

# THE COMPLETE STORY OF INDIAN RAILWAYS

Indian Railways complete 166 years on April 16, 2019



Weaving a nation together

As a Google Doodle celebrates Indian Railways 160 years on April 16 and Mumbai playing host to the national programs on railways. Here's a story of how it all started.

If it was a trade of wool that prompted the journey of the first ever passenger train in England between Stockton and Darlington in 1825, it was trade of cotton, among other things, that prompted the journey of the first ever train on the Indian sub-continent.

Indian Railways, which had a modest beginning in 1853, has since then been an integral part of the nation -- a network that has held together a population of one billion. A self-propelled social welfare system that has become the lifeline of a nation, Indian Railways has woven a sub-continent together and brought to life the concept of a united India.

The railways in India are the largest rail web in Asia and the world's second largest under one management. With a huge workforce of about 1.65 million, it runs some 11,000 trains everyday, including 7,000 passenger trains. The tale of how railway communication gained foothold in India, where the locomotive was once considered as a "fire-spitting demon", is indeed an interesting one.

## World premiere

The earliest recorded illustration of a railway dates back to 1320, showing a small wooden mine trolley running in recessed stone guides, possibly originating in ancient Greece.

The railway, in its true sense, emerged in the early seventeenth century, when the first wooden tracks were laid at Wollaton, England, in 1604 to be used for running of horse-drawn carriages.

It was only in February 1804, a good two centuries later, that Richard Trevithick, an engineer, ran the world's first steam engine successfully on rails. The locomotive, with its single vertical cylinder, 8-foot flywheel and long piston rod, managed to haul ten tonnes of iron, seventy passengers and five wagons from the ironworks at Penydarren to the Merthyr-Cardiff Canal. This was, however, a trial run and cannot be termed as first railway passenger service train.

In 1821, Edward Pease, a wool merchant, during his travels of buying and selling wool, felt that a railroad with wagons drawn by horses to carry coal from the collieries of West Durham to the port of Stockton would be of great help. The same year, Pease and a group of businessmen formed the Stockton & Darlington Railroad company.

However, Nicolas Wood, the manager of Killingworth Colliery and his engineer George Stephenson, had a better idea. They met Pease and suggested that he should consider building a locomotive railway instead. And after some thought Pease did agree.

The Stockton & Darlington Railroad was opened on 27 September, 1825. The engine, built by George Stephenson, pulled 36 wagons, including twelve wagons of coal and flour, six of guests and fourteen wagons full of workmen. This has been recorded as the first passenger train in the world.

But, this is disputed and some claim the Liverpool-Manchester Railway of 1830s as the first passenger railway. However, disputes apart, railway communication gained popularity in the 1830s and since then there has been no backward journey.

## Evolution in India

In 1846, there was a major failure of the cotton crop in America. Following this, textile merchants in Manchester and Glasgow in Great Britain had to seek alternative markets. It was then that traders in the UK turned their attention on the cotton crop in India, one of British colonies then, rich in cotton crop.

However, cotton was produced in various parts of the Indian subcontinent and it took days to bring it to the nearest port to transport it to England through ships, the only major means of international communication then. The British then had to build a link from the hinterland to India's major ports for quicker transport of cotton and other goods as demand soared. This expedited matters for the British to introduce a railway in India.

The British also felt that organizing and dispersing the growing native population faster deployment of troops could be better handled by a railway.

As early as 1843, Lord Dalhousie had first conceived the possibility of opening up of India by means of railway communication. He had proposed to link the three ports of Bombay, Calcutta and Madras by a railway.

The same year he sent George T. Clarke, an engineer, to Bombay to assess the possibility. A few years later in 1845, a strong lobby in Bombay supporting railway communication formed a body called the Bombay Great Eastern Railway. As matters started to gain momentum, the Bombay Great Eastern Railway locally prepared plans for constructing a railway line from Bombay to the Deccan. But the British already had a concrete plan in their minds and soon things began to take shape.

The earliest proposal for laying railways in India was made some time around the 1830s. Inspired by the railway mania in England, some eminent citizens in Madras had proposed the idea of a railway, but plans remained on paper and the project did not see the light of the day then.

Conditions in India were quite different from those in Britain. Many British and Indians, who had a better understanding about India's topography and geography, opposed the construction of railways as a "premature and expensive undertaking" and a "hazardous and "dangerous venture". Certain opponents doubted the feasibility of introduction of railways in India citing poverty, extreme climate with torrential rains, violent storms, high mountains, sandy deserts and dense forests.

