

## **Top Technology that Modernized Indian Railways**

Indian Railways is one of the oldest and largest railway networks in the world, covering more than 68,000 kilometers of track and connecting almost every corner of the country. Indian Railways was founded in 1853, just a few years after the invention of the first steam locomotive, and has become India's most useful transportation infrastructure. Over the years, it has made many technological advances to modernize its operations and provide better services to passengers.

## **Major Technological Advancements of Indian Railways**

Here is a list of Indian Railways' top technology revolutions that have modernized the railway systems.

### **Online Ticket Booking System**

The establishment of a computerized reservation system by Indian Railways is one of the most important technical adjustments. Train travelers can use it to buy reserved and unreserved train tickets online, cancel train tickets and request refunds. Previously, with the traditional ticket reservation system, train travelers had to wait in long lines or connect with agents to book a train ticket. But today this is not the case.

The IRCTC e-ticketing website and the Rail Connect app allow passengers to use the online ticket booking process by creating an account on the official IRCTC e-ticketing website. Introduction of online ticket booking makes ticket booking process convenient for rail travelers and reduces crowds at Indian Railways stations

### **Bio-Toilets**

The introduction of bio-toilets in train carriages is one of the great technical revolutions to standardize the Indian railway system. The traditional system of railway toilets raises the problem of open defecation along the tracks.

Biological toilets use anaerobic bacteria to convert human waste into water and gas and prevent human extracts from falling on the train tracks, making the process environmentally friendly. The bio-toilet system has improved hygiene and reduced maintenance costs for Indian trains and stations.

## **Wi-Fi Connectivity**

The largest rail network, Indian Railways, provides rail travelers with one of the most modern facilities: Wi-Fi connectivity, which enables travelers to connect to the Internet to use social media, surf the web, and keep in touch with their friends. Friends and family during your trip. Journey.

The Wi-Fi facility is especially useful for business travelers who need to work on the go and students who want to learn online on the go. Also, travelers can get more information about their train journey online. Indian Railways free Wi-Fi connectivity is available at more than 6,000 stations across the country.

## **GPS-enabled Train Tracking System**

The introduction of Indian Railways' GPS tracking systems is another milestone in transforming the travel experience for passengers. It allowed travelers to track the real-time location of their trains. It helps them to know the current location of the train and calculate the estimated time to reach their destination.

Live train running status also helps passengers to know exactly when the train will arrive at their boarding and disembarking stations. Also, trains get diverted due to fog or other unusual circumstances. The GPS tracking system informs passengers of the train's route and can plan accordingly.

## **Automatic Block Signaling System**

The railway is divided into sections or blocks. Automatic block signaling axle counters are installed at the end of each section, detecting the presence of a train and controlling signals that allow the train to enter the next section safely.

Automatic Block Signaling System (ABS) is used in railways to ensure trains do not collide and allows Indian Railways to run more trains on the same track.

## **LHB Coaches**

Indian Railways supports LHB carriages in the fleet of 400 Vande Bharat trains. LHB coaches are lighter, stronger and more comfortable than ICF coaches. They also have higher security features and can support higher speeds.

Indian Railways will gradually replace its former Integral Coach Factory (ICF) with Linke Hofmann Busch (LHB) coaches by 2025-30.

### **Digitalization in Railway System**

Whether you want to book your station pickup or pack your goods on freight trains, you can do everything online. Now for all Indian Railways requirements you no longer need to visit the stations. If you have an accident, you can also file a report online.

Indian Railway System has inbuilt many scanning facilities which help passengers to check train ticket status online, know train timetables, find live train locations, catch Rail Madad and much more again through a train app or a website. In addition, train passengers can order their favorite meals through Travelkhana and have them delivered directly to their seat.

### **Introduction of Futuristic Trains**

Indian Railways has introduced semi-high-speed trains like the Tejas Rajdhani Express and the non-powered, self-propelled Vande Bharat Express, which can travel at a maximum speed of 160-180 km/h, to facilitate the movement of passengers, saving them time.

In addition, Indian Railways is also working on the bullet train project. Apart from this, Indian Railways has introduced CNG and solar powered trains to make rail travel more eco-friendly.

### **Smart Amenities for Railway Stations**

Indian railway stations with a daily frequency of more than 100,000 people have received the installation of escalators and elevators. It facilitates the movement of goods from one platform to another and allows passengers to cross the tracks with ease.

In addition, the station also has modern amenities such as fully equipped waiting rooms, cafeterias, bookstores and much more. Also, Indian Railways is working on building world-class railway stations using the PPP model. Rani Kamlapati Railway Station, RKMP is India's first world-class railway station.

### Electrification of Railway Tracks

Indian Railways is making significant progress in upgrading its rail infrastructure to support high-speed rail and freight transport in India. To achieve this, the rail system is developing special freight corridors exclusively for freight trains, while expanding track gauge.

In addition, track electrification will be implemented to increase the efficiency of train operations. Also, Indian Railways doubles the tracks to ensure fewer train delays and less congestion.

Using advances in technology, Indian Railways aims to make rail travel comfortable and modernized.

### **How technological advancement is easing train journeys?**

The integration of the technology in Indian Railways makes the system work smoothly thus ensuring the safety of the passengers. In addition, it also facilitates Indian Railways maintenance works like detecting train faults, optimizing train schedules and many more.

Only with these technological advances are passengers able to check trains between stations to plan their journeys, get current train running status, train arrivals and departures and much more online. They can even order a travel meal on the train through Travelkhana.

Travelkhana is a technically compliant application that helps rail travelers get online current trip status, timetables and much more.