CHAPTER 1

Indian Railway: An Overview

- Introduction and meaning
- Historical perspective of Indian Railway
- Profile of Indian Railway
- Uniqueness & specialty of Indian Railway
- Notable trains and achievements
- Emergence of the Railway Zones
- Projections In the New Millennium
For functional efficiency the Indian Railways is divided into 16 zonal railways comprising 67 divisions and 6 Production Units with Railway Board on top of the overall Management Hierarchy.

Indian Railways has a monopoly on the country's rail transport. It is also one of the largest and busiest rail networks in the world, transporting just under five billion passengers and almost 350 million tonnes of freight annually. IR is the world's largest commercial or utility employer, with more than 1.6 million employees.

Indian Railways originally evolved as a commercially owned business organisation. After undergoing various transformations, it has now developed into the 2nd largest transportation network in the world under a single management. Even around the time India became independent, IR was being worked as a State railway system with business ethos at its core.

MEANING & CONCEPT

'Railway' means a railway, or any portion of a railway, for the public, carriage of passengers, animals or goods, and include-

1. All land within the fences or other boundary marks indicating the limits of the land appurtenant to a Railway;

2. All lines of railway, sidings or branches worked over for the purpose of, or in connection with, a Railway;

3. All stations, offices, warehouses, wharves, workshops, manufactories, fixed plant and machinery and other works constructed for the purposes of, or in connection with, a Railway;

4. All ferries, ships, boats and crafts which are used on inland waters for the purposes of the traffic of a railway and belong to or are hired or worked authority administering the Railway.

HISTORICAL PERSPECTIVE OF INDIAN RAILWAYS

Indian Railways.... the golden Era

16th April, 1853..............The Beginning

"[The railway is] a triumph, to which, in comparison, all our victories in the East seem tame and commonplace. The opening of the
Great Indian Peninsular Railway will be remembered by the natives of India when the battlefields of Plassey, Assaye, Meanee, and Goojerat have become landmarks of history." (The Overland Telegraph and Courier, April 1853)

On April 16th, 1853, at 3:35pm when a train with 14 railway carriages and 400 guests left Bombay's Bori Bunder for Thane, with a 21-gun salute. It was hauled by three locomotives: Sindh, Sultan, and Sahib. The journey took an hour and fifteen minutes.

The first railway on Indian sub-continent ran over a stretch of 21 miles from Bombay to Thane.

The idea of railway to connect Bombay with Thane, Kalyan and with the Thal and Bhore Ghats inclines first occurred to Mr. George Clark, the Chief Engineer of the Bombay Government, during a visit to Bhandup in 1843.

The railways traverse through the length and width of the country; the routes cover a total length of 63,140 km (39,462 miles). As of 2002, IR owned a total of 216,717 wagons, 39,236 coaches and 7,739 locomotives and ran a total of 14,444 trains daily, including about 8,702 passenger trains.

Today the Indian Railways transports 5 billion passengers each year which is just one billion short of the entire world population.

Railways were first introduced to India in 1853. By 1947, the year of India's independence, there were forty-two rail systems. In 1951 the systems were nationalized as one unit, becoming one of the largest networks in the world. Indian Railways operates both long distance and suburban transport in India.

A plan for a rail system in India was first put forward in 1832, but no further steps were taken for more than a decade. In 1844, the Governor-General of India Lord Hardinge allowed private entrepreneurs to set up a rail system in India. Two new railway companies were created and the East India Company was asked to assist them. Interest from investors in the UK led to the rapid creation of a rail system over the next few years. The first train in India became operational on 1851-12-22, and was used for the hauling of construction material in Roorkee. A year and a half later, on 1853-04-16, the first passenger train service was inaugurated between Bori Bunder, Bombay and Thana. Covering a distance of 34 km (21 miles), it was hauled by three locomotives, Sahib, Sindh and Sultan. This was the formal birth of railways in India.
The British government encouraged new railway companies backed by private investors under a scheme that would guarantee an annual return of five percent during the initial years of operation. Once established, the company would be transferred to the government, with the original company retaining operational control. The route mileage of this network was about 14,500 km (9,000 miles) by 1880, mostly radiating inward from the three major port cities of Bombay, Madras and Calcutta. By 1895, India had started building its own locomotives, and in 1896 sent engineers and locomotives to help build the Uganda Railway.

Soon various independent kingdoms built their own rail systems and the network spread to the regions that became the modern-day states of Assam, Rajasthan and Andhra Pradesh. A Railway Board was constituted in 1901, but decision-making power was retained by the Viceroy, Lord Curzon. The Railway Board operated under aegis of the Department of Commerce and Industry and had three members: a government railway official serving as chairman, a railway manager from England and an agent of one of the company railways. For the first time in its history, the Railways began to make a tidy profit. In 1907, almost all the rail companies were taken over by the government.

The following year, the first electric locomotive appeared. With the arrival of the First World War, the railways were used to meet the needs of the British outside India. By the end of the First World War, the railways had suffered immensely and were in a poor state. The government took over the management of the Railways and removed the link between the financing of the Railways and other governmental revenues in 1920, a practice that continues to date with a separate railway budget.

The Second World War severely crippled the railways as trains were diverted to the Middle East, and the railway workshops were converted into munitions workshops. Having passed through various phases since its introduction on April 16, 1853, railways in India entered a new era in 1947 when the country attained Independence. The country inherited a shattered railway system which had become the brunt of the Depression of the 1930s and the onslaught of World War II which, though it filled the railway coffers due to the demand for its services, left a major part of its assets obsolete, overused and requiring replacement. Further, the partition of the country had led to division of assets and manpower and dislocated the railway services. Nearly 83,000 railway workers opted to serve in Pakistan while 126,000 stayed on in India. The
division led to the problem of fitting them into their proper places. After Partition, nearly 53,500 route kilometers remained in India.