But the process of building a railway network that would one day not only captivate the nation ,but the whole world had already begun.

### First Railway Company

The bill to incorporate India's first railway company, the Great Indian Peninsular Railway Company [G.I.P.R] (later it was rechristened as Peninsula), came up before the British Parliament twice. First in March 1847 and later in 1849.

In March 1847, the East Indian Company, which then ruled India, opposed the bill on certain clauses forcing it to be withdrawn. Matters dragged on till 1849 when Lord Dalhousie, who had experience in railway matters in England, took over as the Governor-General of India. On August 1, 1849, the Act to incorporate the Great Indian Peninsula Railway came into being.

The original contract made on August 17, 1849, between the East India Company and the Great Indian Peninsula Railway stated that the capital of the GIP Company shall be 5 lakh pounds, but can be subsequently increased to one million pounds in case the railway line has to be extended beyond Callian (Kalyan) and across the Thull and Bhor Ghats. The railway line has been referred to as an “Experimental line of Railway” throughout the contract.

### The first train in India

The line in Bombay was ready by November 1852 and on November 18, 1852, a few engineers and directors of the GIP Company had a trial run between Bombay and Thane. However officially, the first train in India (and in Asia) was flagged off on April 16, 1853, a Saturday, at 3:35 pm between Boree Bunder (Mumbai) and Thane, a distance of 34 kms. The importance of the day can be gauged from the fact the Bombay government declared the day as a public holiday.

The train, hauled by three engines -- Sindh, Sahib and Sultan -- carried as many as 400 passengers in its 14 coaches on its debut run. The Great Indian Peninsula Railway had ordered a set of eight locomotives from Vulcan Foundry, England, for the purpose. A suit of Durbar Tents erected at Thane welcomed the first train and a cover for four hundred persons was built with tables laid with menu literally groaning under every delicacy of the season.

India had, however, spotted one of its earliest locomotives as early as December 22, 1851. The first steam engine, Thomason, hauled some wagons containing mud and earth during the construction of the Solani aqueduct near Roorkee. The second one, Lord Falkland, named after a Bombay governor, was seen a year later near Byculla, Bombay, doing shunting duties. The third one was used for the trial run of the passenger train in November 1852. And it was only after all this that the much-publicised “official” first train saw the light of the day on April 16, 1853. Wasn't it a long, long journey before the “official” first train saw the light of day.

And since then there has been no looking back.

The north, south and the east

By late 1850, agreements had been signed to prepare trial lines to run inland in Bombay (The Great Indian Peninsula Railway), Calcutta (East Indian Railway) and Madras (Madras Railway).

Calcutta, the then capital of India, on the western coast of the sub-continent was also in the race to be first to introduce railway into India. The survey from Calcutta to Delhi for the East Indian Railway was carried out during 1845-46. But the construction of railway line from Howrah to Raniganj was sanctioned only after three years.

But fate denied Calcutta the privilege of being the first city to have a railway in India. Locomotive and carriages for Bombay and Howrah were despatched from England almost at the same time. But the ship carrying the loco for East Indian Railway, HMS Goodwin, was misdirected to Australia. The other ship carrying carriages for Howrah sank at the Sandheads.

Yet another problem that besieged east India was the dispute over the French territory of Chandernagar (Chandannagar) through which the railway line was to be aligned. The settlement of this dispute with French rulers took considerable time and Bombay won over Calcutta in the railway race.

It was finally on August 15, 1854 that the first passenger train in the eastern section ran between Howrah to Hooghly (24 miles). The section is soon extended to Pundooah.

In the south, the Madras Railway Company was formed in London as early as July 8, 1845. The shareholders held a general body meeting in February 1846 to construct a railway line from Madras to Arcot, known as Wallajah Nagar.

But matters were delayed and the actual construction begun on June 9, 1853. The first train between Royapuram and Wallajah Nagar steamed out on June 26, 1856. The Bangalore section was opened on August 1, 1864. Railway lines to Nagari, Raichur, Bellary were completed subsequently,

In the north, the first train ran between Allahabad and Kanpur, a distance of 180 km, on March 3, 1859, six years after the first train.

The railways then were built on a Guarantee System, which meant that the railway companies were guaranteed a certain rate of interest on its capital investment. The guarantee was to be honoured by the East India Company.

