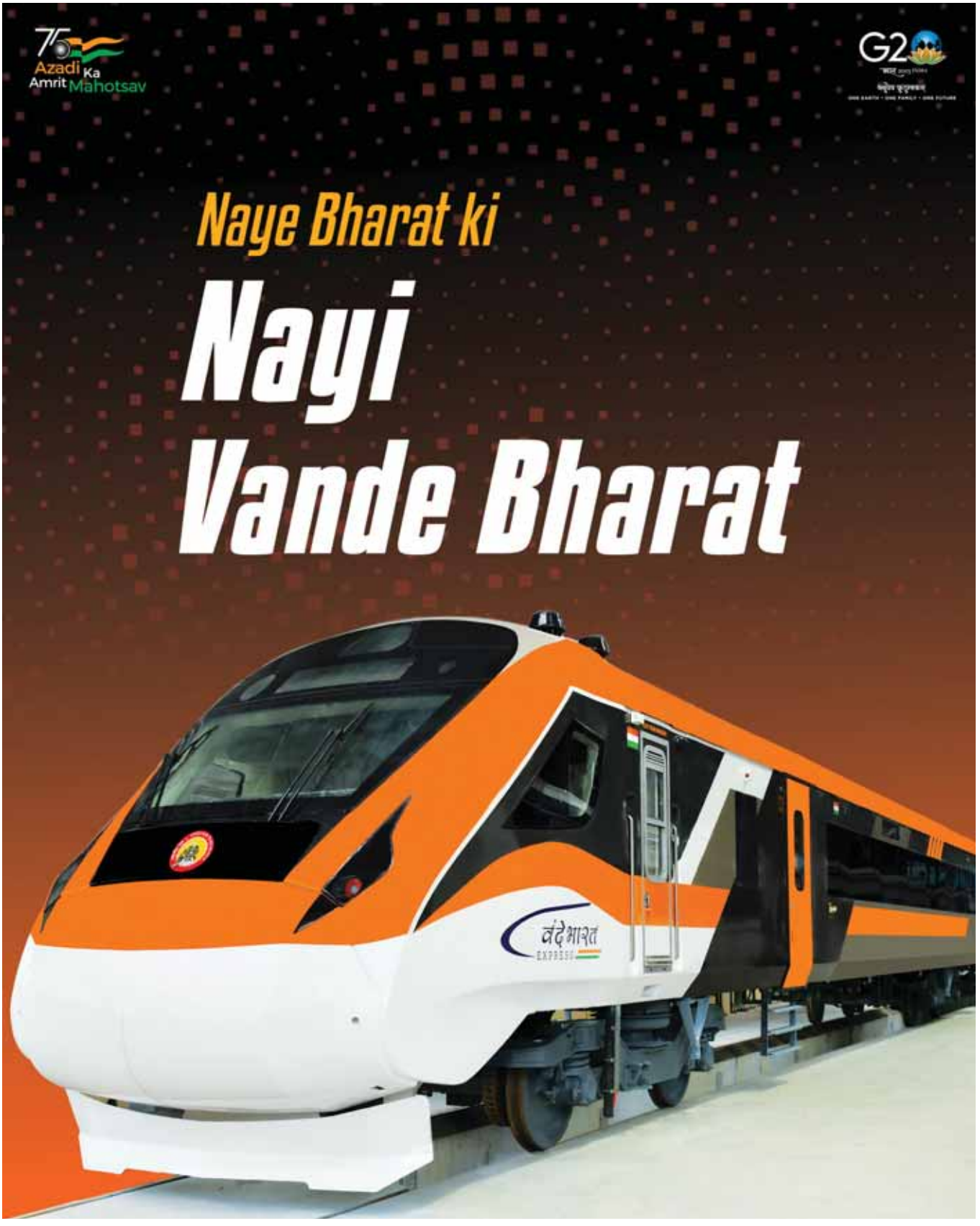
INDIAN RAILWAYS

AUGUST 2023

PRICE ` 20





The Railway Employees' Co-operative Credit Society Limited,

Ashok Vihar Complex, Old Zoo Road, (Near Central Railway Station) Chennai - 600 003.

Branches at : ASK, BVRM, BWT, BZA, DMM, GDG, GNT, GTL, GY, HX, HYB, JRU, KZJ, LD, MBNR, MRJ, MYS, NDKD, NDL, NLR, OGL, PUNE, RJY, SBC, TPTY, TUNI, UBL, WADI & YNK.

New Branches to be opened at : Solapur & Nanded.

Dr.N. KANNIAH, Ph.D.,
Chairman

Started in the year 1907 and successfully serving the members for the past 116 years

Any Railway Employee who has completed Three months of regular service can join as a member and can avail Loan, after receipt of 3 CMTD recoveries through salary.

The following loans are offered by our Society to the Member's

General Loan

❖ upto Rs.24.00 Lakhs ❖upto 108 EMI
❖ One Surety

Marriage Loan

❖ upto Rs. 9.00 Lakhs ❖upto 108 EMI
❖ One Surety

Education Loan

❖ upto Rs.1,00,000/- ❖ upto 12 EMI
❖ No Surety

Tour Loan

❖ International Tour for Member & family
❖ upto 108 EMI ❖One Surety

Special Loan

❖ upto Rs.4,00,000/- ❖ upto 60 EMI
❖One Surety ❖for Festival & Family Functions

Gold Loan

❖ upto Rs. 5.00 Lakhs
❖ upto 108 EMI
❖ One Surety
❖ Gold and Silver Coins from M/s.MMTC-PAMP India Pvt. Ltd.

50 Grams Silver Coin
Stylised Laxmi Ganesh
Colour Coin Capsule Type



10 gm - 24 Ct Gold Coin



20 gm - 24 Ct Gold Coin



Member Welfare Schemes :

❖ Loan Coverage Scheme
(Free Loan Insurance Scheme for all Loans)
❖ Personal Accidental Insurance Coverage
❖ DRF Scheme
❖ Education Awards to Children of the Members

Under the 4 Welfare Schemes, as on 28.02.2023

Rs. 145.26 Crores

have been paid to
19,072 Members, Member's Families and Sureties

The Only Society Paying Dividend Continuously without fail for 116 Years.

No
- Documentation Charges
- Online Transfer Charges
- Pre Payment Charges
- Pre Closure Charges

New Schemes :
Loan for Purchase of House Site, Insurance Policies, Mediclaim Policies & Housing Loan

Free SMS Alert for
- EMI Received / EMI Not received details
- Monthly Statement of Account details
- Introduction of New Schemes details
- Loan amount transfered to Bank Account details with RBI UTR No.

All our Branches are Computerised, Loan Applications received upto 12.00 noon at the branches will be processed and the payment will be arranged on the following day itself, subject to eligibility. All loans, Schemes etc., are as per the rules, regulations, Byelaws and MSCS Act 2002.

To Know the Loan Application status / Account details, Members can contact Head Office directly, through Video Calling (Zoom/Whatsapp) facility. To obtain the User ID/Password Link, please contact No.7824820170.

For enquiry Contact
08148387240, 08148387241, 08148387242, 07418148957

N. MANIVANNAN
Chief Executive

INDIAN RAILWAYS

Price : `20 | SINCE 1956 | August 2023 | Vol. 67 No. 05

EDITORIAL BOARD

Shri Anil Kumar Lahoti
Chairman & Chief Executive Officer

Ms. Anjali Goyal
Member Finance

Shri Milind K Deouskar
Secretary

Shri Shivaji Maruti Sutar
Director (I&P)

Yogesh Avasthi
Editor

Editorial Correspondence
Editor, Indian Railways
411, Rail Bhawan, New Delhi-110001
Email: editorindianrailways@gmail.com

Business Communications
Lalit Kumar Dhankar
Business Manager Indian Railways,
310, Rail Bhawan, New Delhi-110001
Tel : 47845378, 45378 (Rly.).
011-47845089, 45089 (Rly.)
Email : bmpr310rb@gmail.com

Editorial Assistance
Geeta Srikala

Cover Photo
THE NEW
VANDE BHARAT TRAIN

Unless specifically mentioned, the articles and statements published in this journal do not necessarily reflect the views and policies of the Ministry of Railways (Railway Board).

ANNUAL SUBSCRIPTION

(Offline)

INDIA
`250 (`200 for Railwaymen)

FOREIGN
`1250 (Sea Mail)
`2500 (Air Mail)

SINGLE COPY : `20
SPECIAL ISSUE : `70

5 **Hon'ble PM Flagged Off Gorakhpur-Lucknow and** Jodhpur-Ahmedabad Vande Bharat Express

6 **Hon'ble PM Inaugurated and Laid Foundation Stone** of Multiple Development Projects in Varanasi

7 **Hon'ble Prime Minister Laid the Foundation Stone of** Railway Manufacturing Unit, Kazipet

8 **Hon'ble PM Dedicated to The Nation Various Rail** Development Projects in Raipur

8 **Hon'ble PM Laid the Foundation Stone and** Dedicated Development Projects in Bikaner

9 **Railway Minister visited ICF and Inspected** the New Vande Bharat Train under Production

10 **Minister of Railways held Performance Review** Meeting of Three Zonal Railways at Kolkata

11 **MR Inspected Howrah Maidan to Esplanade** Stretch of East-West Metro

11 **MoSR Inspected Pakur & Murarai Stations**

12 **MoSR Flagged Off the Newly Converted** LHB Rake of Flying Ranee Express

12 **Agartala-Kolkata Special with Modern** AC LHB Rake Flagged Off

13 **9th International Day of Yoga** Celebrated in Indian Railways

19 **Batch of Indian Railway Traffic Service Probationers** Passed out with Flying Colours from IRITM, Lucknow

21 **IR Adopts Innovative Approach of linking Popular** Area with Station Name for Passenger Convenience

22 **Central Railway AC Local Carried** 49.47 lakh Passengers from April to June 2023

23 **Newly Constructed National Martyr's Memorial** Unveiled at Jagjivan RPF Academy Lucknow

24 **Railway Protection Force Cracks** Down Heavily on Offenders Across the Country

25 **Railways In Parliament**

37 **NHSRCL Awards Last Civil Package for MAHSR Alignment in** Maharashtra 100% Civil Contracts Awarded for MAHSR Corridor