In the wake of Partition, the railways transport a large number of passengers from India to Pakistan and vice versa. During the first month after Independence, despite great operational and other handicaps, it transported nearly 7,00,000 migrants and another 40,00,000 migrants during the following Year. This feat has no parallel in the annals of world railways. After partition, the pattern and direction of rail traffic underwent a sea change, particularly in northern, western and northeastern parts had no link to with the rest of the country. The Assam Railway in the northeastern parts had no link with the rest of the country. Work on the 227 kilometer long Assam Rail line project was started in January 1948 and the line was completed and formally inaugurated on January 26, 1950.

The loss of the port of Karachi and Lahore, an important centre of trade, jeopardized the traffic from Jammu and Kashmir through Pathankot which had to be diverted to Bombay via Delhi. It necessitated immediate construction of Pathankot - Mukerian railway line to connect Pathankot with Delhi. The work on the 44 km long Pathankot - Mukerian line began in November 1949 and it was formally opened to traffic on April 7, 1952.

The diversion of traffic put severe pressure on the Delhi-Bombay route and also on the port of Bombay. It necessitated the development of another port on the west coast of the country and the obvious choice was Kandla in the Kutch region. Work on the meter gauge line connecting Kandla and Deesa started in January 1950 and the 274 km long line was opened to traffic in October 1952. At the time of independence in 1947, a large portion of the railways went to the then newly formed Pakistan. A total of forty-two separate railway systems, including thirty-two lines owned by the former Indian princely states, were amalgamated as a single unit which was christened as the Indian Railways.

The existing rail networks were abandoned in favour of zones in 1951 and a total of six zones came into being in 1952. As the economy of India improved, almost all railway production units were indigenized. By 1985, steam locomotives were phased out in favour of diesel and electric locomotives. The entire railway reservation system was streamlined with computerization in 1995.
HISTORY OF INDIAN RAILWAYS - AT A GLANCE

- Tramways were used for the carriage of coal & other minerals in U.K. during 16th Century.
- George Stephenson developed 1st steam locomotive for the traction of Railway in 1814.
- The first Public Railways in the world was opened to traffic on 27th September 1825' between Stockton and Darlington - in U.K.
- Indian Railways is first in Asia and 4th in the world.
- In India the first train steamed off from Mumbai to Thane on 16th April, 1853.
- The Indian Railway act was enforced in 1890.
- The Railway Board was established in 1905.
- The Railway budget was separated from General budget in 1924.
- The first steam locomotive was manufactured by Chittaranjan Locomotive Works (CLW) in 1950.
- The Integral Coach Factory was set up in 1956 at Parampur.
- The first Electric Locomotive "LOKMANYA" was manufactured by CLW in 1961.
- The first electric train made its Journey between Mumbai and Pune in 1962.
- In early sixties the then Railway Minister Lal Bahadur Shastri was the first Railway Minister who, submitted his resignation following a fatal accident.
- Indian Railways started running of Rajdhani Express trains in 1969.
- The first double decker train "Vrindaban Express" ran between and Bangalore in 1980.
- The biggest train accident took place between Badla Ghat and Ghamara Railway Station in Bihar state in June 1981 when a train fallen in a river during cyclone causing death of more than 800 people.
- Palace on Wheel came into existence in 1982.
- The Metro train at Calcutta came into existence on 24th October, 1984.
• Indian Railways started running of Shatabdi Express train in 1988.
• Computer Reservation on Indian railway started in 1988
• Metro trains at Delhi came into existence from 25th Dec 2002.
• Fastest train in India is Delhi - Bhopal Shatabdi Express running at 150 kmph.
• Longest Railway Platform in India is at Kharagpur.
• "Himsagar Express" is the "Longest Train" in India.
• Longest Rail Tunnel in India is between Monkey Hill and Khandala Station near Lonavala (Pune).
• Mugalsarai is the biggest "Railway yard" in India.
• "Rail Transport Museum" of India is situated at New Delhi.
• Longest "Railway Bridge" is situated at Dehri-on-sone on Son river (Bihar).
• Kanya Kumari to Jammu Tavi is the longest Railway Route in India.
• Indian Railways run about 12,700 trains per day.
• There are 11,300 Railway Bridges over India Railways.
• Total number of locomotives on Indian Railways are 8,417.
• Total number of passenger coaches on Indian Railways are 38,000.
• Total number of wagons on Indian Railways are 3.47 lacs.
• There are 16 zones on Indian Railways.
• Total number of divisions on Indian Railways are 67.
• There are 45 workshops on Indian Railways.
• There are 19 Railway Recruitment Boards on IR for the recruitment of Railway employees.
• About 1 crore 30 lacs passengers travel per day on IR.
• Around 14 lacs tonnes of freight traffic is carried per day on IR.
Indian Railways is one of the largest Railways in the world. Introduced in 1853 the Railway net work in India spread, expanded rapidly, and has become the principal mode of transport in the country. It has also absorbed advances in railway technology in tune with the requirement of moving large volumes of passenger and freight traffic. Indian Railways consists of an extensive net work spread over 109,221 Km. covering 6906 stations. Operating on three gauges - broad gauge (1676 mm)-meter gauge (1000 mm) and narrow gauge(762 and 610 mm), trains in India carry about 17.7 million passengers and 1.49 million tonnes of freight every day. Broad gauge although forming 72 % of the route, generated 98.5% of freight output and 90.5% of the passenger output during 2002-03. Almost all the double/multiple track sections and electrified routes lie on broad gauge 16272 route kms, constituting over 26 % of the total network and 35% of broad gauge network on Indian Railways is electrified. Indian Railways has nearly 1,19,984 bridges of which 9792 are major bridges. In 2002-03, 1151 bridges were rebuilt/rehabilitated. The transport effort is sustained through the use of 7681 locomotives, 214760 wagons and 44756 coaching vehicles.

