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TRAIN TO KASHMIR
A SCENIC ODYSSEY

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Awe, Kashmir!

Thanks to remarkable feats of engineering, Kashmir is finally connected to the rest of India by rail

BY TARIQ BHAT

AFCONS INFRASTRUCTURE

MARVEL IN STEEL
The Chenab Bridge, located between Kauri and Bakal in Reasi, is the highest railway bridge in the world

For decades, Kashmir remained hidden behind its challenging geography and rugged terrain, accessible only through arduous road journeys. Now, with human ingenuity and skilful engineering, the region is finally connected to the rest of India by rail.

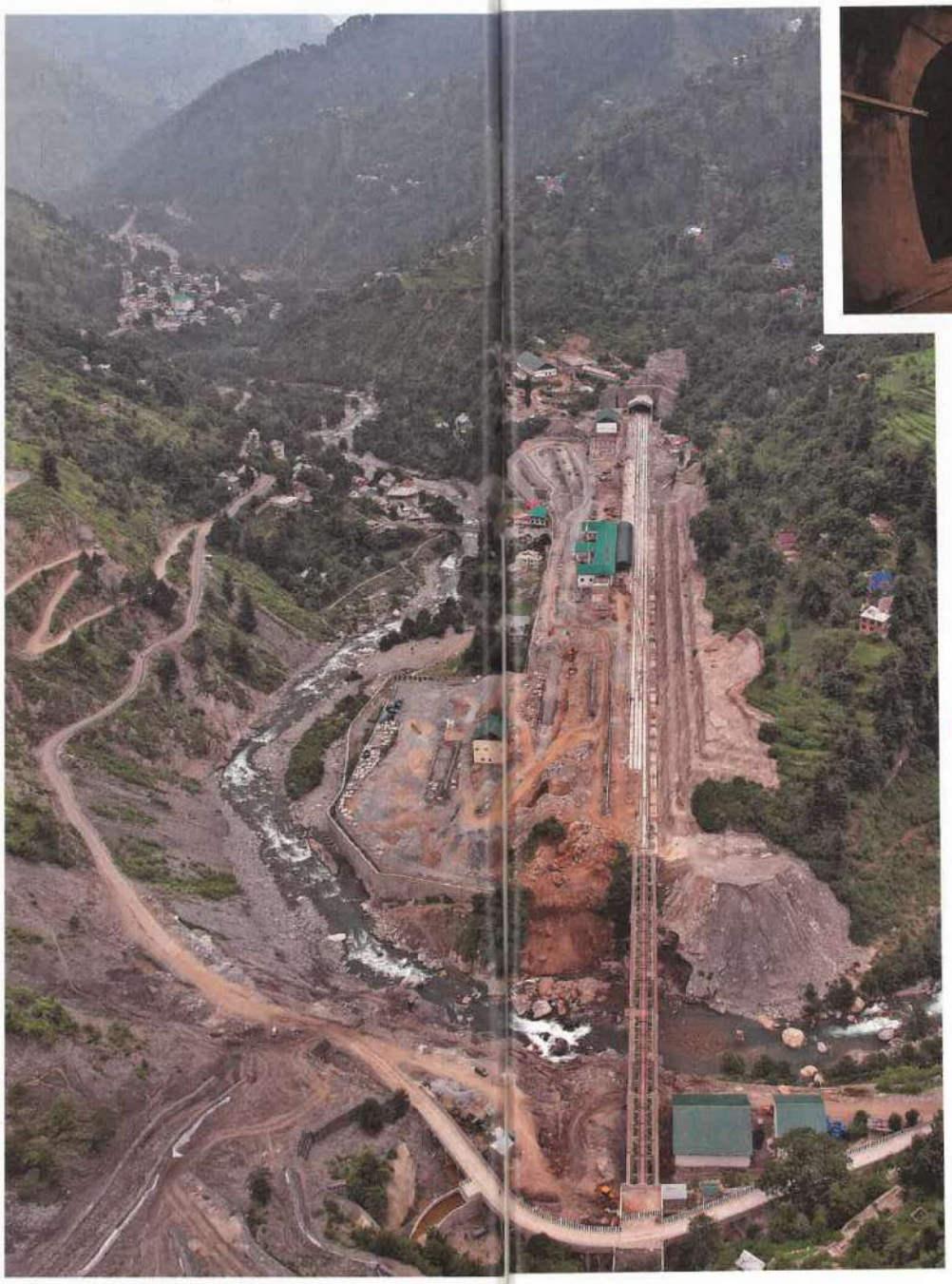
The dream of a railway link took root more than a century ago. In 1890, the British constructed a 43-kilometre railway line from Sialkot, in present-day Pakistan, to Jammu. This vital connection was severed during the partition of 1947, abruptly halting an essential transport link. It was not until 1966 that Indian Railways extended its reach into Jammu and Kashmir by starting work on the Kathua-Jammu section, completed in December 1972.