41 **Zonal Railways and Production Units News**

44 **SPORTS**

47 **Transforming into World Class Railway Stations**

48 **Progress Report**

58 **A Dream Comes True Chenab Bridge** *Shri Prem Sagar Gupta*

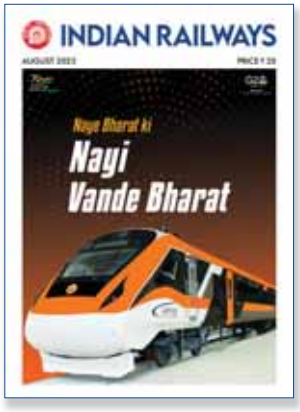
60 **Human Factors in Railway Operations** *Shri Manoj Kumar Sinha, Smt. Garima Srivastava, Dr. Miny Chandra*

65 **A Series on Know Your Railway Pointsman** Shri B. Guganesan

67 **Green Buildings** Shri Ramachandran. V

69 **Rail Saurabh Club, Jabalpur My Club of Dreams** Shri Sanjeev Tiwari

Editorial



Coloured in vibrant colours of saffron, white and black, the Vande Bharat Express of new India will soon be seen running on the railway tracks of the country. There are many important changes that have been made in the train to remove the drawbacks by getting the suggestions from the experts as well as the travellers. Recently, the Railway Minister Shri Ashwini Vaishnav inspected the new Vande Bharat train set during his visit to ICF. It is noteworthy that Indian Railways will soon be able to get on track the Vande Bharat (sleeper) and Vande Metro coach and it is working at a war footing in this regard.

There are approximately 25 technical changes that have been made for the safety and convenience of the travellers of the Vande Bharat Express. A few of them are: to exceed the seat decline angle, better cushion for seats, better mobile charging points in comparison to prior, wash basin with increased depth to avoid splashing of water, better lighting in toilets, provision of fixing points for wheel chair for divyangjan passengers in the driving trailer coaches, change of reading lamp touching from resistive touch to capacitive touch for easy use, better roller blind fabric etc.

Citing the best example of 'Made in India', 50 Vande Bharat Express (till 21st July 2023) are connecting each and every corner of the country. Because of the ultramodern facilities and speed, regular growth in the number of passengers are noticed. During the financial year 2023-24 (upto June 2023) the total occupancy of Vande Bharat train is 99.60%.

Even in the worst circumstances, Indian Railways is discharging its social responsibilities very well. The supply of essential commodities to Manipur was disrupted in the recent period. With the help of State Government on 24th July, 2023, the Northeast Frontier railway has supplied the essential goods and commodities to Khongsang station of Manipur by a goods train.

Khongsang station is established as part of Jiribam-Imphal new rail line project. Shri N. Biren Singh, Chief Minister of Manipur welcomed the goods train which arrived for the very first time at this station. The piecemeal re-booking of wagons has been granted on the special request of Manipur government.

The Bhartiya Rail Magazine is completing its 63 years. The first issue of Indian Railways was published in 1956 and the first issue of Bhartiya Rail was published in 1960. From then onwards these Magazines are providing the information regarding the developmental works in the Indian Railways regularly. The valuable suggestions given by the readers are carried out in the Magazines. Now you can avail the subscription of these magazines online also.

Please share your feedback with us. We shall be waiting.....

Hon'ble PM Flagged Off Gorakhpur-Lucknow and Jodhpur-Ahmedabad Vande Bharat Express



Hon'ble Prime Minister, Shri Narendra Modi flagged off two Vande Bharat Express at Gorakhpur Station. Governor, Uttar Pradesh, Smt. Anandiben Patel and Chief Minister, Shri Yogi Adityanath were also present

On 7th July, 2023 Hon'ble Prime Minister Shri Narendra Modi flagged off two new and upgraded versions of Vande Bharat Express trains at Gorakhpur Station in Uttar Pradesh. During the event, Governor, Uttar Pradesh Smt. Anandiben Patel; Chief Minister, Shri Yogi Adityanath; Gorakhpur MP, Shri Ravi Kishan Shukla, public representatives and special guests were also present at the venue.

Gorakhpur-Lucknow Vande Bharat Express

With the operation of Vande Bharat Express, the connectivity of Gorakhpur and Lucknow and nearby religious places and tourist places will increase, as well as the all-round development of the region will also enhance. This route will also fulfill the long demand of connectivity between the religious towns.

Jodhpur-Ahmedabad (Sabarmati)

Rajasthan's Jodhpur-Ahmedabad (Sabarmati) Vande Bharat Express will depart from Jodhpur Railway Station and reach Ahmedabad (Sabarmati) station the same day with stoppage at Pali Marwad, Ranakpur and Abu Road. It will facilitate easy and fast travel, and become an important medium to connect the culture, tourism and pilgrimage places of these regions.

Prime Minister also laid the foundation stone of Gorakhpur Railway Station redevelopment. The station will be redeveloped at a cost of around `498 crore and will provide world class passenger amenities.

Vande Bharat Express trains offer a myriad of superior amenities which will provide passengers with world class comfortable travelling experience and advanced state-of-the-art safety features including KAVACH technology. Each train has been provided with bogies having fully suspended traction motors for 160 kmph operational speed. The train has been designed to increase Indian Railways' Green footprint by dispensing with the power cars and saving about 30% electricity with advanced regenerative braking system.



Shri Narendra Modi, Hon'ble Prime Minister interacted with the school children in the Vande Bharat Express. Also seen are Smt. Anandiben Patel, Governor and Shri A.K. Lahoti, Chairman & CEO/Railway Board

Hon'ble PM Inaugurated and Laid Foundation Stone of Multiple Development Projects in Varanasi



Hon'ble Prime Minister, Shri Narendra Modi laid the foundation stone and dedicated multiple development projects in Varanasi. Governor, Smt. Anandiben Patel and Chief Minister, Shri Yogi Adityanath were also present

The Hon'ble Prime Minister, Shri Narendra Modi inaugurated and laid the foundation stone of multiple development projects worth more than `12,100 crores in Varanasi, Uttar Pradesh on 7th July, 2023. The projects include the dedication of Pt. Deendayal Upadhyaya Junction - Son Nagar railway line of Dedicated Freight Corridor, three railway lines whose electrification or doubling has been completed. The Hon'ble Prime Minister laid the foundation stone for multiple railway projects. Hon'ble PM said that it will not only increase the speed of goods trains but many new employment opportunities will be created in Purvanchal and Eastern India.

The Hon'ble Prime Minister highlighted the Vande Bharat Express and informed that the train is running on 25 routes in a short span of 4 years. He informed that two new Vande Bharat Express trains have been flagged off from Gorakhpur on 7th July, 2023 on Gorakhpur – Lucknow and Jodhpur – Ahmedabad routes.

Governor of Uttar Pradesh, Smt. Anandiben Patel, Chief Minister of Uttar Pradesh, Shri Yogi Adityanath, Deputy Chief Ministers of Uttar Pradesh, Shri Keshav Prasad Maurya and Shri Brajesh Pathak, Minister for Heavy Industries, Shri Mahendra Nath Pandey, Minister of State for Health and Family Welfare, Prof S. P. Singh Baghel, and Minister of Uttar Pradesh Government among others were present on the occasion.

The Hon'ble Prime Minister dedicated Pt. Deendayal Upadhyaya Junction - Son Nagar railway line of Dedicated Freight Corridor. Built at a cost of more than `6760 crores, the new line will facilitate faster and more efficient movement of goods. He also dedicated to the nation three railway lines whose electrification or doubling has been completed at a cost of more than `990 crores. These include Ghazipur city - Aunrihar rail line, Aunrihar-Jaunpur rail line and Bhatni-Aunrihar rail line. These projects have helped in achieving 100 percent electrification of railway lines in Uttar Pradesh.

The projects whose foundation stones were laid by the Hon'ble Prime Minister include the construction of 3 two-lane rail over bridge (ROB) near Chaukhandi, Kadipur and Hardattpur railway stations; the construction of Vyasnagar - Pt. Deendayal Upadhyay Junction rail flyover.

Hon'ble Prime Minister Laid the Foundation Stone of Railway Manufacturing Unit, Kazipet



Hon'ble Prime Minister, Shri Narendra Modi laid the foundation stone for construction of Railway Manufacturing Unit at Kazipet. Dr. Tamilisai Soundararajan, Governor, Telangana State; Shri Nitin Gadkari, Minister for Road Transport & Highways and Shri G. Kishan Reddy, Minister of Culture, Tourism and Development of North Eastern Region; were also present

Hon'ble Prime Minister Shri Narendra Modi laid the foundation stone for construction of Railway Manufacturing Unit at Kazipet on 8th July, 2023 from a function held at Warangal. Dr. Tamilisai Soundararajan, Governor, Telangana State; Shri Nitin Gadkari, Minister for Road Transport & Highways; Shri G. Kishan Reddy, Minister of Culture, Tourism and Development of North Eastern Region and Shri Bandi Sanjay Kumar, MP also graced the occasion. Shri Arun Kumar Jain, General Manager, SCR and other senior officials from Railways were also present on the occasion.

The Hon'ble Prime Minister stated that Indian Railways is reaching new heights in the manufacturing sector with the production of thousands of modern coaches and locomotives over the years. He said that now Kazipet has also become a proud partner of the Make in India concept embarked upon by the Indian Railways. The construction of Railway Manufacturing Unit at Kazipet will generate new employment opportunities and will be beneficial for many families in the region, he said. The Manufacturing Unit is expected to produce around 200 wagons per month, he added.

Salient Features of Railway Manufacturing Unit, Kazipet:

- Initially, a Wagon Repair Workshop was sanctioned at Kazipet to undertake periodic overhauling (POH) of 200 wagons per month. The project was entrusted to Rail Vikas Nigam Limited (RVNL).
- Later on, considering various factors such as the enhanced requirement of wagons by Railways, the regular demand from various factors for establishing a manufacturing unit to promote local industry and keeping in view the employment generation opportunities and socio-economic development of the people in the region, the 'Wagon Repair Shop' at Kazipet is being upgraded to a 'Railway Manufacturing Unit' with an estimated cost of `521 crores approximately.
- The Railway Manufacturing Unit at Kazipet is initially expected to produce 1200 wagons in the first year i.e., 100 wagons per month. Subsequently, during the second year the manufacturing capacity is likely to be increased to 2400 wagons per year.
- The Railway Manufacturing Unit at Kazipet will spur the eco-system of new industrial development in Hanumakonda region of Telangana state and will play an important role in the socio-economic progress of the people in the region.