Network of railways can be presented in the tabular form as below:

<table>
<thead>
<tr>
<th>Gauge</th>
<th>Route Km.</th>
<th>Running Track Km.</th>
<th>Total Track Km.</th>
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<td>Broad</td>
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<td>6461</td>
<td>87889</td>
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<tr>
<td>Meter</td>
<td>14364</td>
<td>14859</td>
<td>17848</td>
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<tr>
<td>Narrow</td>
<td>3136</td>
<td>3172</td>
<td>3484</td>
</tr>
<tr>
<td>Total</td>
<td>63122</td>
<td>82492</td>
<td>109221</td>
</tr>
</tbody>
</table>
Over two lakh thirty thousand telephone exchange line, 6809 long haul MW kms., 9138 optical fiber communication route kms and over 1686 trunk tele channels kms distinguishes Indian Railways telecom network. Indian Railways system will develop a capacity to carry 624 million tonnes of originating revenue earning traffic which in terms of transport output is 424 BTKMS, during the final year of the X plan.

Commodity wise toning of revenue traffic in the recent past can be summarized as further. the tonnage of coal has been 235.85, raw material to steal plants is 40.99, pig iron and finished steel from steel plants is 13.63, iron ore from export has been around 16.66, cement is 46.25, 45.60 for food grains, tonnage of fertilizers (chemical manure) is 26.46, pol (mineral oil) is 34.05 and balance other goods has been 59.25. And hence total revenue earning traffic is 518.

Recently, the revenue earning freight traffic moved by Railways was 518.7 million tonnes. The total passenger traffic in the year was 5048.2 million originating passengers.

**INDIAN RAILWAYS-UNIQUENESS & SPECIALTY**

Uniqueness of its character continued to exist even after independence, even though it was constituted as a separate ministry and, therefore, was considered as another wing of the Government of India. Even though it is now a part of the Government, Indian Railways have been pursuing a business-oriented approach which has become more professional in the last decade, particularly in the last 2 to 3 years. It is in pursuance of this objective that the IR are exempt from the purview of CPWD, DGS&D, Ministry of Personnel, etc., while remaining largely within the government framework. This situation requires officers and staff of IR to perform their functions on a real-time basis, just like a large private transportation company, involving running & asset management of a fleet of more than 7000 locos, over 2 lakh wagons & over 35000 coaches round the clock, 7 days a week and thus managing over Rs. 56,000 crores worth of assets. Further, to achieve self-sufficiency, IR has extremely well managed production units e.g. Diesel Locomotive Works & Chitranjan Locomotive Works for manufacture of Diesel & Electric locomotives, Diesel loco modernization works for manufacture of Diesel loco components and for Rebuilding/up gradation of locomotives, Integral coach factory & Rail coach factory for manufacture of coaches and Rail wheel plant for manufacture of wheels & axles. Keeping in view the high
growth rate of GDP and also in rail traffic, to match the production capacity with future requirement of rolling stock, IR is setting up another 4 production units for wheels & axles, passenger coaches and locomotives. Further, there is a full fledged research and design wing of IR i.e. RDSO engaged in applied research and providing support to field units to ensure optimal utilization of assets through continual enhancement in reliability and productivity.

Besides being developed into the 2nd largest transportation network in the world under a single management and having a work force of nearly 1.5 million Indian railways is one of the biggest employers in the world. Railways are subject to legislations such as Industrial Disputes Act, Hours of Employment Regulations, Workmen Compensation Act etc., which are in the truest sense totally business oriented and applicable essentially to the corporate sector. It is therefore, not difficult to imagine that, while railway men have been considered to be apart of the bureaucracy, the very nature of their functioning is that of managers working in a business environment and therefore, very different from the normal government servants.

The discipline required to run IR is akin to the organised defense forces, even though the uniform does not exist. The working culture is a mix of discipline of uniformed force and a civilian character. It is essentially a process where a modern manager is running a transportation business for the country, ensuring supply of coal to power houses, movement of oil and lubricants, food grain, fertilizers, steel, cemented, besides moving teeming millions in suburban centres for business, production and manufacturing activities, and transportation of materials such as iron ore, engineering and electronic goods, etc. It is also the most essential life-line for transportation during strategic movements involving security of the country. All these require the best managerial skills to be fine tuned to such an extent that the country does not suffer as, otherwise, it can create a chaotic situation in any corner of the country. Strategic importance gains significance particularly in the North and Northeastern sectors, where railways are the main transportation mode for supplies due to the inadequate availability of road network.

Besides coping with natural calamities such as floods, famines, which the country often faces, as also strikes and other disruptive activities, IR is expected to provide continuous transport with minimum disruptions. This creates a challenging situation requiring a very high level of managerial skill.
NOTABLE TRAINS AND ACHIEVEMENTS

The Darjeeling Himalayan Railway is a World Heritage Site, and one of the few steam engines in operation in India. The Darjeeling Himalayan Railway, climbs on tracks only two feet [610 mm] apart, at a gradient of 1 in 22.5, to Ghoom, India's highest station, 7,408 feet [2,258 m] above sea level. The track has three spiral loops and six reversing zigzags. The most famous section, the Batasia loop, tempts passengers to jump out of the train, scramble up the grassy slopes, and board the train after it takes the curve. The exciting journey is climaxed with a view of Kanchenjunga, the third-highest mountain in the world. In 1999 this railway, a narrow gauge train with a steam locomotive, was given World Heritage status by UNESCO, making its future more secure. The route started earlier at Siliguri and now at New Jalpaiguri in the plains in West Bengal and traverses tea gardens en route to Darjeeling, a hill station at an elevation of 2,134 metres (7,000 ft). The Nilgiri Mountain Railway, in the Nilgiri Hills in southern India, is also classified as a World Heritage Site by UNESCO. It is also the only rack railway in India. The Chatrapati Shivaji Terminus (formerly Victoria Terminus) railway station in Mumbai is another World Heritage Site operated by Indian Railways.

