stages, constructed with stone masonry that stands good even today. Bridge No. 226; between Sonwara and Dharampur is an arch gallery bridge having 5 tier galleries of multiple spans, constructed with stone masonry and bridging a deep valley surrounded by high peaks.

Diagram Tunnels in Station and Multi Arch in Track and Bridges

Train Gauge – Narrow (762mm)	Longest Tunnel – Barog (1.1 Km)
Track Length – Over 96 Km	Maximum Height – above 2000 m above sea level
Project Launched in – 1901	Curves – 900 (70% track is in curves)
Project Completed in – 1903	Train – After 1965, hauled by Diesel Engine
Train Service Commenced – November 9, 1903	Maximum Number of Coaches – Seven
Bridges – Over 800	Services – seven coach train and rail car

Sources from : *Transport Economics*, Book⁶⁶

⁶⁴ Vaidyanathan, V. *150 Glorious Years of Indian Railways*, (English Edition Publishers and Distributors, Mumbai, 2003), p. 108

⁶⁵ S.P. Verma, *Infrastructure in India's Development*, (Publishers and Distributors, New Delhi, 2004), p. 2

⁶⁶ Jain, K., *Op. cit.*, p.45

Kalka Shimla Railway as a World Heritage Site:

The Kalka Shimla Railway represents an exceptional technical achievement in the development of the Himalayan Mountains because of its length, its altitude and the difficulty of the terrain through which it runs in difficult tropical climatic conditions. The Kalka Shimla Railway was designed under British colonial rule, as Shimla was the government's summer capital. Furthermore, the Indian population quickly made use of the railway to settle in the mountains and set up enduring human communities. The effectiveness of rail transport, which considerably reduced the duration and difficulty of travel, was an essential factor in this social and cultural development.⁶⁷ The Kalka Shimla Railway has seen its traction regularly upgraded, in a spirit of use in keeping with its origins, while its infrastructures have been maintained in very good condition, by on-going maintenance and repair work, which has been both exemplary and in line with the railway's authenticity. The Historic, approximate 113 years old KLK-SML (Kalka- Shimla) Railway line which was opened for public traffic on 9th Nov.1903, became UNESCO Declared world Heritage Railway line, when it was conferred Heritage status on 10th July 2008 & listed under "Mountain Railways of India".⁶⁸

Criterion (ii): The Kalka Shimla Railway exhibits an important cultural and technology transfer in the colonial setting of the period of its construction, particularly with regard to the eminently political function of the terminus station, Shimla. The railway then enabled significant and enduring human settlement, of which it has remained the main vector up to the present day.

Criterion (IV): The Kalka Shimla Railway is an outstanding example, like the other two Indian railways already inscribed on the World Heritage List, of how access has been provided to the plains and plateaux of the Indian mountains. It is emblematic of the technical and material efforts of human societies of this period to disenclave mountain populations through the railway. It is a well-maintained living line. It is used in a spirit and for purposes that are the same as those at its inception.

⁶⁷ Brandon, K, *Planning for people*, (World Development, vol.(20), No.4, April, 1992.

⁶⁸ Kerr, L. *Colonial Railways and Colonial Cities*, (development and operation of railways in India, 1850), p.67

The century-old Kalka-Shimla rail line, a 96-km-long narrow gauge railroad built to ferry Europeans to and from this hill town - then the summer capital of British India, has been chosen by the UN Educational, Scientific and Cultural Organization (UNESCO) as a world heritage site. After a survey, the 30-inch gauge rail line was constructed in 30 years by a private company under the supervision of chief engineer H.S. Harington at a cost of Rs.16 million. “The Guinness Book of Rail facts & feats” records Kalka Shimla Railways as the greatest narrow gauge engineering in India. It is indeed true, construction of 103 tunnels (102 Existing) aggregating five miles and over 800 bridge in three years, that too in rough and hostile terrain was not an easy task.

In 2007, the government of Himachal Pradesh declared the railway a heritage property. For about a week starting on 11 September 2007, an expert team from UNESCO visited the railway to review and inspect it for possible selection as a World Heritage Site. On 8 July 2008,⁶⁹ the Kalka–Shimla Railway became part of the World Heritage Site Mountain Railways of India. The Kalka Shimla Railway is a 96-km long, single track working rail link built in the mid-19th century, connecting Kalka in the foothills, to Shimla. Originally 107 tunnels were built on Kalka Shimla Railway Track and 102 remain in use. The longest tunnel is at Barog became part of the World Heritage Site ‘Mountain Railways of India’. The management is guaranteed by the Ministry and the relevant branch offices have property Management Plan, which deals with the land, the buildings, the track, the bridges, and the tunnels.