## Battle of gauges

Lord Dalhousie, while formulating the railway policy for India, had suggested that a uniform gauge system should be adopted for the entire Indian Railway network. The gauge, the distance between the two inner faces of the rails of a railway track, selected for India was of 5 feet six inches.

Lord Dalhousie had stated that an intermediate gauge between 4'-8 ½" and 7'-0" was the best gauge especially for India which would substantially command all the possible benefits of the latter." The Court of Directors accepted 5'-6" as the gauge for India and the Government of India further confirmed their decision in favour of 5'-6" and in 1851, it was accepted as the standard gauge for the railways in India.

## An official change in gauge

The uniformity of gauge was maintained till 1862. But Lord Mayo, the then viceroy of India, was a great enthusiast of the metric system. He encouraged the building of metre gauge lines in India during his tenure. It was seen as a compromise between proposals for narrow gauge for use in areas with limited traffic.

It was decided that the subsidiary lines to the main railway system, on which large traffic was not expected, should be constructed on narrow gauge light system and subsequently connected to a broader gauge. Thus, the metre gauge came into existence.

Such was the craze of Lord Mayo for metric systems that he even wanted to replace other existing systems in the country, but was prevented by doing so by strong British bureaucracy. In fact, it was his predecessor, Sir John Lawrence, who had initiated the process of laying the metre gauge lines in India, which Lord Mayo took up with such zeal.

Now, each time a railway line was proposed in India, fresh controversy over the gauge to be adopted arose.

By 1889, the mileage of different gauges was -- broad gauge (5 feet six inches) 8,000 miles, metre gauge (1 metre) 5,000 miles and narrow gauge 250 miles.

Today, India has four major gauges -- broad (five feet six inches), metre (three feet three inches), two feet six inches (narrow gauge) and two feet (narrow gauge).

## The Gaikwad Baroda State Railway

In 1863, just ten years after the first train ran in India, the Gaikwad of Baroda state built a railway, which was of just two and a half feet gauge. Baroda was rich in cotton

and following the American Civil war during 1861-1865, the Gaikwad decided to grab the opportunity of exporting cotton from his state to the markets in England.

The maiden line of the Gaikwad Baroda State Railway (GSBR) was constructed quickly between Dhaboi and Miayagam. The Durbar of Baroda had financed the project. The Gaikwad was in such a hurry to commence the project to export cotton that he employed bullocks -- bullmotives -- as engines to run trains instead of waiting for the actual steam locomotives to arrive from England.

In those days, it took days to transport goods from England to India as the only international mode of communication was ships, which followed the time-consuming sea route round the Cape of Good Hope. GSBR's steam locomotives arrived in India only in 1873. This was the first narrow gauge railway in India.

### The Darjeeling Himalayan Railway

The Darjeeling Himalayan Railway, opened in 1880, is an engineering feat. This little railway has a gauge of 2 ft. and a length of fifty-one miles, with steep gradients and amazing loops.

Work on building the line began in May 1879, and in March, 1880, the Viceroy of India, Lord Lytton, had a journey on the train. In August 1880, the line was opened for passenger and goods traffic as far as Kurseong, 4,864 ft. above the sea and thirty-two miles from Siliguri. In July 1881, the line was opened throughout to Darjeeling station.

On December 2, 1999, the Darjeeling Himalayan Railway became the second railway site in the world to be designated a World Heritage site. The railway has been added as a world heritage site with "outstanding universal value" by UNESCO's World Heritage Committee.

### The Nilgiri Mountain Railway

The Nilgiri Mountain Railway, also known as the Blue Mountain Railway, is a 46-km long 1000 mm gauge railway connecting Mettupalayam (1,069 ft) to Ooty (7228 ft). Its first section up to Coonoor was completed in 1899 by the Nilgiri Railway Company and was extended to Ooty in 1903.

This railway has a gradient of 1 in 12 with curves as sharp as 18 degrees. Due to the gradient and the curves, the permanent way had to be built of the Abt Rack type. This means that two steel racks, the teeth of which break pitch, are laid in the centre of the track and are carried by pedestals, which are firmly bolted down to the sleepers. This is the only rack railway in India.

## Patiala State Monorail

In 1907, the first section of an unusual railway on the "Ewing System" connecting Bassi and Sirhind (6 miles) started in Patiala state. Colonel Bowles, who designed the system, was the state engineer. He was responsible for laying the Patiala State Monorail Train ways. The line was laid for about 50 miles between Sirhind to Alampura and Patiala to Bhawanigarh. The track was a single rail along one side of the road. Today, one can ride this train at the National Railway Museum, Chanakyapuri, New Delhi.