A Beyer Garrett 6594 Engine seen at the National Rail Museum

The Palace on Wheels is a specially designed train, lugged by a steam engine, for promoting tourism in Rajasthan. The Maharashtra government did try and introduce the Deccan Odyssey along the Konkan route, but it did not enjoy the same success as the Palace on Wheels. The Samjhauta Express was a train that ran between India and Pakistan. However, hostilities between the two nations in 2001 saw the line being closed. It was reopened when the hostilities subsided in 2004. Another train connecting Khokhrapar (Pakistan) and Munabao (India) is the Thar Express that restarted operations on February 18, 2006; it was closed down after the 1965 Indo-Pak war. The Kalka Shimla Railway till recently featured in the Guinness Book of World Records for offering the steepest rise in altitude in the space of 96 kilometres.

The Lifeline Express is a special train popularly known as the "Hospital-on-Wheels" which provides healthcare to the rural areas. This train has a compartment that serves as an operating room, a second one which serves as
a storeroom and an additional two that serve as a patient ward. The train travels around the country, staying at a location for about two months before moving elsewhere.

Among the famous locomotives, the *Fairy Queen* is the oldest running locomotive in the world today, though the distinction of the oldest surviving locomotive belongs to *John Bull*. *Kharagpur* railway station also has the distinction of being the world's longest railway platform at 1072 m (3,517 ft). To escape the heat, the British colonists loved to go to the mountains. The prospect of getting there faster prompted the building of the mountain railways with their "toy trains." Trips then became faster—that is, compared with going by horseback or being carried in a palanquin. For example, the "toy train" in south India takes its passengers into the Nilgiri Hills, or Blue Mountains. It averages 6.5 miles [10.4 km] per hour and is perhaps the slowest train in India. But what a journey this is, through the tea and coffee estates of the mountains up to *Coonoor at 5,617 feet [1,712 m]* Built in the late 19th century, the track rises at a gradient of 1 in 12 and has 208 curves and 13 tunnels. It employs the Abt pinion-rack system. Rack bars like teeth act as a ladder that the engine climbs on, pushing the train from the back. This track is among the oldest and steepest in the world using rack and adhesion technology.

The Ghum station along the Darjeeling *Toy Train* route is the second highest railway station in the world to be reached by a steam locomotive. Indian Railways operates 7,566 locomotives; 37,840 Coaching vehicles and 222,147 freight wagons. There are a total of 6,853 stations; 300 yards; 2,300 goods-sheds; 700 repair shops and a total workforce of 1.54 million. To reach Simla, which was India's 7,100-foot-high [2,200 m] summer capital under British rule, the train goes through 102 tunnels, crosses 869 bridges, and rounds 919 curves in a stretch of just 60 miles [95 km] One can see magnificent scenery through large windows and a transparent fiberglass roof. Yes, the "toy trains" are a real delight. Since the fares have been kept quite low, however, the mountain railways are unfortunately running at a loss. Railway buffs hope that a solution can be found to save these exhilarating trains.

The shortest named station is *Kb* and the longest is *Sri Venkatnarasimharajuvaripeta*. The *Himsagar Express*, between *Kanyakumari* and *Jammu Tawi*, has the longest run in terms of distance and time on Indian Railways network. It covers 3,745 km (2,327 miles) in about 74 hours and 55 minutes. The *Trivandrum Rajdhani*, between Delhi's Nizamuddin Station and
Trivandrum, travels non-stop between Vadodara and Kota, covering a distance of 528 km (328 miles) in about 6.5 hours, and has the longest continuous run on Indian Railways today. The Bhopal Shatabdi Express is the fastest train in India today having a maximum speed of 140 km/h (87 mph) on the Faridabad-Agra section. The fastest speed attained by any train is 184 km/h (114 mph) in 2000 during test runs. This speed is much lower than fast trains in other parts of the world. One reason attributed for this difference is that the tracks are not suited for higher speeds.

The Konkan Railway—A Modern Marvel: The Konkan is a strip of land, about 47 miles [75 km] at its widest, on the west coast of India, between the Arabian Sea and the Sahyadri mountain range. Extending south from Mumbai, India's commercial center, to the major port of Mangalore, the Konkan has much to offer in trade. For centuries the coastal ports handled this trade, within India and with other countries. But sea travel was hazardous—especially during the monsoon season, when rivers were also not navigable—and road and rail routes went way inland to circumvent many natural obstacles. The people of the region longed for direct land access down the coast to transport goods, especially perishables, quickly to big markets. What was the solution?

The Konkan Railway was the biggest railway project in the subcontinent in the 20th century. What was involved? Building 472 miles [760 km] of track with embankments up to 82 feet [25 m] high and cuttings 92 feet [28 m] deep. Constructing more than 2,000 bridges, including the 210-foot-high [64 m] Panval Nadi viaduct, the tallest in Asia, which spans a 1,640-foot-wide [500 m] valley, and the 1.3-mile-long [2.065 km] Sharavati River bridge. Penetrating the mountain ranges to give the track an alignment that was as straight as possible by excavating 92 tunnels, 6 of them being more than two miles [3.2 km] long. In fact, India's longest tunnel to date is one of these, the four-mile-long [6.5 km] Karbude tunnel.

The problems were immense—torrential rains, landslides, and mudslides, as well as tunneling through solid rock and, even more difficult, lithomargic soft soil, described as being like toothpaste. All these natural obstacles had to be overcome by engineering skill and technology. Centrifugal- and jet-fan ventilation in the tunnels, along with other safety features, were in themselves massive undertakings. Land had to be acquired from more than 42,000 different landowners, a colossal legal exercise.
However, on January 26, 1998, after a construction time of just seven years—a record for such a huge project—the first train on the Konkan Railway was flagged off. The journey from Mumbai to Mangalore was 700 miles [1,127 km] shorter than the former circuitous route, and travel time was reduced by 26 hours. The Konkan Railway opened up to train travelers new vistas of magnificent scenery, to tourists exciting new places to explore, and to millions of people an improved economy.