Social, Economic and Political Impacts of Kalka Shimla Railway:

Shimla was earlier the capital City of Punjab State in 1871 until Punjab was divided and Chandigarh was declared as its capital. Shimla was also the summer the capital of the regional Government of the undivided State Punjab. The offices of Punjab government were also shifted from about five months each year from 1871 to 1873, but from 1876, it became an annual practice though Punjab government continued to move to Shimla from Lahore till the partition of British India into two nations of India and Pakistan.

The Shimla hill railways generate a lot of interest in travellers contributed to the speedy development of Shimla.⁷⁰ The British officers start coming to Shimla for their summer

⁶⁹ Agarwal, S.B, *Attracting Private Sector Funds for Indian Railways*, (Rail Transport Journal, 1999),p.67

⁷⁰ Wanhill, S.R. *Tourism Development*, (Environmental and Community issues, Wiley, 1997),p.56

holidays and for hunting parties. The forest of Shimla was full of hyena, bears, leopards, barking deers, jackals and many beautiful Himalayan pheasants. The delightful and beautiful climatic conditions of Shimla, representing something like European conditions in India and providing a wonderful opportunity to the Britishers for an escape not only from heat but also from the native culture of plains of India.

Solan District, one of the twelve districts of Himachal Pradesh, came into existence on September 1, 1972 when old Shimla and Mahasu districts were reorganized to Solan, Arki, Nalagarh and Kandaghat Sub-division. They were district administrative head Quarters. The KSR initially had 4 travel classes. Furthermore, extremely luxurious saloon cars could be rented. The second car of this type which was built in 1912 (RA-2) has been conserved and restored.⁷¹ The Committee was responsible for establishment of the Town Hall with a library, Gaiety Theatre, and Police Station. Municipal Market and Fire Brigade Services were also provided in subsequent years.

In 1903, the electrical lighting system was introduced in the town and the first place to benefit was the railway station. The city extends along the east-west spinal axis extending on either side of the Ridge and several flanking spurs. It was planned and developed by the British on seven hills namely 2257 metre high Elysium Hill, 2070 metre Summer Hill, 2449 metre Jakhu Hill, 2160 metre Pleasant Hill, 2175 metre Prospect Hill, 2135 metre Observatory Hill and 1860 metre Annadale.

Shimla town was planned and developed in accordance with its ecological imperatives by the British for living, work and play. Institutional, British Political residential and tourist use on the top, a commercial establishment along the middle contours and Indian residential down below was the general pattern of development. The various pockets of thick development are interspersed by green cover and forests. The climate, vegetation, environment, heritage, landscape, streams, rivulets and grasslands, add to attractions of the City whereby it becomes most preferred destination of the tourists. There are unforgettable walks in the city. The colonial community thus left behind an indelible impact in the form of typical urban planning of Shimla.

Economic and social development primarily depends on transport and communications. Road transport is the major means of travel and transport.⁷² There is a network of 2050 kms

⁷¹VipinPubby (1996). *Shimla Then and Now*. (Indus Publishing), pp. 17–34.

⁷² V. Verma, *The Emergence of Himachal Pradesh*, (Indus Publishing Company, New Delhi, 1995),p.324

length of roads out of which 161 kms are double lane roads. Total length of railway line (on Shimla Kalka Rail) is 72 kms. From the point of view of transport and communications, Solan district occupies an important place because National Highway No. 22 and railway Line pass through the district. All the block headquarters in the district are connected with the major commercial centres, district and the state headquarters. There are, at present, 179 post offices, 15 telegraph offices and 57 telephone exchanges in the district. All the villages in the district are electrified.⁷³

The city's development plan aims make Shimla an attractive health tourism spot. The unemployment rate in the city has come down from 36% in 1992 to 22.6% in 2006. This drop is attributed to recent industrialization, the growth of service industries, and knowledge development. The governments of the Himalayan hill-states and the international donor agencies have consistently advocated disbursement of funds for improvement of road connectivity in keeping with the mandates of a “development paradigm” that advocates the importance of bringing remote mountain villages under the influence of modernisation and change.

The Kalka Shimla Railway line is one of the most popular hill railways in India. The trains running on these tracks are popularly called 'Toy Trains'. A journey on this railway is a unique experience as one passes through the breath taking landscape of the majestic Himalayas, through tunnels and over bridges; amid the lush green valleys embellished with pine and oak trees. The traveller is left with a long lasting memory of rhapsody and triumph. The toy train passes through 102 tunnels (originally 103), 969 bridges, 919 curves and 20 railway stations in its entire journey.

⁷³ Mathur, *Bridges, buildings & black beauties of northern railway*, (Institute of Rail Transport in association with National Rail Museum, 2008), p.10