## Railway raj

Between 1854 and 1860, India had eight railway companies – Eastern India Railway, Great India Peninsula Company, Madras Railway, Bombay Baroda and Central India Railway, Scindia Railway, Eastern Bengal Eastern Railway and Calcutta and South Railway Company. In the years between 1869 and 1881, the British government took up the responsibility of laying railway lines in India from the East India Company. And thereafter, things began to move rapidly.

Chhatrapati Shivaji Terminus/Victoria Terminus - country's pride, neighbour's envy

The administrative headquarters of today's Central Railway, then known as GIP Railway, is presently known as Chhatrapati Shivaji Terminus station. Work on the construction of the building, now declared as an Grade-1 heritage structure, commenced in 1878 under the guidance of noted architect Fredrick William Stevens.

The building has been considered as one of the finest station buildings in the world and architecturally one of the most splendid and magnificent Italian Gothic edifices existing.

Old records mention that some stone work for the building was done by Indian craftsmen and students of the Bombay School of Arts.

When the first train ran between Bombay and Thane on April 16, 1853, the place from where the debut train initiated its journey was known as Boree Bunder. It was a small place for the landing of country boats. The original structure of Boree Bunder station from where the first train ran was somewhere near the existing imposing Victoria Terminus station building. To build the new building, land had to be reclaimed from the sea.

Work on the building began in May 1878. During the first half of 1879, the foundations for booking and administration offices were considered and detailed estimates for the whole project were sent to the Government of India for a sanction.



The cost of the construction of the terminus was Rs 16,35,562. The first ones to occupy the new building were establishments of chief engineer and police superintendent. The booking hall, the station master's office could not be brought into use for some time initially for want of connection with the municipal sewer.

The building took ten years for completion and was officially renamed as Victoria Terminus after Queen Victoria on Queen's Golden Jubilee Day on June 20, 1887. Today, the terminus has been renamed as Chhatrapati Shivaji Terminus.

### An all-Indian locomotive

It was as late as 1895 that India saw the birth of its first locomotive. The locomotive, an F class 0-6-0 metre gauge numbered F-734, was built at Ajmer for the Rajputana Malwa Railway. It weighed 38 tonnes. The locomotive, to be used for hauling mixed trains, was built at a cost of Rs 15,869.

This locomotive has outside connecting rods and side rods. It was also used on the Bombay Baroda and Central India Railway (BB&CI) network. Today, the locomotive has been stored as one of the outdoor exhibits at the National Railway Museum, New Delhi.

### Electrifying the network

In 1904, the idea to electrify the railway network was proposed by W.H White, chief engineer of the then Bombay Presidency government. He proposed the electrification of the two Bombay-based companies, the Great Indian Peninsula Railway and the Bombay Baroda and Central India Railway (now known as CR and WR respectively).

Both the companies were in favour of the proposal. However, it took another year to obtain necessary permissions from the British government and to upgrade the railway infrastructure in Bombay city. The government of India appointed Mr Merz as a consultant to give an opinion on the electrification of railways. But Mr Merz resigned before making any concrete suggestions, except the replacement of the first Vasai bridge on the BB&CI by a stronger one.

Moreover, as the project was in the process of being executed, the First World War broke out and put the brakes on the project. The First World War placed heavy strain on the railway infrastructure in India. Railway production in the country was diverted to meet the needs of British forces outside India. By the end of the war, Indian Railways were in a state of dilapidation and disrepair.

By 1920, Mr Merz formed a consultancy firm of his own with a partner, Mr Maclellan. The government retained his firm for the railway electrification project. Plans were drawn up for rolling stock and electric infrastructure for Bombay-Poona/Igatpuri/Vasai and Madras Tambaram routes.

The secretary of state of India sanctioned these schemes in October 1920. All the inputs for the electrification, except power supply, were imported from various companies in England.

And similar to the running of the first ever railway train from Bombay to Thane on April 16, 1853, the first-ever electric train in India also ran from Bombay. The debut journey, however, was a shorter one. The first electric train ran between Bombay (Victoria Terminus) and Kurla, a distance of 16 kms, on February 3, 1925 along the city's harbour route.