The Long Haul: It has been said that the advent of the railway in India marked "the end of one era and the beginning of another" and that "the railway sewed India together as no other integration scheme has managed to do since." How true! If you wish, you can board a train in Jammu, in the foothills of the Himalayas, and get off at Kanyakumari, India's southernmost point, where the Arabian Sea, the Indian Ocean, and the Bay of Bengal meet. You will have traveled 2,344 miles [3,751 km] through 12 states and spent about 66 hours on the train. You will have had the opportunity to get acquainted with friendly, talkative people of many cultures and will have seen quite a lot of this fascinating country.

EMERGENCE OF THE RAILWAY ZONES

In 1984, the Railway Reform Committee had proposed the creation of four new zones to cope with the growth of freight traffic across the country and to rationalize the traffic handling of IR. This proposal went nowhere. In the 1990s IR had been considering setting up more zones, ostensibly to improve administrative and operational efficiency. However, the final proposals which came out for new zones appear to have been motivated by politics as much as technical considerations of efficiency.

Six zones (East Coast Rly., East Central Rly., North Central Rly., North Western Rly., South Western Rly., and West Central Rly.) were proposed and approved in principle in July 1996 during the tenure of Ram Vilas Paswan as Railway Minister. Raipur was proposed as the headquarters of the East Coast Railway, but eventually Bhubaneswar was settled upon.

The South West Railway was originally to have been based at Bangalore, but later it was decided to make Hubli its headquarters (this involved a fair amount of agitation and political action in Hubli as well). The South East Central Rly. headquatered at Bilaspur was proposed in 1998 and approved in principle by the government in 1999.
Until mid-2002 not much had been done for these new zones yet beyond some contracts for office space and the appointment of some officers. In fact, in May 2000 the government had cancelled these staff appointments and there was talk of disbanding whatever little administrative structure had been put in place for these new zones. In March 2002, the South Western Zone was 'inaugurated' with some publicity, although there was no office space for the zone at Hubli; some staff at Bangalore were assigned to the new zone with, apparently, little to do.

Nothing really definitive was done about these new zones until June 2002, when the Railway Ministry announced that official notifications had been issued for the creation of two new zones: East Central and North Western. Some operational and administrative work for these officially began in October 2002. In July 2002, five more zones were officially created: East Coast, North Central, South Western, West Central, and South East Central.

These new zones have now come into effect and have begun functioning in earnest. The East Central and North Western zones have been reorganized somewhat again, as indicated below.

From late 2002, there have been reports of wagons and coaches being spotted with new zonal markings for several of the new zones. Train numbers still follow the old scheme with the numeric identifiers for the 9 older zones.

**The nine older railway zones are:**

- Northern Railway (NR)
- North Eastern Railway (NER)
- Northeast Frontier Railway (NFR, sometimes NEFR)
- Western Railway (WR)
- Southern Railway (SR)
- South Central Railway (SCR)
- South Eastern Railway (SER)
- Eastern Railway (ER)
- Central Railway (CR)

**The 7 new zones are:**

- South Western Railway (SWR)
- North Western Railway (NWR)
- West Central Railway (WCR)
- North Central Railway (NCR)
- South East Central Railway (SECR)
- East Coast Railway (ECoR)
- East Central Railway (ECR)
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<tr>
<th>Zone</th>
<th>Headquarters</th>
<th>Divisions</th>
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<tr>
<td>East Coast Railway</td>
<td>Bhubaneshwar</td>
<td>Khurda Road, Waltair, and Sambalpur divisions of SER</td>
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<tr>
<td></td>
<td></td>
<td>Bangalore and Mysore divisions of SR, reorganized Hubli division of SCR, including Hospet-Toranagall. (Earlier constituted to have Guntakal division of SCR as well.)</td>
</tr>
<tr>
<td>South Western Railway</td>
<td>Hubli</td>
<td>Jabalpur and Bhopal divisions of CR, reorganized Kota division of WR</td>
</tr>
<tr>
<td>West Central Railway</td>
<td>Jabalpur</td>
<td>Reorganized divisions: Allahabad of NR, Jhansi of CR, and new Agra division</td>
</tr>
<tr>
<td>North Central Railway</td>
<td>Allahabad</td>
<td>Nagpur division and reorganized Bilaspur division of SER, new Raipur division</td>
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<tr>
<td>South East Central Railway</td>
<td>Bilaspur</td>
<td>New zones that were created in 2002</td>
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<tr>
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<td>Jodhpur division and reorganized Bikaner division of NR, reorganized Jaipur and Ajmer divisions of WR</td>
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<td></td>
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<td>Sonpur and Samastipur divisions of NER, Danapur, Mughalsarai, and Dhanbad divisions of ER. (Was earlier constituted to have Katihar division of NFR as well.)</td>
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<td>North Western Railway</td>
<td>Jaipur</td>
<td>Old zones as they are after April 2003</td>
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<td>Bhavnagar and Mumbai divisions, reorganized Ratlam, Rajkot and Vadodara divisions, new Ahmedabad division</td>
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<tr>
<td>East Central Railway</td>
<td>Hajipur</td>
<td>Bhusawal and Nagpur divisions, reorganized Mumbai CST and Solapur divisions, new Pune division (including Pune-Kolhapur)</td>
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<tr>
<td></td>
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<td>Howrah, Malda, Sealghat, and Asansol divisions</td>
</tr>
<tr>
<td>Central Railway</td>
<td>Mumbai</td>
<td>Chennai, Palghat, Tiruchirapalli, Thiruvananthapuram, and Madurai divisions (a Salem division has been proposed [7/06])</td>
</tr>
<tr>
<td>Eastern Railway</td>
<td>Kolkata</td>
<td>Ferozpur, Ambala, Lucknow and Moradabad divisions, reorganized Delhi division</td>
</tr>
<tr>
<td>Southern Railway</td>
<td>Chennai</td>
<td>Lucknow and Varanasi divisions, reorganized Izzatnagar division</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reorganized Secunderabad, Hyderabad, Guntakal (including Bellary-Guntakal (MG) and Bellary-Rayadurg), and Vijayawada divisions, new Guntur and Nanded divisions.</td>
</tr>
<tr>
<td>Northern Railway</td>
<td>Delhi</td>
<td>Kharagpur division, reorganized Adra and Chakradharpur divisions, new Ranchi division</td>
</tr>
<tr>
<td>North Eastern Railway</td>
<td>Gorakhpaur</td>
<td>Katihar, Lumding, Tinsukia divisions, reorganized Alipurduar division, new Rangiy division</td>
</tr>
<tr>
<td>South Central Railway</td>
<td>Secunderabad</td>
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<tr>
<td>South Eastern Railway</td>
<td>Kolkata</td>
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<tr>
<td>Northeast Frontier Railway</td>
<td>Guwahati</td>
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</tbody>
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2000