Hon'ble PM Dedicated to The Nation Various Rail Development Projects in Raipur



Hon'ble Prime Minister, Shri Narendra Modi flagged off Antagarh-Raipur train. Also present were Governor, Shri Biswabhusan Harichandan, Chief Minister, Shri Bhupesh Baghel, Deputy CM, Shri T S Singh Deo and Minister for Road Transport and Highways, Shri Nitin Gadkari

The Hon'ble Prime Minister, Shri Narendra Modi laid the foundation stone and dedicated to the nation various development projects worth around `7500 crores in Raipur, Chhattisgarh on 7th July, 2023. The Hon'ble PM also dedicated to the nation the doubling of 103 km long Raipur-Khariar Road rail line which has been completed at a cost of `750 crores, a 17 km long new railway line connecting Keoti-Antagarh developed at a cost of `290 crores. He also flagged off Antagarh-Raipur Train via video link. Governor of Chhattisgarh, Shri Biswabhusan Harichandan; Chief Minister of Chhattisgarh, Shri Bhupesh Baghel; Deputy Chief Minister of Chhattisgarh, Shri T S Singh Deo; Minister for Road Transport and Highways, Shri Nitin Gadkari; Minister for Health and Family Welfare Dr Mansukh Mandaviya, and members of parliament were present on the occasion.

The Hon'ble Prime Minister also dedicated to the nation the doubling of 103 km long Raipur-Khariar Road rail line which has been completed at a cost of `750 crores. It will ease transportation of coal, steel, fertilizers and other commodities from ports for industries in Chhattisgarh. He also dedicated to the nation a 17 km long new railway line connecting Keoti-Antagarh developed at a cost of `290 crores. The new railway line will provide connectivity to Bhilai Steel Plant with iron ore mines of Dalli Rajhara and Rowghat areas and will link remote areas of southern Chhattisgarh passing through dense forests.

Hon'ble PM Laid the Foundation Stone and Dedicated Development Projects in Bikaner

The Hon'ble Prime Minister, Shri Narendra Modi on 11th July, 2023 laid the foundation stone and dedicated to the nation development projects worth over `24,300 crore in Bikaner, Rajasthan. The Hon'ble PM laid the foundation stone for the redevelopment of the Bikaner Railway Station at a cost of around `450 crores and doubling of the 43 km long Churu-Ratangarh section railway line. Doubling of this rail line will enhance connectivity, and facilitate easier transportation of gypsum, limestone, food grains and fertilizer products from Bikaner region to the rest of the country.



Hon'ble Prime Minister, Shri Narendra Modi laid the foundation stone and dedicated development projects alongwith Governor, Shri Kalraj Mishra, Minister for Road, Transport and Highways, Shri Nitin Gadkari, Minister for Law and Justice, Shri Arjun Ram Meghwal and Minister of State for Agriculture and Farmers' Welfare, Shri Kailash Choudhary

Governor of Rajasthan, Shri Kalraj Mishra; Minister for Road, Transport and Highways, Shri Nitin Gadkari; Minister for Law and Justice, Shri Arjun Ram Meghwal and Minister of State for Agriculture and Farmers' Welfare, Shri Kailash Choudhary among others were present on the occasion.

Railway Minister visited ICF and Inspected the New Vande Bharat Train under Production



The new Vande Bharat train under production at ICF with new livery

Shri Ashwini Vaishnaw, Minister of Railways on 15th July, 2023 visited ICF and inspected the Vande Bharat coaches under production at ICF, including the one with new livery.

During the interaction with media persons, he stated that he was happy to see the improvements being carried out at the Vande Bharat Express and he mentioned that he inspected about 25 safety and technical improvement features that have been implemented in the next Vande Bharat Express that is under production, as increase in seat declining angle, better cushion for seats, better accessibility to mobile-charging points than before, extended foot rest in the executive chair cars, wash basin with increased depth to avoid splashing of water, better lighting in toilets, provision of fixing points for wheel chairs used by divyangjan passengers in the driving trailer coaches, change of reading lamp touching from resistive touch to capacitive touch for easy use, better roller blind fabric and anti-climbing device in the Vande Bharat Express as well as other trains for improved safety.

He further stated that Railways are working on the feedback received from the passengers as well as the other stakeholders. These inputs are being used to better the coaches for safe and comfortable travel for the passengers. The process of production of Vande Bharat Sleeper Version as well as the Vande Metro Coaches are going in very good phase, he added. To cater to the comfortable and safe travel of the lower sections of passengers, Railways are taking up the important project of manufacture of coaches with advanced features that will cater to the unreserved and general class of passengers. This will ensure good quality trains available for such passengers. He also held discussions with Shri B.G. Mallya, General Manager, ICF and other officials of ICF, apart from meeting the staff representatives.



Shri Ashwini Vaishnaw, Minister of Railways alongwith Shri B.G. Mallya, General Manager inspected the Vande Bharat coaches under production at ICF

Minister of Railways Visited Chennai



Shri Ashwini Vaishnaw, Minister of Railways inspected the Tourist Special 'T' Train that resembles the appearance of vintage steam heritage special

Shri Ashwini Vaishnaw, Minister of Railways visited Chennai and participated in a series of events on 8th July 2023.

The Minister of Railways visited Dr MGR Chennai Central Station accompanied by Shri R.N. Singh, General Manager and senior officials. The Minister inspected the Tourist Special 'T' train that resembles the appearance of vintage steam heritage special. The Minister lauded the efforts of Perambur Carriage & Wagon Works and Avadi EMU Car Shed and Trichy Goldenrock Workshop for the exceptional steam loco design and tourist-friendly features incorporated in the Heritage special coaches.

A joint effort by EMU Car Shed, AVADI and Carriage Works, Perambur, the work of modification and retrofitment of steam heritage special MEMU train was successfully carried out. The 'T' train comprises two locos of MEMU driving motor car modified to resemble steam locos and attached to both ends of the train replicating the look and feel arrangement of first indigenously built steam loco No. F734. The four self-generating AC vistadome type coaches are attached in the middle of the rake formation with three chair cars and a fourth designated as restaurant car. These four coaches were converted duly incorporating modern features along with aesthetically designed interiors and fittings to have a pleasant and comfortable travel experience. Some of the modern and aesthetic features of the Tourist Special are ergonomic seating, window arrangement similar to vistadome coaches, modular toilets, interior paneling, public address and passenger information system, among others. The 'T' special train is set to redefine travel experience captivating both heritage enthusiasts and avid travelers with its unique features.

Shri Ashwini Vaishnaw held a review meeting at Southern Railway HQ. The Minister commended the performance of the Zone on various facets of working and advised corrective action wherever required.

Minister of Railways held Performance Review
Meeting of Three Zonal Railways at Kolkata

Shri Ashwini Vaishnaw, Minister of Railways held a review meeting of South Eastern Railway, Eastern Railway and Kolkata Metro Railway at ER's Headquarters on 21st June, 2023. In the review meeting, Shri Amar Prakash Dwivedi, GM, ER presented a power point presentation for appraisal of MR in which the progress and achievements of ER in respect of complete electrification, project execution, safety works, freight loading initiatives, revenue generation and passenger amenities augmentation initiatives were presented. AGM of ER & SER and all the PHoDs of ER, Metro Railway & SER were present in the meeting.



Shri Ashwini Vaishnaw, Minister of Railways held a review meeting of ER, SER and Metro Rly.

MR Inspected Howrah Maidan to Esplanade Stretch of East-West Metro

Minister of Railways, Shri Ashwini Vaishnaw visited Howrah Maidan to Esplanade stretch of East-West Metro on 21st June, 2023. Shri P. Uday Kumar Reddy, General Manager, Metro Railway briefed the Minister about the tunnel ventilation system, tunnel lighting system, power supply system as well as train operations that will start soon on this stretch with the help of 3-D model and diagrams. Shri Vaishnaw inspected this station and enquired about the state-of-the-art passenger amenities that are going to be provided here. After completing the inspection of Howrah Maidan station MR undertook a trolley inspection through the tunnel and reached Howrah station, which is going to be the deepest Metro station in India. The Railway Minister also inspected under the river tunnel which has been built 16m below the river Hooghly. He completed his inspection at Esplanade and expressed his hope that this 4.8 km long stretch of East-West Metro from Howrah Maidan to Esplanade will be opened for general public by December 2023 after the inspection of Commissioner of Railway Safety.



Shri P. Uday Kumar Reddy, General Manager briefed Shri Ashwini Vaishnaw, Minister of Railways with the help of 3-D model

MoSR Inspected Pakur & Murarai Stations



Shri Raosaheb Patil Danve, Minister of State of Railways inspected Pakur Railway Station

Shri Raosaheb Patil Danve, Minister of State of Railways inspected Pakur and Murarai stations in the presence of Divisional Railway Manager, Howrah on 12th June, 2023. During his inspection, Minister interacted with passengers and also expressed his satisfaction on passenger amenities and cleanliness of both the stations. Furthermore, he motivated Railway officers and staff with his valuable inputs and suggestions and inspired to keep up their good work.

READERS
are requested to send their
SUGGESTIONS/FEEDBACK
editorindianrailways@gmail.com

MoSR Flagged Off the Newly Converted LHB Rake of Flying Ranee Express



Smt. Darshana Jardosh, Minister of State for Railways flagged off the newly converted Linke Hofmann Busch (LHB) rake of Mumbai Central-Surat Flying Ranee Express

Minister of State for Railways, Smt. Darshana Jardosh flagged off the newly converted Linke Hofmann Busch (LHB) rake of Train No. 12921/12922 Mumbai Central-Surat Flying Ranee Express from Mumbai Central station on 16th July, 2023. Smt. Jardosh flagged off this iconic train in the presence of MP Shri Gopal Shetty and MLA Smt. Manisha Chaudhary. MoSR also travelled in this immensely popular train with passengers up to Surat. MoSR Smt. Jardosh in her address to the gathering expressed her delight and stated that it is a proud moment for Mumbai and Surat that this iconic train gets another makeover. She also emphasised that the new LHB rake will provide extra comfort and ensure enhanced safety of passengers.