The section was electrified on a 1,500 volts DC. The opening ceremony was performed by Sir Leslie Wilson, the governor of Bombay, at Victoria Terminus station in presence of a very large and distinguished gathering.

India's first electric locos (two of them), however, had already made their appearance on the Indian soil much earlier. They were delivered to the Mysore Gold Fields by Bagnalls (Stafford) with overhead electrical equipment by Siemens as early as 1910.

Various sections on the railway network were progressively electrified and commissioned between 1925 to 1930.

In 1956, the government decided to adopt 25kV AC single-phase traction as a standard for the Indian Railways to meet the challenge of the growing traffic. An organisation called the Main Line Electrification Project, which later became the Railway Electrification Project and still later the Central Organisation for Railway Electrification, was established. The first 25kV AC traction section in India is Burdwan-Mughalsarai via the Grand Chord.

### The first railway budget

In 1920, a committee was formed headed by William Acworth, who was a world-renowned authority on railways, to suggest administrative changes in the expanding railway network of the sub-continent.

The Acworth Committee consisted of 10 members, all experts either in Railway matters or finance and administration. The committee supported the case for state management of the Indian Railways in their report published in September 1921. The

landmark decision about the separation of railway finances from general finances was also the outcome of this report. The railway board was also subsequently expanded to have a financial commissioner, a member in-charge of ways, works, stores and projects, and a member in charge of administration, staff, and traffic. All this eventually led to the presentation of the first ever railway budget in 1925.

#### Another war

In 1939, World War II put the Indian Railways under immense strain again. Locomotives, wagons, and track material were ruthlessly dismantled and taken from India to the Middle East. Railway workshops were used to manufacture military equipment.

#### The partition

In 1947, the British quit India dividing the nation into two countries, India and Pakistan. As a country was divided, so was its railway system. Two big railway systems, Bengal Assam Railway and North Western Railway, were broken up.

A part of the Jodhpur Railway was given to West Pakistan. Much of the Bengal Assam Railway went to the then East Pakistan (now Bangladesh). The Assam Railway was isolated from the rest of the Indian system. Much of the railway infrastructure was damaged in the partition process as violent mobs attacked railway stations and trains carrying refugees.

Following was the statistics of the division of railway infrastructure:

Locomotives	Passenger coaches	Goods wagons	Kilometres	
India	7,248	20,166	2,10,099	54,376
Pakistan	1,339	4,280	40,221	11,133

#### Post-partition developments

After the horror of partition, things slowly began to come on track after two years. On January 26, 1950, an indigenous locomotive workshop was set up in West Bengal, Chittaranjan Locomotive Works (CLW). It had plans to manufacture 120 steam locomotives annually. The first of the successful WG class steam engines (8401 Deshabandhu) was commissioned on November 1, 1950.

## Getting things organized

It was in June 1950 itself that the Railway Board put forward a plan to divide the railways in India into six zones to get things organized. However, after some formalities, the actual plan was implemented a year later, by April 1951.

On April 14, 1951, the Southern Railway was formed by merging the Madras Railway, the South Marhatta Railway, the South Indian Railway and the Mysore Railway.

On November 5, 1951, the Central Railway was constituted by bringing together the Great Indian Peninsula Railway (GIPR), the Nizam Railway, the Scindia Railway and the Dholpur Railway.

On the same day, the Western Railway was constituted by merging the Bombay Baroda and Central India Railway (BB&CI), the Sourashtra Railway, the Rajasthan Railway and Jaipur Railway.

The merger of Eastern Punjab Railway, the Jodhpur Railway, the Bikaner Railway and some upper divisions of the East India Railway led to the formation of the Northern Railway on April 14, 1952.

Our Railway, Tirhut Railway and the Assam Railway formed the North Eastern Railway and the remaining divisions of the East India Railway and the Bengal Nagpur Railway constituted the Eastern Railway on the same day. These were the first six zones of Indian Railways.

## First exports

In the late seventies, the Indian Railways, for the first time ever, bagged an export contract for the supply of 15 YDM (meter gauge) locomotives (to be built in Diesel Locomotive Workshop, Varanasi) to Tanzania in January 1976

## The steam theme

With the advent of high speed electric and diesel engines, the glory of steam was slowly coming to an end. In 1970, the last steam locomotive, Antim Sitara (WG-10560) rolled out of Chittaranjan Locomotive Works. By late 1973, CLW had put a halt in the production of all steam locomotives.