- February: Indian Railways' web site deployed.
- Feb: 10 YDM-4's are reconditioned at Golden Rock and sent to Myanmar.
- Feb. 24: CLW begins manufacturing ABB's 6FXA 7059 3-phase traction motors.
- Feb: New lightweight passenger coaches supplied by Alstom LHB.
- May 10: First WAP-7 locomotive, 'Navkiran', from CLW.
- May 17: First indigenous WAP-5 (named 'Navodit') from CLW.
- May: Diesel-hauling of DHR train inaugurated.
- Bankura-Midnapore section electrified and MEMU services begin (June 30). MEMU services also begin on Arakkonam-Jolarpettai section (May 22).
- June 30: First WAG-9H loco, 'Navshakti', #31030, from CLW.
- Steam: Ooty 'X' class loco rebuilt and successfully steamed and run on trials (February). WP 7161 steamed for filming a motion picture, at Bombay; WP 7015 steamed, takes short train around New Delhi before returning to NRM (February). Steam-hauled train from Dehradun to Harrawala to commemorate the centenary of the Doon Railway (May).
- CONCOR starts dedicated container services: Shalimar - Chennai, Shalimar - Hyderabad, Cossipore - New Delhi.
- All-women 'Tejaswini' squads of ticket-checkers and police officers introduced for Mumbai suburban services.
- July 23: Trichur-Ernakulam section electrified.
- Oct. 30: Villupuram-Trichy linked by optical fibre telecom link.
- Nov. 22: New BG line between Penukonda and Puttaparthi.
- Successful trials with high-speed (100km/h) running of BOXN wagon rakes on the Gomoh-Mughalsarai section.
- New bridge over Ganga at Balawali (Saharanpur-Moradabad section).
- [Disaster] July 1: Howrah-Amritsar Express rams into an empty rake of the Saharanpur-Ambala Passenger between Ambala Cantt. and Ambala City after the latter stopped following a power failure. Two persons were killed. Signal and interlocking problems were cited as the reasons.
- [Disaster] Dec. 2: Howrah-Amritsar Mail collides with a derailed goods train between Sarai Banjara and Sadhugarh in Punjab. 46 are killed, 130 or so injured.

2001

- Jan 21: Freight services between India and Bangladesh officially resumed after a gap of 25 years, on the Petrapole-Benapole BG link.
- Following successful trials of the new Alstom LHB coaches at 160km/h, IR announces they will be used on the Delhi-Lucknow route (Swarna Shatabdi) (max. speed restricted to 140km/h).
- Feb. 12: Second WAP-7 loco, 'Navbharati', #30202, commissioned.
April: DLW delivers 10 BG locomotives (WDM-2 variants) to Bangladesh, and (later) 2 WDM-2 (? reported as 2300hp locos by IR) units to Sri Lanka.

May 17: In trials, a single WAG-9 hauls a 4700t rake of 58 BOXN-HA wagons at speeds up to 100km/h on the Sonenagar-Mughalsarai section.

MAWD 1798 steamed after restoration; first run is Guwahati-Pandu.

Converted AC-DC EMU rake with Alstom electricals used in trials on Borivli-Dahanu section, and then [June 12] AC-DC EMU service is officially inaugurated on the Churchgate-Dahanu section.

Four GM GT46PAC locos, classed WDP-4, arrive at Hubli.

DLW begins indigenous production of WDG-4 locos.

IRCON bags a contract for track doubling and electrification of the Ipoh-Padang Besar line in Malaysia.

July 12: The Maitry Express begins passenger service between Bangladesh and India.

August: The Rakesh Mohan Committee submits its report, recommending splitting IR into an operations body and a regulatory body, rationalization of fares, closure of unprofitable lines, a corporate approach to finances, manpower reductions, and an aim of privatization after 15 years.

December: All rail traffic between India and Pakistan is suspended following rising tensions between the countries (the Samjhauta Express is also cancelled as part of this).

A 2300hp Cape gauge diesel locomotive is manufactured by DLW for KTM Malaysian Railways.

Pendekallu-Gooty branch line opened.

IVRS ('Interactive Voice Response System') for telephonic enquiries about trains introduced in some stations.

[Disaster] June 22: Several coaches of the Mangalore-Chennai Mail fall into the Kadalundi river when the bridge at Parappanangadi near Kozhikode, at the time over a hundred years old, collapses. 64 persons die.

2002

Feb. 27: At least 59 persons are killed when a mainly Muslim mob sets fire to a coach carrying mostly Hindu activists in the Sabarmati Express at Godhra.

March 15: Indian Rail Archives inaugurated at the NRM.

March: South-Western Railway zone 'inaugurated' (but official notification of the new zone occurs in July, see below).

Jan Shatabdi trains come into service.

March 14: IR revamps classification codes for diesel locos.

April 9: First locally built WDG-4 locomotive (GM EMD GT46MAC) commissioned.

April 10: WR's air-conditioned EMU coaches have trial run between Churchgate and Dadar.