The popular Mumbai-Surat Flying Ranee Express first started chugging in 1906. On December 18, 1979, the Flying Ranee became the first train in the history of the Indian Railways to be attached with the double-decker coaches. The train comprises of 21 coaches consisting of two AC chair car (reserved), seven reserved second class seating, seven unreserved second class seating, one coach earmarked for first class MST passholders, one coach for second class MST, one coach for ladies MST and one coach for ladies unreserved.

Agartala-Kolkata Special with Modern AC LHB Rake Flagged Off

The conventional ICF model rake of Train no. 02502/02501 (Agartala-Kolkata - Agartala) special has been converted to a fully air conditioned LHB (Linke Hofmann Busch) rake. On 17th May, 2023 the train with LHB coaches was flagged off from Agartala Railway Station by Kumari Pratima Bhoumik, Minister of State for Social Justice and Empowerment. Shri Prem Ranjan Kumar, Divisional Railway Manager, Lumding along with other senior officials of the division were also present at Agartala Railway Station during the flagging off ceremony.



Kumari Pratima Bhoumik, Minister of State for Social Justice and Empowerment flagged off Agartala-Kolkata - Agartala special Train

KIND ATTENTION

AUTHORS/WRITERS contributing articles for the magazine are requested to restrict their articles to a reasonable size. Ideally an article should not exceed 1000 WORDS.

In view of the space constraints of the magazine, sometimes it becomes difficult to include longer articles. All are requested to appreciate our problem and co-operate.

9th International Day of Yoga
Celebrated in Indian Railways



Minister of Railways, Shri Ashwani Vaishnaw participated in a programme at Permit Field Ground, Balasore, to celebrate the International Day of Yoga. Around 7,000 yoga enthusiasts took part in the celebration along with Shri Pratap Chandra Sarangi, MP, Balasore



Shri Raosaheb Patil Danve, Minister of State of Railways participated at the 9th International Yoga Day in Maharashtra



Smt. Darshana Jardosh, Minister of State for Railways participated in the 9th International Yoga Day at Nayagarh, Odisha

NORTHERN RAILWAY



The 9th International Yoga Day was organized at Karnail Singh Stadium, New Delhi. Shri Roop N. Sunker, Member Infrastructure; Shri Naveen Gulati Member, Traction and Rolling Stock; Shri Shobhan Chaudhuri, General Manager, Northern Railway; Shri Dimpy Garg, Divisional Railway Manager, Delhi and other senior officers and staff of Railway Board and Northern Railway were present on this occasion. Yoga is very helpful in curbing life style related problems. About 250 participants took part with great enthusiasm.

RAIL COACH FACTORY

International Yoga Day was celebrated with great enthusiasm on 21st June, 2023. The officers and employees of RCF enthusiastically participated in this program organized in the Community Hall of RCF. The program started by lighting the lamps by Mr. Ashesh Agrawal, General Manager RCF Mrs. Surabhi Agrawal, President, RCF Women's Welfare Organization. Principal Chief Mechanical Engineer and other high officials of



RCF were also present on this occasion.

NORTHEAST FRONTIER RAILWAY



International Day of Yoga was celebrated on 21st June, 2023. In NFR Headquarters the Yoga programme was held at the Railway Indoor Stadium, Maligaon in collaboration with 'Art of Living' Guwahati Centre. Shri Chetan Kumar Shrivastava, GM/N.F. Railway, along with other senior officials was present on the occasion where railway officers and staff participated wholeheartedly with their family.

WESTERN RAILWAY

International Day of Yoga was celebrated over Western Railway including all six Divisions on 21st June, 2023. Shri Ashok Kumar Misra, General Manager of Western Railway presided over the event at Utsav Hall, Badhwar Park. Yog asanas under the common yoga protocol were performed by GM Shri Ashok Kumar Misra, principal head of departments, senior officers of various departments, WRWWO President Smt. Kshama Misra, Executive



Committee members of Western Railway Women Welfare Organisation (WRWWO) as well as employees of WR. The session was led by Dr. Jancy Shekar and her team.

SOUTH WESTERN RAILWAY



International day of yoga was celebrated with utmost fervor and enthusiasm on 21st June, 2023. On this occasion, yoga and pranayam session was organised at SWR - Construction Office, Bengaluru, in which General Manager Shri Sanjeev Kishore; President SWRWWO Dr. Vandana Srivastava, Chief Administrative Officer Shri S.P.S. Gupta, senior officers and staff took part.

RESEARCH DESIGNS AND STANDARDS ORGANISATION

International Yoga Day 2023 was organized on 21st June, 2023. The main function was organized at Officers Club RDSO. Senior officers of RDSO practiced yoga with great enthusiasm under the guidance of yoga instructor Smt. Uma Rawat, Shri Sharad Kumar Jain, ADG-RDSO, Shri B. P. Awasthi PED-Infra-II and other senior officers of RDSO were also present on this occasion and practiced yoga.



CHITTARANJAN LOCOMOTIVE WORKS

On 21st June, 2023, International Day of Yoga was celebrated. Led by Shri Debi Prasad Dash, General Manager/ CLW, an impressive yoga session took place following the Common Yoga Protocol in Officers Club premises. Dr. Avanjali Satpathy, President/CLW-WWO graced the event . Senior officers, CLW-WWO members, staff, and their families partcipated in the event at the Chittaranjan Club premises.



WEST CENTRAL RAILWAY



The 9th International Yoga Day was celebrated at WCR Headquarters and in all three divisions. The General Manager administered the oath for Yoga to the railway officers and employees. Under the direction of General Manager, Shri Sudhir Kumar Gupta, yoga practise camps were organised on the occasion of the 9th International Yoga Day with full vigour in all three divisions, Jabalpur, Bhopal, and Kota, alongwith the headquarters.

NORTH EASTERN RAILWAY

General Manager, NER Shri Chandra Vir Raman, PHoDs, NERWWO, senior railway officers and their family members practiced Yoga at Railway Officers' Club, Gorakhpur on the occasion of International Yoga Day held on 21st June, 2023. The function was inaugurated by GM by lighting the lamp. At Multidisciplinary System Training Centre, Gorakhpur, railway employees and their family members practiced Yoga under the supervision of skilled Yoga instructors. In Lucknow, Varanasi and Izzatnagar Division, Yoga programmes were organized at various places.



Meeting of MPs of Jabalpur and Bhopal Division with General Manager/WCR



An important meeting of MPs of Jabalpur Division was organised on7th July, 2023, to discuss passenger amenities, development, and expansion of railway facilities. MP Jabalpur, Shri Rakesh Singh; MP Satna, Shri Ganesh Singh; MP Narmadapuram Shri Uday Pratap Singh; MP Sagar, Shri Raj Bahadur Singh, and MP (Rajya Sabha) Shri Kailash Soni were present in the meeting. An important meeting was organised on 14th July, 2023, by the GM/WCR, Shri Sudhir Kumar Gupta, with the MPs of Bhopal Division for the purpose of discussing passenger facilities and the development of rail facilities.

GM, NER Met MPs of all the Three Divisions of NER

A Divisional Committee meeting with Members of Parliament and representatives of MP of the service areas of Izzatnagar, Lucknow and Varanasi divisions was organized on16th, 23rd and 29th June, 2023 respectively in the concerned divisional office. GM, NER Shri Chandra Vir Raman said that the meeting with MPs plays a vital role in getting the valuable suggestions for the improvement of railway. The issues and demands raised by MPs are very useful for railway administration to take necessary steps and to adopt remedial measures in order to achieve the desired level of customer satisfaction.



MPs Jabalpur Inaugurated three Lifts at Madan Mahal Station



On 1st July, 2023, three lifts were started simultaneously at Madan Mahal station. These lifts, installed on each platform of Madan Mahal station, were inaugurated by MP Jabalpur Shri Rakesh Singh and MP (Rajya Sabha) Smt. Sumitra Balmiki.

Newly Constructed Station Platform Building at Bhopal Railway Station



On 7th May, 2023, the newly constructed station platform building of Bhopal station was inaugurated by Medical Education, Bhopal Gas Tragedy Relief and Rehabilitation Minister, Government of Madhya Pradesh Shri Vishwas Sarang and MP Bhopal, Sadhvi Pragya Singh Thakur.

This newly constructed station building is connected to both the foot over bridges, so that passengers can travel to any platform from the building itself.

MP, Sagar Inaugurated Newly Constructed Goods Shed

Newly constructed Goods Shed was inaugurated at Lidhora Khurd station by MP Sagar, Shri Rajbahadur Singh on 8th May, 2023. Continuous efforts are being made by West Central Railway for the development of Saugor and its nearby stations, due to which, along with a significant increase in passenger facilities, now the railways have started getting increase in freight from this goods shed.



MP/Jorhat Inaugurated Two Lifts at Mariani Station



On 11th May, 2023 the Tinsukia division achieved one more milestone of passenger amenities by providing two lifts at Mariani station Shri Topon Gogoi, MP/Jorhat inaugurated the lifts in presence of Shri Rupjyoti Kurmi, MLA/Mariani; and other senior officers of the division. These lifts are provided to enhance the convenience for passengers especially for senior citizens and differently abled persons.

Member Infrastructure Inspected
USBRL Project in Jammu & Kashmir



Shri R. N. Sunker, Member Infrastructure, Railway Board carried out an intensive and detailed inspection of the Katra–Banihal section of the USBRL Project on 29th April, 2023 along with senior officers of NR and KRCL. After the inspection of the Anji bridge, Shri Sunkar also inspected the Reasi station yard between Tunnel-3 and Tunnel-5. Reasi yard is located on another mega Bridge no. 39, which is a continuous composite steel girder of span 490 m and the pier height varies from 35.08 m to 105 m and tallest pier P5 is 105m high from foundation level.