Construction of the Jammu-Udhampur rail line began in 1995, and it was inaugurated on April 13, 2005, reigniting hopes for a railway connection to Kashmir. Beyond Udhampur, extending the rail line posed significant challenges. It required boring dozens of tunnels through the Himalayas, including the Patni and Pir Panjal ranges, spanning bridges across rivers like the mighty Chenab, and building hundreds of kilometres of access roads to transport men and machinery.

A breakthrough came in 1994 when the Union government approved the ambitious 272-kilometre Udhampur-Srinagar-Baramulla Rail Link (USBRL). Initially budgeted at ₹37,012 crore, the cost later escalated to over ₹43,000 crore. The project was deemed vital for addressing regional challenges and fostering integration with the rest of the country. In 2002, prime minister Atal Bihari Vajpayee laid the foundation stone, designating the USBRL as a "national project."

The project was divided into three sections: Udhampur-Katra (25km), Katra-Qazigund (129km), and Qazigund-Baramulla (118km). The first milestone, relatively less challenging, was the completion of the Qazigund-Baramulla section, which became operational in phases between 2008 and 2009. Another landmark was the inauguration of the 18-kilometre Banihal-Qazigund stretch in June 2013. Part of the Katra-Qazigund link, this stretch included the 11.2-kilometre Pir Panjal Tunnel (T80), India's second-longest railway tunnel. Cutting through the Pir Panjal range, this engineering wonder eliminated Banihal's seasonal isolation, particularly during harsh winters when landslides rendered the Srinagar-Jammu national highway impassable. At an elevation of 1,702 metres, Banihal serves as the gateway to Kashmir Valley.

"Before the train, visiting my doctor in Anantnag was an all-day affair, filled with uncertainty," said Assadullah Mir, a hypertension patient. "Now, I can visit him and return within hours."



PHOTOS AFCONS INFRASTRUCTURE

THROUGH THE MOUNTAINS
The line leading to T49, India's longest railway tunnel at 12.75km; (above) inside view of the tunnel

Education, too, has become more accessible. Mushtaq Ahmed, a resident of Banihal, credits the rail link for helping him pursue his dreams. "After failing to crack NEET exams, I joined a coaching centre in Srinagar," he said. "The train has made it possible for students like me."

Muhammad Rafiq, a government teacher from Banihal, said the train has transformed lives. "It's hard to believe we once walked 10km to school, carried rations over long distances, and the nearest bus terminal was 50km away," he said. "Today, we can travel to Anantnag and return home the same day."

Improved connectivity has enhanced the quality of life for many. Lecturer Farooq Ahmed now commutes daily from Banihal to Srinagar. "Earlier, I lived in Srinagar on rent. Now, the train allows me to stay with my family," he said.

In Anantnag district, home to scenic destinations like Pahalgam and Daksum, and famous gardens such as Achabal and Kokernag, the train makes a brief stop amid picturesque surroundings. At the station, Mushtaq Ahmed Bawani from Achabal bid farewell to his daughter Mehrun Nisa, a nursing student travelling to Ramban. "The train has made travel not only affordable but also safe, especially for women," he said. Mehrun Nisa agreed. "It has eliminated the uncertainty of road journeys caused by bad weather and the exploitation by hoteliers," she said.

In July 2014, the inauguration of the 25-kilometre Udhampur-Katra section provided devotees direct, year-round access to the Shri Mata Vaishno Devi Shrine. The influx of devotees has since increased manifold. A group of devotees from Ahmedabad said the rail link had made their trip "easy and pleasurable". Satish Patel, one of the devotees, said they were excited

SANJAY AHLAWAT

TRAIN COMES TO TOWN
A view of the Sangaldan railway station in Ramban district

about the project's progress. "It will be fun to travel through the tunnels to Kashmir in a train," he said.

The rail link was built by overcoming extraordinary challenges. The Pir Panjal ranges stood defiant, their slopes prone to landslides and their core susceptible to seismic shivers. Gorges, valleys and rivers roaring through chasms made the task harder. To traverse this terrain, engineers built 25 tunnels with a total length of 97.42km (87.8 per cent) and 49 bridges with a total length of 7.04 kilometres (6.34 per cent). To comply with safety norms, eight parallel escape tunnels, measuring 66.4km in length, were also built, with cross passages connecting the main and escape tunnels every 375m in longer sections.

A decade-long battle against wilderness culminated in a masterpiece of engineering—the Chenab Bridge, the highest railway bridge in the world, located between Kauri and Bakal in Reasi. Stretching 1,315m across the Chenab River, its towering arch rises 359 metres above the riverbed, surpassing the Eiffel Tower. Since the bridge is in a seismically high-intensity zone, it is engineered to withstand earthquakes measuring 8 on the Richter scale, winds of up to 266kmph, and high-intensity explosions. Over 25,000 tonnes of steel and 46,000 cubic metres of concrete were used to shape its arch. "This bridge is not just an engineering feat; it is a symbol of resilience, a golden chapter in India's story," said Giridhar Rajagopalan, deputy managing director of Afcons Infrastructure Ltd, which constructed the bridge.