April 16: Various celebrations on the occasion of IR's 150th year, including steam runs with WP's at Mumbai.

May 15: Rewari steam shed re-commissioned.
• July 21: Upgraded WAP-7 trial successful.
• June 4: At least 30 persons travelling in a bus are killed as it is rammed by the Kanpur-Kasganj Exp. after the bus driver forces the bus through the closed safety gate of a level crossing.
• June 14: Orders passed for creation of two new railway zones: East Central and North Western.
• July 6: Orders passed for creation of five new railway zones East Coast, South Western, South East Central, North Central, and West Central.
• July 26: The first rake for the Delhi Metro is manufactured by Rotem, South Korea.
• Aug. 3: IR begins online train reservations and ticketing over the Internet.
• Sep. 17: First trial run of the Delhi Metro.
• Sep. 20: Six coaches of the Kolkata-bound Teesta-Torsha Exp. derail near Mahipal station but fortunately no-one is killed or seriously injured.
• Dec. 1: Internet ticket booking extended to more cities.
• Dec. 14: Narrow gauge railway museum inaugurated at Nagpur.
• Dec. 25: Delhi Metro opens for commercial operation.
• Dec. 29: Konkan Railway conducts a trial run of the Madgaon-Roha Express at 150km/h (briefly touching 165km/h at times) using a WDP-4 loco. Also in December (confirmation needed) NR is said to have run trials with a WDP-4 hauling at train at up to 180km/h on the Ghaziabad-Tundla section.
• Dec. 31: First trial run of a train run on 5% biodiesel blended fuel (Amritsar Shatabdi).
• [Disaster] May 12: Thirteen coaches of the New Delhi - Patna Shramjeevi Exp. derail near Jaunpur (between Kheta Sarai and Mehrawan) while traversing a bridge, killing at least 12 passengers.
• [Disaster] June 4: Thirty-four persons killed when the Kasgunj Exp. crashes into a bus at a level crossing.
• [Disaster] Sep. 9: New Delhi-bound Howrah Rajdhani derails at 130km/h on a bridge near Rafiganj in Bihar. One coach plunges into the Dhavi river, others are left suspended from the bridge. 130 are killed. Sabotage is floated as a theory, but the official inquiry also brings to light engineering problems.
• [Disaster] Dec. 21: At least 20 persons die after the Kacheguda/Hyderabad-Bangalore Exp. derails at 90km/h near Ramliangayapalli in Kurnool district (AP). 7 coaches overturn in the derailment.

2003
• Jan. 3: The Secunderabad-Manmad Exp. runs through danger signals and rams into a stationary freight train at Parli (300km west of Hyderabad), killing 14.
• DLW gets another order for YDM-4 locos from Vietnam (10 units).
• March: Trials conducted in the Delhi - Sarai Rohilla section for a new MG DEMU manufactured by RCF.
• April: The 7 new railway zones begin functioning.
April 26: First indigenously built WDP-4 (#20011) inaugurated at DLW.
August 9: Hyderabad/Secunderabad 'MMTS' train services begin with 13 Lingampally-Hyderabad services and 11 Lingampally-Secunderabad services each day.
August 20: The first indigenously manufactured 4-coach rake from BEML for the Delhi Metro is commissioned.
[Disaster] Jan 3: Kacheguda-Manmad Express rams into a stationary train near Ghatmandur (Maharashtra), killing 20 persons. The driver of the express and six other officials are suspended following a report citing human error.
[Disaster] May 15: At least 38 passengers die when fire breaks out in three coaches of the Amritsar-bound Golden Temple Mail (Frontier Mail) near Ladhowal station (near Ludhiana). A kerosene stove used in a coach by some passengers is said to be the cause.
The Presidential Saloon is used after a gap of 26 years.
[Disaster] June 22: An Ahmedabad/Mumbai-bound special train from Karwar derails after hitting boulders and debris from a landslide on the tracks just after Vaibhavwadi station, Ratnagiri region. 53 passengers are killed in what is KR's first fatal accident. KR is blamed by some for not having studied the stability of the landforms in the area adequately as well as for not patrolling the area thoroughly in the monsoon season.
[Disaster] July 2: 21 passengers of the Hyderabad-bound Golconda Exp. and several road travellers die when the train derails (locomotive and two coaches) just outside Warangal station, with the locomotive falling off the bridge and on to a road below. Brake failure coupled with overspeeding are cited as the cause.
[Disaster] Oct. 23: Seven die as five coaches of the Bangalore-bound Mysore-Bangalore push-pull train derail near Mysore. Faulty wheel discs from the Durgapur steel plant are said to be the cause.
Golden Rock's new oil-fired 'B' class loco(s) for the Darjeeling Himalayan Railway built and ready for trials.
Nov. 10: Centenary celebrations of the Kalka-Shimla Railway.
Dec. 15: Mumbai Rajdhani starts running with the new LHB coaches.
Dec. 13-21: Trials with weak field arrangement for MEMUs on the Tundla-Kanpur section of NCR. With a 'dense crush load' and stopping at all stations, a 4-car MEMU rake could decrease its total running time by 7% with a max. speed of 90km/h and 10% with a max. speed of 100km/h on the 228km section, because of the improved acceleration.