Batch of Indian Railway Traffic Service Probationers
Passed out with Flying Colours from IRITM, Lucknow

Batch of 30 officers of Indian Railway Traffic Service (IRTS-2019 batch), including 8 lady officers, passed out after successful completion of 78-week professional training. Valediction Ceremony was organized at Indian Railways Institute of Transport Management (IRITM), Lucknow on 22nd July, 2023.



Smt. Jaya Varma Sinha, Member (O&BD), Railway Board graced the occasion as esteemed guest. Other distinguished guests, who graced the occasion, were Shri Ajay Kumar Rana, DG/RDSO, Shri Manish Thaplyal, DRM/NR, Sh. Aditya Kumar, DRM/NER, Lucknow and officers from Lucknow Divisions of Northern & North Eastern Railways and retired senior railway officers.

Smt. Neha Ratnakar, the Course Director, delivered an insightful report, highlighting the rigorous training and incredible journey of the IRTS Probationers during their time at IRITM. This was followed by sharing of experiences by the probationary officers.

At this occasion, medals and certificates of merit were distributed by Smt. Jaya Varma Sinha, Member (O&BD), Railway Board and Shri Hari Shankar Verma, Director General of the institute.

Shri Atre Shantanu Kishor and Shri Ankit Shankar Mishra were awarded the Best IRTS Officer trainee award and Esprit De Corps Yadavendra Singh Bhati Memorial award respectively, Shri Raghav Taneja was awarded for the Best Academic Performance. Shri Nikhil Khare and Ms. Sugandha Jindal were jointly awarded for being the Best Officer Trainee in Cultural Activities. Shri Raghav Taneja and Ms. Nivedita Dutta were awarded for being the best in the Sports Activities.

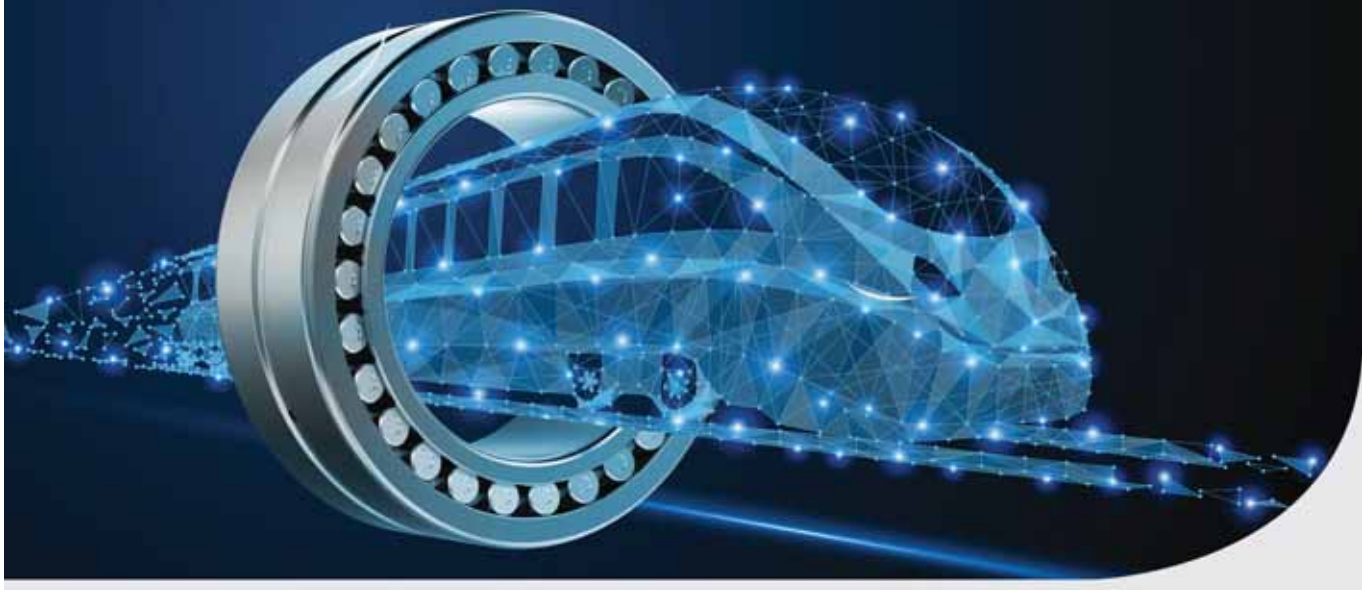
Smt. Jaya Varma Sinha, Member (O&BD), Railway Board and Sh. Hari Shankar Verma, Director General of the Institute addressed the gathering and congratulated the passing out officers.

CELEBRATING 75 YEARS

CK BIRLA GROUP

nbc flexible solutions

Helping Indian Railways be future-ready... since 1952!



NBC is the first Indian bearing manufacturer to supply to Indian Railways. From locos to wagon wheels to freight carriers, it provides over 50 different types of bearings to help the railways run smoothly across the country. As the railways gets ready for a journey into the future, we are geared up with bespoke solutions.

Bearing solutions for Railway Applications:

- Locomotive
- Wagon Wheel
- Traction Motor
- Freight Carriers
- Suspension





Cartridge Tapered Roller Bearings



Insulated Traction motor bearings



Roller Bearing and Axle Box



Spherical Roller Bearing



Traction Motor Bearings



Traction motor Suspension MSU Bearings

To find a bearing solutions that suit your needs,
call us on **1800 3000 6222**
or write to us at **neisales@nbcbearings.in**

National Engineering Industries Ltd Khatipura Road, Jaipur 302 006 Rajasthan, India.
National Engineering Industries Limited (NEI) is an integral part of the US $2.4 billion CK Birla Group. NEI manufactures over 200 million bearings each year in more than 2300 variants with exports to over 30 countries across five continents.

Follow us on:
/nbcbearings

IR Adopts Innovative Approach of linking Popular Area with Station Name for Passenger Convenience



For the convenience of passengers' identification of small stations with popular areas/ cities, Indian Railways has adopted an innovative approach of linking popular area with station name. This new approach would yield a better planning of journey and personalized passenger experience in ticket booking on website and Mobile app. It will also facilitate tourists as station search will get easier. Also, better connectivity will be available for passengers. This facility will be available from 21st July, 2023.

This initiative also includes linking of satellite city to connecting railway stations e.g., Noida to New Delhi. Sometimes, local/popular names are different from railway station names leading to confusion while planning journey hence, linking will eliminate confusion.

To accomplish the objective, application changes in technology have been done and 175 popular city areas have been linked with 725 stations.These changes have been incorporated in the journey planner station search of e-ticket booking website.The functionality shall be displayed on the journey planner and electronic reservation slip of the ticket.

Benefits to Passengers:

- Better and personalized experience for passengers in rail journey planning
- Tourist convenience
- Ease of station search for tourists
- Places of tourist importance e.g., Kashi, Khatu Shyam, Badrinath, Kedarnath, Vaishnodevi etc. mapped to the nearest stations.
- Better connectivity
- Linking of satellite city to connecting railway stations e.g., Noida to New Delhi
- Regional importance and pride for citizens: popular city name associated with a railway station gives a sense of pride and ownership to the citizens.

The functionality will provide ease of communication in case of change in station due to operational reasons e.g., if a scheduled station is changed due to operational/maintenance activity- journey planner will show alternate station in search for example:

e.g., Train 19031 [Ahmedabad to Jaipur] is planned from Asarva instead of scheduled station Ahmedabad. Asarva will be shown in journey planner on input Ahmedabad-currently this activity is done manually.

Further, MIS (Management Information System) generated will enable better planning of new trains and station amenities.

Central Railway AC Local Carried 49.47 lakh Passengers from April to June 2023



There has been an overwhelming response to passengers opting for AC local on Central Railway. Central Railway AC locals have carried 49.47 lakh passengers from April 2023 to June 2023 and registered a revenue of `23.36 crore.

A) April to June Quarterly average number of passengers and earnings

S.No.		FY 2022-23 April to June	FY 2023-24 April to June	Percentage increase
1.	Total Passengers	26.60 Lakh	49.47 Lakh	53.77%
2	Total Earnings	12.16 Crores	23.36 Crores	52.05%
3	Monthly average number of passengers	8.86 Lakh	16.49 Lakh	53.73%
4	Monthly average earnings (in `)	4.05 Crores	7.78 Crores	52.06%

B) Daily average number of passengers and earnings

S.No.	2022-23 April to June (Passengers)		2023-24 April to June (Passengers)	Percentage increase
1.	April	19.766	50.103	39.45%
2	May	31.085	56.315	55.20%
3	June	36.811	56.615	65.02%
4	Total Number of Passengers from April- June	87.662	1.63.033	53.77%
5	Daily average number of passengers	29.221	54.344	53.77%
6	Daily average Earnings (In `)	13.35 Lakhs per day	25.65 Lakhs per day	52.04%

C) Penalty imposed on ticketless passengers in AC local

S.No.		April to June 2022	April to June 2023
1.	Number of ticketless passengers in AC Local	4903	9593
2	Penalty imposed on above ticketless passengers in AC Local	`17.79 Lakhs	`31.92 Lakhs

Presently, Central Railway runs 56 AC services with 4 rakes on its suburban section. Besides offering a safe and cool ride, travel by AC local has also become economical especially after slashing of fares a year ago.

In addition, Railways have also facilitated First class quarterly, half yearly and yearly season ticket holders to travel in AC EMU by paying the difference of fare between first class quarterly, half yearly and yearly season tickets and AC quarterly, half yearly and yearly season tickets for the entire period irrespective of the days left in first class quarterly season ticket, Half Yearly season ticket and yearly season ticket.

Newly Constructed National Martyr's Memorial
Unveiled at Jagjivan RPF Academy Lucknow

The newly constructed National Martyr's Memorial and National Museum for Railway Security at Jagjivan RPF Academy Lucknow was unveiled on 24th July, 2023 by Shri Sanjay Chander, Director General, Railway Protection Force.