In fact, the oldest working locomotive in India -- built in 1855, two years after the inception of railways in India, -- is still hale and hearty. It is still functional. Titled the Fairy Queen, the broad gauge locomotive, is one of the oldest working steam locomotives in the world. It was built by Kitson & Co. in January 1855. Historical records also state that this locomotive was used by British troops during the Indian

uprising of 1857. It was in 1909 that the Queen, having done yeoman service, was taken out of operations. In 1996, the National Rail Museum took up the challenge of getting the locomotive restored in heritage interest thereby making it the oldest working locomotive in the mainline anywhere in the world.

The restoration and maintenance work took an entire year and in 1997 began to function as a moving train. An exclusive tourist train for a journey back into time was conceived and the Fairy Queen took its first load of delighted passengers on a maiden restoration run.

Much later, it was stored at the National Rail Museum at New Delhi. The Fairy Queen was revived by steam enthusiasts in 1996, and by 1997 it began regularly hauling a tourist train between Delhi and Alwar. The Fairy Queen has found a mention in the Guinness Book of World Records for being one of the oldest working locomotives in the world. In 1999, the Fairy Queen bagged the National Tourism Award for most innovative and Unique Tourism Venture. When the Queen resumed operations for 1999-2000, the International Council of Pacific Area Travel Writers Association (PATWA) also selected the engine as a heritage venture for award at ITB Berlin on March 14, 2000. On January 13, 1998, the Guinness Book of World Records certified the Queen of Indian Railways as the "oldest working steam locomotive."

#### Rail museum

In 1977, the country's first railway museum was set up at Chanakyapuri, New Delhi. The first of its kind in the country, this unique museum covers a land area of over 10 acres, comprising an elegantly designed octagonal building housing nine display galleries and a large open area laid out to simulate a Railway Yard.

With constant emphasis on improvements and additions, the museum can now boast of being one of the finest rail museums in the world and a very popular tourist attraction of the country's capital. On an average, this museum has around 1,000 visitors daily.

The idea of preserving the long and glorious heritage of the Railways in India took root in the year 1932 when it was proposed to set up a Railway Museum at Dehradun. The first President of India, Dr Rajendra Prasad, had also reiterated the idea to set up a railway museum during the Indian Railways centenary celebrations in 1953. But the idea could take shape as late as 1968 when the Ministry of Railways finally took a decision to set up a Railway Museum at Delhi. The foundation stone of the museum was laid on October 7, 1971 and was formally inaugurated on February 1, 1977.

## Consolidating the network

On March 31, 1978, the railways were split into nine zones. The Northern zone with its headquarters at Delhi (Delhi junction), the North Eastern zone with its headquarters at Gorakhpur, the North East Frontier with its headquarters at Maligaon (Guwahati), the eastern zone with its headquarters at Kolkatta (Howrah junction), the south eastern zone with its headquarters at Kolkatta again (Howrah junction), the south central zone with its head offices at Secunderabad, the southern zone at Chennai (Chennai Central) and the Central and Western Railways with their administrative headquarters at CST and Churchgate respectively.

Moreover, each zonal railway has a certain number of divisions, each having a divisional headquarters. The Indian Railways are today divided into nine zones and 59 divisions

The Kolkatta Metro is worth a mention here as it is owned and operated by the Indian Railways but does not belong to any of the zones. It is administratively considered to have the status of a zonal railway. The Konkan Railway, running along the western coast of the sub-continent and an example of engineering feat, is the latest one to join the IR bandwagon.

## Kolkatta metro

Kolkatta metro railway line, running from Tollygunje to Dum Dum, was introduced on September 27, 1995, exactly one hundred and seventy years after the Stockton and Darlington railway in England. The length of the route is around 16.45 kms and initially ran 106 services. The decision to build a metro railway for Kolkatta was taken to provide an efficient, fast, safe and pollution free mass rapid transit system to the people of Kolkatta. The Indian Railways spent over Rs 1,600 crore for the project, which took two decades to complete. The trains here run on third rail of 750 V DC.

## Konkan Railway

Work on the line running along the western coast of India began as early as 1964 when a line was laid between Diva and Panvel. It was further extended to Apta two years later in 1966. But then matters got delayed due to political and technical reasons and it was only after twenty years that the route was further extended. The Apta-Roha line was opened in 1986.

But after this, things did gain momentum and two years later in 1989, work on the Konkan Railway officially began.