2004
January: The Railway Board is expanded by the introduction of two new Member posts, for Signalling & Telecom and for Stores.
Jan. 15: Samjhauta Express resumes running between India (Attari) and Pakistan (Lahore) twice a week. The rail link agreement of Jan. 2001 is extended through Jan. 2007.
• Jan 26: Second phase of Chennai MRTS, connecting Luz and Tiruvanmiyur, begins operations.
• May: Nine YDM-4 locos (ex-Sabarmati) are sold and sent to Togo Rail SA (Chemins de fer Togolais) (West Africa).
• June 30: SCR operates last MG train on the Nizamabad-Manoharabad line, bringing to an end MG services started in the 1930s on the Secunderabad-Manmad line of the Nizam's State Railways.
• July 1: Chennai area MG EMU services discontinued; last MG EMU runs from Egmore to Tambaram marking the end of 73 years of these stalwart trains. Also the day of the last YAM-1 run.
• July 12: First goods train from Kolkata (Calcutta) to Nepal using the Raxaul-Birgunj line.
• July: SCR begins using new aerodynamically designed DEMU rakes from ICF.
• July: Golden Rock workshops manufacture the second oil-fired steam loco, 'Himanand', for the DHR.
• July: Trial runs with a diesel loco running on bio-diesel blended fuel (Trichy-Tanjor Passenger).
• July 25: Two brass handles and four copper pipes were stolen from the *Fairy Queen* (EIR No. 22), the 149-year-old steam locomotive at the National Railway Museum, New Delhi.
• August: Thane-Thurbe-Vashi EMU services begin in Mumbai.
• Sep. 15: First public trial of KR's Skybus project in Madgaon, demonstrating the vehicle moving at 40km/h for a distance of about 1km.
• Sep. 15: First batch of improved flat wagons for CONCOR.
• Sep. 25: KR Skybus prototype has an accident where the coach crashes into a pier; one person is killed.
• Oct.: IR makes prototype standard-gauge bogies for possible export.
• Nov. 1: BG EMU Services inaugurated between Chennai Egmore and Tambaram on the newly converted BG line.
• Nov. 27: First successful run of Delhi Metro under ATO (first use of ATO in the country).
• Dec. 19: First underground section of Delhi Metro inaugurated (Delhi University - Kashmire Gate).
• Dec. 26: Indian Ocean tsunami washes away tracks on Nagore-Nagapattinam section.
• Luni-Barmer-Munabao section converted to BG in preparation for possible Munabao-Khokhrapar link between India and Pakistan.
• Preliminary approval granted for Mumbai MRTS light rail project.
• Gauge conversion of Purna-Akola section begins; this is the section that in 1960 first interconnected the MG networks of northern and southern India.
• December: Konkan Railway being considered for merger with IR.
• IR makes a move to open up the bookstall and catering business at its stations, ending the long reign of booksellers Higginbothams (in the south) and A H Wheeler (elsewhere) at railway stations in India.
- [Disaster] June 16: Twenty killed as Mangalore-Mumbai Matsyagandha Exp. derails between Karanjadi (Roha?) and Vir (Veer) stations in Maharashtra's Raigarh district on Konkan Railways, with the locomotive and two coaches falling off a bridge after a collision with boulders on the tracks.

- [Disaster] Dec. 13: A head-on collision between the Jammu Tawi - Ahmedabad Exp. and a DMU train on the Jallandhar - Pathankot single line between Bhangala and Mirthal stations leaves 38 dead and several injured.

2005
- Jan.: Boarding Rajdhani, Shatabdis, and Jan Shatabdis at intermediate points without reservations allowed.
- Feb.: Chawri Bazar station of the Delhi Metro is built with new technology of pre-cast concrete blocks for the platforms.
- Apr. 27: Jammu Tawi - Udhampur line in Jammu & Kashmir inaugurated and the Uttar Sampark Kranti from New Delhi to Udhamipur begins running. This line was sanctioned in April, 1980.
- Aug.: IRCTC introduces E-ticketing for IR on Aug. 12; ticketing by SMS begins on Aug. 26. A Frequent Traveller scheme is also under consideration.
- IR undertakes cultivation of Jatropha plants for production of biodiesel.
- Dec. 31: Delhi Metro's Barakhamba - Dwarka line opens.
- [Disaster] Feb. 3: Collision between Nagpur-bound Ramtek local and a tractor-trailer at the Bordan unmanned level crossing near Kanhan kills 55.
- [Disaster] Apr. 3: Howrah-bound Udyam Abha Toofan Exp. from Sriganganagar catches fire between Darauli and Dildarnagar stations. Five coaches are completely gutted in the blaze, but there are no casualties. The driver of a passing goods train notices the fire and alerts the driver of the Toofan Exp. who makes an emergency stop, allowing the passengers to escape.
- [Disaster] Apr. 21: Ahmedabad-bound Sabarmati Exp. from Varanasi rams into a stationary goods train at Samlaya, between Vadodara and Godhra, killing 17 passengers. Signal and interlocking failures during maintenance and a failure to follow the appropriate backup procedures are thought to have caused the mishap.
- [Disaster] Oct. 3: Twelve persons killed and many injured when six coaches of the Bundelkhand Exp. derail and ram into a railway control cabin near Datia, MP.
- [Disaster] Nov. 9: Three killed and many injured as a goods train runs into a passenger train near Jharkhand's Barwadih station, about 170km from Ranchi.

2006
- Feb. 15: New Delhi - Bhopal Shatabdi cleared for running at 150km/h commercial speed on the New Delhi - Agra Cantt. stretch.
• Feb. 17: Thar Express service begins with the train on the Indian side running from Jodhpur to Munabao with the connecting train on the Pakistan side running from Karachi to Khokhrpar to Munabao to connect.
• Feb. 19: Igatpuri - Kasara section switched from DC to AC traction.
• Feb.: 100km/h trials with Mumbai EMUs (however, this is not the first time trials have been conducted at these speeds).
• March 24: Regular double-stacked container service (on BLCA/BLCB flat wagons) begins on the Pipavav - Jaipur route.
• May - July: Telescopic fares withdrawn in Railway Budget and restored in July.
• [Disaster] Jul. 11 : Seven bombs go off nearly simultaneously at different places on WR's EMUs in Mumbai during the evening rush hour, killing 181 persons and injuring nearly 900.
• [Disaster] Dec. 2 : A 150-year-old brick and masonry bridge over a railway line collapses on a running train at Bhagalpur, killing at least 47 as the debris crushed a passenger coach. The bridge was in the process of being dismantled.