This martyr's memorial is spread over an area of 4800 sq.m. and on this memorial, the names of 1014 martyred RPF personnel from 1957 till date have been inscribed and tribute has been paid to them on behalf of the RPF. The museum is spread over a total area of 9000 sq. ft, with 37 thematic display panels, 11 display cabinets, an info-graphic history of policing, 87 artefacts, 500 pages from the National Archives of India, 36 weapons from a bygone era, 150 railway items related to security, 15 mannequins of various ranks of the RPF, and many other important items are on display. The motto of this museum is Gyanvardhanayachsanrakshanaya which constantly inspires RPF to 'promote knowledge and preserve heritage'. Apart from this, War Trophy T-55 tank which was received from Central Armoured Fighting Vehicle Depot Kirkee, Khadki, Pune and installed in the academy campus, newly constructed Badminton and Lawn Tennis Court, Special Band of RPF were also unveiled by the DG, RPF.

Ground breaking Ceremony of Central
Command and Control Centre



Ground breaking ceremony of Central Control and Command Centre took place in New Delhi on 26th July, 2023. Central control and command centre will serve as the nerve centre for the whole of Indian Railways in situations of emergency. Shri Sanjay Chander, DG, RPF attended as the Chief Guest.

More than 50 staff will work round the clock in various shifts in monitoring cell and analytic cell. The Central Command and Control Centre building will serve as TOPARC headquarters for data monitoring, CCTV analysis, Data analysis and works related to cyber operations etc. with refernce to all zones of Indian Railways for purpose of which video screen of each zone will be placed in monitoring hall.

The Building will consist of 60-person capacity conference hall, gymnasium facility, cafeteria and suites for dignitaries. Project will be constructed in two phases and amount of `4.5 crore and `13.5 crore sanctioned for both phases.

Railway Protection Force Cracks Down Heavily on Offenders Across the Country



The Railway Protection Force (RPF) recently concluded a month-long pan-India drive in June 2023, aimed at enhancing the security measures and ensuring the safety of railway property and passengers across the country. This extensive campaign focused on three key areas:

The first drive was against receivers of stolen Railway property and harbors of criminals involved in theft/criminal misappropriation of Railway property. RPF initiated a roboust crackdown on individuals engaged in receiving stolen railway property and those harbouring criminals involved in the theft or criminal misappropriation of railway property. Through tactical operations and intelligence-driven actions, the RPF aimed to dismantle the network responsible for the illegal siphoning off and subsequent sale of railway assets and to bring the perpetrators to justice. During the month long pan India drive, RPF apprehended 90 receivers of stolen railway property and registered 80 cases with the recovery of stolen railway property worth `5.7 lacs.

The second focused approach was for preventing/detecting passengers' crimes reported in Railway premises using digital footprint/data processing and CCTV footage. Utilizing cutting-edge technology and data analysis techniques, RPF leveraged the power of CDR/SDR/TDD databases coupled with input from PRS database to prevent and detect crimes committed by passengers in railway premises. By harnessing the digital footprint left behind by offenders and analyzing CCTV footage, the RPF aimed to swiftly identify and apprehend criminals, ensuring a safer environment for all railway passengers. During the month long drive, RPF detected 493 cases and arrested 484 accused involved in the crime of theft of passenger belongings, robbery, crime against women and those involved in the illegal selling of railway tickets.

The third dimension of the pan India drive was aimed at disposal of case properties. RPF recognized the importance of efficient disposal of case properties to streamline legal procedures and maintain the integrity of investigations. During the month-long drive, RPF prioritized the swift and proper disposal of case properties related to ongoing cases, ensuring that justice was served effectively and expeditiously. During the month long drive, 426 case properties were disposed.

The Railway Protection Force is committed to ensuring the safety and security of railway property and passengers across the country. This pan India drive in June 2023 marks a significant milestone in its ongoing efforts to curb theft, enhance passenger safety, and maintain the integrity of investigations. The drive will continue in future too.



RAILWAYS IN PARLIAMENT

This information was given by the Minister of Railways, **Shri Ashwini Vaishnaw** in a written reply to the questions in Parliament.

From 2017-18 to 2021-22, an Expenditure of `1.08 Lakh Crore was Incurred on Rashtriya Rail Sanraksha Kosh Works



Rashtriya Rail Sanraksha Kosh (RRSK) was created in FY 2017-18 for execution of assessed safety works with a corpus of `1 lakh crore over a period of 5 years. The projects taken up under this fund relate to track renewal, bridges, signalling, rolling stock, training and amenities for safety critical staff. RRSK works are to be funded from Gross Budgetary Support (GBS) and Railways revenues/resources including mobilisation of resources through Extra Budgetary Resources (EBR), as per Ministry of Finance guidelines on RRSK. From 2017-18 till FY 2021-22 an expenditure of `1.08 lakh crore was incurred on RRSK works.

Railway Safety Fund (RSF) was created in FY 2001-02 initially to fund works relating to Level Crossing and Road Over Bridge and Road Under Bridge. Its scope has subsequently been expanded for capital expenditure on other safety works also.

During last five years, RRSK and Railway Safety Fund (RSF) have been operated for expenditure on safety related works. Apart from this Capital Expenditure from Gross Budgetary Support, DRF and DF is made on safety related works. Between FY 2014-15 and FY 2022-23 the total expenditure and BE for FY 2023-24 amounts to `1.78 lakh crores on safety related plan heads. This amount is about 2.5 times the amount spent on safety related plan heads during FY 2004-05 to FY 2013-14 (` 70,274 crore).

Safety critical staff like drivers keep continuous watch on track and signals. This involves standing. Therefore, the quality of rest after duty hours is very important. To have loco pilots/assistant loco pilots well rested before the next duty, amenities like foot massager, yoga mats, fitness facilities, kitchen utensils were recommended for running rooms, in the technical report submitted by Centre for Advance Maintenance Technology (CAMTECH) in 2013. Laptops and computers were also provided for safety related Track Management System application besides training of safety manpower. C&AG in its performance audit report No 22 of 2022 on "Derailment in Indian Railways" has observed that some of the expenditure booked to RRSK was in non-priority items. Railways has replied to the audit observation in the Action Taken Note, stating that these expenditures are covered by policy letters and technical report of CAMTECH on Running Room Facilities. Accordingly, required expenditure on equipment and gear for safety critical staff has been booked to RRSK on some Railways.

Continuous Rise in Freight Traffic During Last Three Years

Improvement in freight cargo transportation is an on-going process on Indian Railways. Speeds of cargo trains are subject to network capacity. The progressive commissioning of Dedicated Freight Corridor has significantly helped in reducing transit time of cargo on these routes.

The details of total originating freight traffic by Indian Railways during the last three years in million tonnes (MT) are mentioned. Revenue from Passenger and Freight for last three years are given.

Railway operations were adversely impacted during the Covid-19 pandemic. After normalisation there has been a healthy improvement of operating ratio.

Financial Year	Passenger (` in Crore)		Freight (` in Crore)	
	Revenue	Increase over past year	Revenue	Increase over past year
2020-21	15248	-35421	117232	3744
2021-22	39214	23966	141096	23865
2022-23 Prov.	63417	24203	162263	21167

Financial Year	2018-19	2019-20	2020-21	2021-22	2022-23
Operating ratio	97.3%	98.36%	97.45%	107.39%	98.10%

Financial Year	2020-21	2021-22	2022-23
Total loading	1233.22	1418.27	1512.07

Kavach Tenders have been Awarded for Delhi-Mumbai and Delhi-Howrah corridors



Kavach is indigenously developed Automatic Train Protection (ATP) system. Kavach is a highly technology intensive system, which requires safety certification of highest order. Kavach aids the loco pilot in train running within specified speed limits by automatic application of brakes in case locopilot fails to do so and also help the train safely run during inclement weather.

The first field trials on the passenger trains were started in February 2016. Based on the experience so gained and Independent Safety Assessment of the system by a 3rd party (Independent Safety Assessor: ISA), three firms were approved in FY 2018-19, for supply of Kavach. Subsequently Kavach was adopted as a National ATP system in July 2020.

Kavach has so far been deployed on 1465 Rkm and 121 locomotives (including Electric Multiple Unit rakes) on South Central Railway. Kavach tenders have been awarded for Delhi-Mumbai and Delhi-Howrah corridors (approximately 3000 Rkm) and work is in progress on these routes. Indian Railways is preparing Detailed Project Report (DPR) and detailed estimate for another 6000 Rkm.

The amount spent so far on Kavach implementation is `351.91 crores.The cost for provision of track side including Station equipment of Kavach is approximately `50 lakh/km and cost for provision of Kavach equipment on loco is approximately `70 lakh/ loco. Presently there are three Indian OEMs who are approved for Kavach. Efforts are being made to develop more vendors to enhance the capacity and scale up the implementation of Kavach.

From FY 2017-18 to FY 2021-22, Gross Expenditure of `1.08 Lakh Crore Incurred on RRSK Works

The details of number of consequential train accidents from FY 2000-01 to FY 2022-23 are given below :-



As is evident from the graph above, there is a steep decline in the number of consequential train accidents from 473 in FY 2000-01 to 48 in FY 2022-23.

The average number of consequential train accidents during the period, 2004-14 was 171.1 per annum, while the average number of consequential train accidents during the period, 2014-23 is 70.9 per annum.

The following efforts are being made by Government to prevent rail accidents: -

- Rashtriya Rail Sanraksha Kosh (RRSK) has been introduced in FY 2017-18 for replacement/ renewal/upgradation of critical safety assets, with a corpus of `1 lakh crore for five years. From FY 2017-18 till FY 2021-22 a gross expenditure of `1.08 lakh crore was incurred on RRSK works.
- Electrical/Electronic Interlocking Systems with centralized operation of points and signals have been provided at 6427 stations upto 31st May, 2023 to eliminate accident due to human failure.
- Interlocking of Level Crossing (LC) Gates has been provided at 11093 level Crossing Gates up to 31st May, 2023 for enhancing safety at LC gates.