After nine years of labour, the Konkan Railway was opened for public and the first passenger train along the picturesque sea route was flagged off on January 26, 1998. At present, the route consists of a single line non-electrified 760 kms from Roha to Mangalore along the western coast of India.

Konkan Railway, the largest railway project in this part of the world in the last five decades, threw up a whole range of difficulties technical, financial, emotional and psychological. The rocky Sahyadris had to be bored through, 1,500 rivers had to be forded, a railway line had to be built out of nowhere

The route has India's longest ever tunnel at Karbude, which is 6.5 km. in length, longer than any other tunnel built in the country before. The route also has a viaduct over the Panval river, a 424m long railway bridge for a single line of broad gauge track, another record.

The other important breakthroughs achieved by Konkan Railway are the anti-collision device and Sky Bus Metro.

#### Battle of gauges revived – Project Unigauge

It all started in February 1971 when the railways announced that all new lines would be constructed as broad gauge only and that the existing metre gauge would be progressively converted to broad gauge so as to achieve unigauge. But the conversion speed was slow due to the non-availability of resources.

In 1975, a decision was taken to upgrade the metre gauge system, selectively, as an alternative to gauge conversion. But the break of gauges still hampered development and its advantages could not equal those of broad gauge and failed to attract people and investments.

In 1991, a policy decision was taken to expedite the conversion work, which had been progressing at a very slow speed for forty years. Project Unigauge was launched in 1992 and it was made a high priority project. It was aimed at selective conversion of metre gauge/narrow gauge lines to broad gauge in a phased manner based on considerations of capacity requirement, developmental potential and on strategic considerations.

Priority lines for conversion from metre gauge to broad gauge were identified from the view of operational requirements and also to help the development of the backward areas.

For each route, a techno-economic study was done to determine the approximate cost of conversion and the return on capital. An action plan was formulated for

conversion of 13,117 km. of metre gauge/narrow gauge lines out of which 6,000 km was targeted to be completed during the eighth five-year plan and the rest during the ninth five-year plan.

### Mumbai Railway Vikas Corporation

The Mumbai Railway Vikas Corporation, a special purpose body, was established on July 12, 1999 in Mumbai to provide safe, reliable and punctual journey for suburban commuters of Mumbai. The Corporation has an equity of Rs 25 crore subscribed by the

Indian Railways and the state government of Maharashtra. It is basically a government company that would execute the suburban projects identified under the Mumbai Urban Transport Project (MUTP) and other railway projects under its jurisdiction in and around Mumbai.

It changed the face of Mumbai when they introduced the new-age Siemens powered violet coloured local trains.

### Rakesh Mohan Committee

One of the recent important developments is the presentation of the Rakesh Mohan Committee report on railway restructuring. The committee has recommend splitting up Indian Railways into an operations and a regulatory body, rationalising fares, closure of unprofitable lines, a corporate approach to finances, manpower reductions, and an aim of privatisation after 15 years.

Former Railway Minister Nitish Kumar had accepted a few major suggestions of the Rakesh Mohan Committee report. The first one to be implemented was levying a safety surcharge on railway. A committee, appointed to suggest ways to use the collected safety fund, has recently submitted its report. The panel has recommended using most of the money for track renewal and upgradation. But how much safety would the new fund actually generate still remains to be seen.

Moreover, the coming railway budget is said to be a “tough one”.

### Kakodkar Committee on Safety

The high level safety review committee of Indian Railways constituted under the chairmanship of Dr Anil Kakodkar has said that the situation of deaths on tracks in Mumbai is grim and needs to be addressed on a war-footing.



The report said that the estimate is that almost 15,000 people die on tracks due to unlawful trespassing on tracks every year of which about 6,000 are on the Mumbai suburban section.

“Reluctance of the Indian Railways to own the casualties , which do not fall under the purview of accidents, but are nevertheless accidents on account of trains, can by no means ignored. No civilised society can accept such massacre on their railway system,” the committee that had railway expert E Sreedharan as its advisor, added.

The committee, which also suggested a fare hike among other things, comprised eminent persons/experts in technical and high end technology related fields with expertise, was constituted in September 2011 to provide an independent perspective of the system. A recent RTI had revealed that nearly 40,000 people had died on Mumbai’s tracks and an equal number injured between 2002-2011.

Nevertheless, 160 years later the railways continue to chug non-stop

Rajendra B Aklekar (Courtesy-IRFCA and railway archives)