Earlier, villagers had to cross the Chenab on boats and trek long distances. "It was a circuitous route, taking several hours to cross the river and reach our destination," said Meeshu Ram from Lamsora village in Reasi district, who was travelling with his wife, two sons, daughter-in-law and grandson to visit relatives in Bakal, a village 22km away on the opposite side of the river. "The Chenab bridge has made travel much easier." Devi, Ram's wife, said the bridge had brought people closer. "Women who were married outside their villages now visit their parents and siblings more often," she said.

Abdul Hamid of Judda village highlighted the economic benefits. "A lot of people work as labourers, contractors or drivers. In my village alone, more than 1,000 people have found work because of this project," he said.

SANJAY AHLAWAT

CHANGING LIVES
Passengers at the Banihal station, which serves as the gateway to Kashmir Valley

Muhammad Nayeem of Baladda said the bridge was driving social interactions and business opportunities. "People from neighbouring villages now meet each other easily to discuss matters like marriages or trade. Earlier, the route was so long that such meetings were rare," he said.

A few miles away, another architectural wonder, the Anji Khad Bridge, India's first cable-stayed rail bridge, rises above the Anji river flowing between mountains in Reasi. Built by Hindustan Construction Company (HCC), it spans 725m and is supported by a single 193m-high pylon, making it unique in design. "Unlike traditional bridges, it relies on 96 evenly distributed cables for support, reducing the need for extensive structural fabrication," explained an HCC engineer. "Only 10,000 metric tonnes of material were used. These cables, 18.2mm thick, have three coatings: wax, zinc and high-density polyethylene for durability." He said the cables, imported from Slovakia, were rigorously tested, and the technology is now locally sourced.

According to Sandeep Gupta, chief administrative officer of USBRL, a design similar to the Chenab Bridge was initially considered. However, the topography and space constraints at the Katra end of the bridge made it unfeasible. "The cables used are high-tensile steel (HTS), tested rigorously for fatigue resistance (up to two million cycles)," he said. "The bridge underwent wind tunnel testing in Canada and Italy to ensure stability against high winds and gusts (213kmph)."

Beneath the towering Pir Panjal mountains, engineers achieved remarkable feats by constructing India's three longest twin-tube rail tunnels, comprising a main tunnel and an escape tunnel. Among these is T49, India's longest railway tunnel at 12.75km, with an escape tunnel stretching 12.895km, surpassing the T80 as the longest. Connected by 33 cross-passages, T49 links Sumber and Arpinchala in Ramban and was completed by HCC and Afcons after more than a decade.

The third and fourth longest tunnels, T15 (11.25km, between Sangaldan and Basindhaar) and T48 (10.25km, between Dharam and Sumber) have also been pivotal in extending train operations beyond Banihal to Sangaldan. T15 was constructed by Patel Engineering and its joint partner AGE, while T48 was executed by Gammon Engineers and Contractors Private Ltd through IRCON.


SANJAY AHLAWAT

Currently, the Sangaldan station marks the starting point of a 184-kilometre scenic odyssey, where each season transforms the landscape into a living postcard. In winter, the station and surrounding mountains are enveloped in snow, creating a serene, white wonderland. In summer, the greenery and cool mountain breeze create an idyllic setting.

Passengers arrive at the station and walk downstairs to reach the platform, nestled between two tunnels on opposite sides. A lift is available for the elderly and those with health concerns. As the train rolls into Sangaldan from Baramulla, railway staff and the Railway Protection Force help passengers who need assistance. Among them is Zulikha Bibi, who emerges from the lift in a wheelchair, warmly greeted by an RPF officer from Lucknow.

Abrar Ahmad, a 30-year-old resident of Sangaldan, recalled the struggles before the train service. "It would take us three hours to reach Banihal, the nearest township, 48km away, during fair weather," he said. "In winter, travelling to Banihal was risky because of landslides and falling rocks, especially at Digdol. Traffic jams on the Srinagar-Jammu highway made things worse."

On January 7 and 8, speed trials were conducted on the rail line. At 10:30 am, the trial train departed Katra station. In just an hour and a half, the train glided into Banihal station. After a brief pause, the return journey began at 2pm. (Currently, there is no direct train from Kashmir to Delhi. Passengers from Kashmir have to undergo security check at Katra station before boarding a Delhi train.)

NEW LINKS
The Anji Khad Bridge, India's first cable-stayed rail bridge

For the new route, the Indian Railways has readied special Vande Bharat trains that are equipped with state-of-the-art technology, including climate control to battle the frigid Kashmir winters. With its breathtaking views, the train journey to Kashmir promises to be a truly unforgettable adventure.