- Complete Track Circuiting of stations to enhance safety for verification of track occupancy by electrical means has been provided at 6377 stations upto 31st May, 2023.
- Detailed instructions on issues related with safety of Signalling e.g. mandatory correspondence check, alteration work protocol, preparation of completion drawing, etc. have been issued.
- System of disconnection and reconnection for S&T equipment as per protocol has been re-emphasized.
- All locomotives are equipped with Vigilance Control Devices (VCD) to ensure alertness of Loco Pilots.
- Retro-reflective sigma boards are provided on the mast which is located between two OHE masts prior to the signals in electrified territories to warn the crew about the signal ahead when visibility is low due to foggy weather.
- A GPS based Fog Safety Device (FSD) is provided to loco pilots in fog affected areas which enables loco pilots to know the distance of the approaching landmarks like signals, level crossing gates etc.
- Modern track structure consisting of 60kg, 90 Ultimate Tensile Strength (UTS) rails, Prestressed Concrete Sleeper (PSC) Normal/Wide base sleepers with elastic fastening, fanshaped layout turnout on PSC sleepers, Steel Channel/H-beam Sleepers on girder bridges is used while carrying out primary track renewals.
- Mechanisation of track laying activity through use of track machines like PQRS, TRT, T-28 etc to reduce human errors.
- Maximizing supply of 130m/260m long rail panels for increasing progress of rail renewal and avoiding welding of joints, thereby ensuring safety.
- Laying of longer rails, minimizing the use of Alumino Thermic Welding and adoption of better welding technology for rails i.e. Flash Butt Welding.
- Monitoring of track geometry by OMS (Oscillation Monitoring System) and TRC (Track Recording Cars).
- Patrolling of railway tracks to look out for weld/rail fractures.
- The use of Thick Web Switches and Weldable CMS Crossing in turnout renewal works.
- Inspections at regular intervals are carried out to monitor and educate staff for observance of

safe practices.

- Web based online monitoring system of track assets i.e. track database and decision support system has been adopted to decide rationalized maintenance requirement and optimize inputs.
- Detailed instructions on issues related with safety of track e.g. integrated block, corridor block, worksite safety, monsoon precautions etc. have been issued.
- Preventive maintenance of railway assets (Coaches & Wagons) is undertaken to ensure safe train operations and to keep a check on rail accidents across the country.
- Replacement of conventional ICF design coaches with LHB design coaches is being done.
- All unmanned level crossings (UMLCs) on Broad Gauge (BG) route have been eliminated by January 2019.
- Safety of Railway Bridges is ensured through regular inspection of Bridges. The requirement of repair/ rehabilitation of Bridges is taken up based upon the conditions assessed during these inspections.
- Indian Railways has displayed Statutory 'Fire Notices' for widespread passenger information in all coaches. Fire posters are provided in every coach so as to inform and alert passengers regarding various Do's and Don'ts to prevent fire. These include messages regarding not carrying any inflammable material, explosives, prohibition of smoking inside the coaches, penalties etc.
- Production Units are providing Fire detection and suppression system in newly manufactured Power Cars and Pantry Cars and Fire and Smoke detection system in newly manufactured coaches. Progressive fitment of the same in existing coaches is also underway by Zonal Railways in a phased manner.
- Regular counseling and training of staff is undertaken.

The number of Consequential train accidents has decreased from 59 in FY 2018-19 to 48 in the year FY 2022-23. The details of Consequential train accidents during the last five years are given below:

Financial Year	Number of consequential Train Accidents
2018-19	59
2019-20	55
2020-21 (Covid year)	22
2021-22 (Covid year)	35
2022-23	48

The Government is using the following new techniques or devices to prevent train accidents:-

- With a view to provide safer and more comfortable journey to the travelling passengers, Linke Hofmann Busch (LHB) coaches are being inducted in IR in a phased manner. Trains operating with conventional ICF coaches are getting replaced by LHB coaches in a phased manner. Around 1241 rakes are running with LHB coaches (including new introduction).
- Improved safety standards have been adopted in Vande-Bharat trains, which include Train Collision Avoidance System (Kavach), Fully Sealed Gangway for Free Passenger Movement, Automatic Plug Doors, emergency openable Windows and fire extinguisher in each coach, CCTVs in all Coaches, Emergency Alarm Push buttons and Talk Back Units in all Coaches, Better fire safety-Aerosol based fire detection and suppression system etc.
- Steps have been taken to improve fire safety measures. All Power Cars, Pantry Cars and AC coaches are being equipped with suitable fire safety measures in phased manner.
- Production Units are providing Fire detection and suppression system in newly manufactured Power Cars and Pantry Cars and Fire and Smoke detection system in newly manufactured AC coaches. Progressive fitment of the same in existing coaches is also underway by Zonal Railways in a phased manner.
- Technological upgradation in safety aspects of coaches and wagons, by way of introducing Modified Centre Buffer Couplers, improved suspension design and provision of Automatic fire & smoke detection system in coaches, is being carried out which would eventually lead to enhanced safety standards. Apart from these upgradations in Rolling Stock design and its components, Indian Railways is also installing Wheel impact Load Detectors (WILD), Hot Box Detector (HBD), Oscillation Monitoring System (OMS) etc. in a phased manner to improve safety of coaches and wagons.
- Indigenously developed automatic train protection system 'KAVACH' has been adopted as an aid to driver in train running within specified limits and also help the train running during inclement weather. KAVACH is being provided progressively over IR.

48 Gati Shakti Multi Cargo Terminals Commissioned

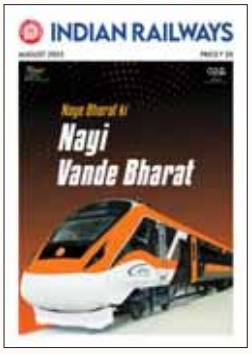


To achieve the goals set out in PM Gati Shakti framework, a master circular on 'Policy for Management of Railway Land' which includes provisions for leasing of railway land for cargo related activities, public infrastructure, railway exclusives use, etc. has been issued on 4th October, 2022. Railway land can be leased for cargo related projects/ facilities for period up to 35 years at annual lease charges of 1.5% of market value of land by transparent methods of competitive bidding. The revised railway land management policies will enable integrated development of infrastructure. A master circular related to development of Gati Shakti Multi-Modal Cargo Terminals Railway has been issued on 6th December, 2022. Since such commercial policies are open-ended programmes continuing on railways, consequential development of cargo terminals coupled with generation of sizeable employment is also likely to be a continuous process in future.

The zone-wise details of Gati Shakti Multi Cargo Terminals commissioned so far are as under:

Zonal Railways	No. of GCTs Commissioned
Central	1
Eastern	3
East Central	4
East Coast	2
Northern	2
North Central	1
North Eastern	3
Northeast Frontier	2
North Western	5
Southern	1
South Central	9
South Eastern	4
South East Central	3
South Western	2
Western	6
West Central	-
Total	48

OUTLET FOR PURCHASE/SUBSCRIPTION
of Magazines Published by Ministry of Railways



The monthly magazines viz. *'Bhartiya Rail'* in Hindi and *'Indian Railways'* in English are now available for purchase/subscription at

Souvenir Shop of
NATIONAL RAIL MUSEUM
Chanakyapuri, New Delhi

ANNUAL SUBSCRIPTION
India : ` 250 (`200 for Railwaymen), **Foreign :** ` 1250 (Sea Mail), ` 2500 (Air Mail),
Single Copy : ` 20, **Special Issue :** ` 70

RAILWAYS IN PARLIAMENT

1309 Railway Stations have been Identified under Amrit Bharat Station Scheme for their Development



Model Station Scheme was in vogue from 1999 to 2008. Under this scheme 594 stations were selected for upgradation on Indian Railways. Out of these 34 stations in Madhya Pradesh were selected for upgradation and all the identified stations have been developed under this scheme. A list of zone-wise stations developed under the Model Station scheme is appended.

Recently, the Amrit Bharat Station Scheme has been launched for development of Railway stations on Indian Railways. This scheme envisages development of stations on a continuous basis with a long-term approach. It involves preparation of Master Plans and their implementation in phases to improve the amenities at the stations like improvement of station access, circulating areas, waiting halls, toilets, lift/escalators as necessary, cleanliness, free Wi-Fi, kiosks for local products through schemes like 'One Station One Product', better passenger information systems, executive lounges, nominated spaces for business meetings, landscaping etc. keeping in view the necessity at each such station.

The scheme also envisages improvement of building, integrating the station with both sides of the city, multimodal integration, amenities for divyangjans, sustainable and environment friendly solutions, provision of ballast less tracks, 'Roof Plazas' as per necessity, phasing and feasibility and creation of city centres at the station in the long term.

So far 1309 Railway stations have been identified under this scheme including 80 stations in the state of Madhya Pradesh.

The zone-wise names of stations developed under Model Station Scheme is as follows: -

Central (35) : Akola, Bhusaval, Chandrapur, Chatrapati Shahu Maharaj Terminus (Kolhapur), Dadar, Gulbarga, Jalgaon, Kalyan, Kurla (Lokmanya Tilak Terminus), Malkapur, Mumbai CST, Nagpur, Nasik Road, Pune, Solapur, Thane, Wardha, Lonavala, Khandwa, Manmad, Amrawati, Miraj, Ahmednagar, Matheran, Badnera, Burhanpur, Chalisgaon, Devlali, Shegaon, Betul, Ballarshah, Karad, Sangli, Satara and Daund.

Eastern (51) : Andal Jn., Asansol, Baidyanathdham, Bandel, Barasat, Barddhaman, Baruipur Jn., Basirhat, Bhagalpur, Bidhannagar Road, Bolpur, Bongaon, Budge Budge, Canning, Dankuni, Dhakuria, Dum Dum, Durgapur, Garia, Ghutiari Sharif, Howrah, Jamalpur Jn., Jasidih, Krishnagar Road, Kulti, Labpur, Madhupur, Madhyamgram, Malda Town, Murshidabad, Nabadwip Dham, New Farakka, Ranaghat Jn., Raniganj, Sainthia, Sealdah, Sonarpur, Sultanganj, Tarakeswar, Tollyganj, Ultadanga, Barrackpur, Naihati, Rishra, Srirampur, Rampurhat, Sheoraphulli, Chandannagar, Sahibganj, Barharwa and Bariarpur.

East Central (55) : Akshayawat Rai Nagar, Ara, Buxar, Barauni Jn., Begusarai, Bettiah, Daltonganj, Danapur, Darbhanga, Dhanbad, Dehri-on-Sone, Gaya, Hajipur Jn., Janakpur Road, Khagaria, Koderma, Mokama, Motihari, Mughalsarai, Muzaffarpur, Nalanda, Nayagaon, Narkatiaganj jn, Nawadah, Parasnath, Patna, Sagauli jn, Sasaram, Samastipur, Sheikhpura, Sitamarhi, Sonepur Jn., Barkakana, Patna Sahib, Bakhtiyarpur, Biharsharif, Jamui, Jhajha, Kiul, Lakheesarai, Rajendra Nagar (T), Rajgir, Anugrah Narayan Road, Raxaul, Saharsa, Madhubani, Renukot, Singrauli, Chopan, Garhwa Road, Barh, Bhabua Road, Dalsinghsarai, Phulwarisarif and Mananpur.

East Coast (24) : Badakhandita, Bhadrak, Bhubaneswar, Brahmapur, Byree, Cuttack, Dhenkanal, Golanthra, Jajpur-Keonjhar Road, Kapilas Road, Khurda Road, Puri, Rahama, Sambalpur, Surla Road, Titlagarh, Visakhapatnam, Vizianagaram, Srikakulam, Palasa, Rayagada, Balugaon, Sambalpur Road and Kesinga.

Northern (80) : Ambala Cantt, Amritsar, Anandpur Sahib, Ayodhya, Baghpat Road, Baraut, Bareilly, Bhatinda, Beas, Chandigarh, Dehradun, Delhi, Delhi Cantt, Delhi Sarai Rohilla, Dhuri Jn., Faizabad, Faridabad, Firozpur,

Garhmukteshwar, Ghaziabad, Haridwar, H. Nizamuddin, Jullundur City, Jammu Tawi, Kalka, Kathua, Lucknow, Ludhiana, Merrut City, Moradabad, Nangloi, New Delhi, Panipat Jn., Pathankot, Patiala, Prayag, Rae-Bareli Jn., Saharanpur, Shimla, Varanasi, Rohtak, Delhi Shahdra, Ballabhgarh, Karnal, Sonipat, Meerut Cantt., Jaunpur, Pratapgarh, Sultanpur, Bhadohi, Akbarpur, Chakki Bank, Jallandhar Cantt, Phagwara, Shahjahanpur, Jagadhari, Sirhand jn., Muzaffarnagar, Kurukshetra, Sabzi Mandi, Palwal, Shakurbasti, Barabanki, Shahganj, Unnao, Janghai, Gurdaspur, Hoshiarpur, Roorkee, Najibabad, Rampur, Hardoi, Hapur, Chandausi, Rishikesh, Rajpura, Chandi Mandir, Abohar, Deoband and Bhodwal Majri.

North Central (21) : Agra Cantt, Agra Fort, Aligarh, Allahabad Jn., Etawah, Gwalior, Jhansi, Kanpur Central, Mathura Jn., Tundla, Mirzapur, Banda, Morena, Raja Ki Mandi, Fatehpur, Firozabad, Naini, Babina, Chitrakut Dham Karvi, Lalitpur and Orai.

North Eastern (34) : Badshah Nagar, Ballia, Basti, Chhapra Jn., Deoria Sadar, Gonda Jn., Gorakhpur, Izzatnagar Jn., Kathgodam, Katra, Lucknow, Manduadih, Mau Jn., Pilibhit, Rawatpur, Siwan Jn., Lucknow City, Allahabad City, Azamgarh, Bahraich, Barhani, Belthra Raod, Bhatni jn, Farrukhabad, Ghazipur City, Kasganj, Kashipur, Khalilabad, Lakhimpur, Lalkuan, Salempur, Sitapur , Varanasi City and Kaimganj.

Northeast Frontier (35) : Alipurduar Jn., Alubari Road, Araria Court, Coochbehar, Dalkolha, Dharmanagar, Dibrugarh, Dimapur, Ghum, Gosaigaonhat, Guwahati, Harishchandrapur, Jalpaiguri, Jorhat Town, Kamakhya, Katihar, Kishanganj, Kokrajhar, Lumding, Maal Bazar, New Alipurduar, New Bongaigaon, New Coochbehar, New Jalpaiguri, New Mal Jn., New Tinsukia, Purnea Jn, Raiganj, Rangia Jn., Silchar, Siliguri Town, Srirampur, Tezpur, Bongaigaon and Tinsukia.

North Western (26) : Abu Road, Ajmer, Bikaner, Hissar, Jaipur, Jodhpur, Rewari, Sri Ganga Nagar, Udaipur, Alwar, Falna, Rani, Marwar Jn, Beawar, Bhilwara, Pali Marwar, Jaisalmer, Nagaur, Makrana, Suratgarh, Bhiwani, Hanumangarh, Sirsa, Rana Pratapnagar, Kishangarh and Kosli.

Southern (48) : Alwaye, Arakkonam Jn, Calicut, Cannanore, Chengannaur, Chengalpattu, Chennai Beach, Chennai Central, Chennai Egmore, Coimbatore, Ernakulam Jn., Erode Jn., Kanniyakumari, Katpadi, Kayankulam, Kottayam, Madurai, Mambalam, Mangalore, Palghat, Pondicherry, Quilon (Kollam), Rameswaram, Salem, Tiruchchirappalli, Tirunelveli, Tiruttani, Trichur, Trivandrum Central, Tuticorin, Varkala, Jolarpettai, Dindigul, Shoranur, Tellicherry, Tiruppur, Thanjavur, Nagercoil, Tiruvalla, Ernakulam Town, Ambur, Kovilpatti, Virudhunagar, Badagara, Kankanadi, Tirur, Villupuram jn and Alleppey.

South Central (64) : Dharmavaram Jn., Guntakal, Guntur, Hyderabad, Kacheguda, Kakinada Town, Nanded, Nellore, Raichur, Rajahmundry, Secunderabad, Tirupati, Vijayawada, Warangal, Anakapalli, Anantapur, Aurangabad, Bhimavaram Town, Cuddapah, Eluru, Godavari, Jalna, Kazipet, Khammam, Ongole, Parbhani, Samalkot, Tenali, Adoni, Chirala, Kurnool Town, Machilipatnam, Manchiryal, Palakollu, Ramagundam, Tadepalligudem, Tandur, Tanuku, Tuni, Yadgir, Bhimavaram, Dhone, Dornakal, Gooty, Gudivada, Gudur, Mudkhed, Nadikudi, Nidadavolu, Pakala, Purna, Renigunta, Vikarabad, Annavaram, Basar, BhadrachalamRoad, Bidar, Mantralayam Road, Nagarsol, Nalgonda, Parlivaijnath, Srikhalahasti, Nandyal and Nizamabad.

South Eastern (22) : Adra, Bagnan, Balasore, Bishnupur, Bokaro Steel City, Chakradharpur, Contai Road, Garbeta, Hatia, Jhargram, Jharsuguda, Kharagpur, Kolaghat, Mecheda, Midnapore, Ranchi, Rourkela, Santragachi Jn., Tamluk, Tatanagar, Ulubaria and Purulia

South East Central (11) : Bilaspur, Durg, Raipur, Raigarh, Gondia, Champa, Shahdol, Bhatapara, Tilda, Rajnandgaon and Chhindwara.

South Western (22) : Bangalore Cantt, Bijapur, Hospet, Hubli, Mysore, Shimoga Town, Toranagallu, Vasco-de-gama, Belgaum, Bellary jn, Yesvanthpur jn, Alnavar, Bangalore City, Bangarpet jn, Davangere, Dharwad, Gadag, Hassan, Hasur, Krishnarajapuram, Londa jn and Tumkur.

Western (45) : Ahmedabad, Anand Jn., Bamnia, Bandra Terminus, Bharuch, Bhavnagar, Chittaurgarh, Dadar, Dharangaon, Dwarka, Gandhidham, Gandhigram, Indore, Mumbai Central, Navsari, Nimbahera, Okha, Rajkot, Ratlam, Surat, Ujjain, Vadodara, Valsad, Vapi, Ankleshwar, Nadiad, New Bhuj, Palanpur, Mhow, Jamnagar, Billimora, Udhana, Nandurbar, Maninagar, Mahesana, Dahod, Dewas, Mandsaur, Nagda, Nimach, Hapa, Surendranagar, Junagadh, Porbandar and Verawal.

West Central (20) : Bhopal, Damoh, Habibganj, Guna, Hoshangabad, Jabalpur, Katni Jn., Kota, Pipariya, Satna, Sawai Madhopur, Madanmahal, Sagour, Maihar, Rewa, Itarsi, Bina, Bharatpur, Gangapur City and Vidisha.

KRCL (1) : Madgaon.

RAILWAYS IN PARLIAMENT

14 States/UTs have been 100% Electrified by Indian Railways

S.No	STATE/UT	Electrified BG Rkm as on 30.06.2023
1	Chandigarh	16
2	Chhattisgarh	1,199
3	Delhi	183
4	Haryana	1,701
5	Himachal Pradesh	67
6	J&K	298
7	Jharkhand	2,558
8	Madhya Pradesh	4,822
9	Meghalaya	9
10	Odisha	2,822
11	Puducherry	21
12	Telangana	1,858
13	Uttar Pradesh	8,482
14	Uttarakhand	347
15	Bihar	3,614
16	Andhra Pradesh	3,841
17	Tamil Nadu	3,659
18	Maharashtra	5,441
19	West Bengal	3,682
20	Kerala	947
21	Gujarat	3,435
22	Punjab	1,915
23	Rajasthan	4,387
24	Goa	147
25	Karnataka	2,844
26	Assam	801
27	Arunachal Pradesh	-
28	Manipur	-
29	Mizoram	-
30	Nagaland	-
31	Tripura	-
	Total	**59,096**



As on 30th June, 2023, 59,096 Rkm of Broad Gauge network of Indian Railways (IR) have been electrified. Out of which, 37,011 Rkm have been electrified during the past nine years only. State/UT wise details of electrification are mentioned in the table above.

Sometimes, there is some delay in getting statutory clearances required for execution of electrification works.

For timely completion of railway electrification work, various steps have been taken by Indian Railways which include among others; formation of Project Monitoring Group (PMG) portal to resolve the constraint being faced during commissioning, creation of 'Gati Shakti Directorate' in Railway Board for smooth and speedy approval of projects at Railway Board level and ensuring effective project monitoring mechanism. In addition, large size projects are being executed in 'Engineering Procurement and Construction' (EPC) contract mode, assured funding is being arranged and financial powers are decentralized to field units to expedite the project execution and completion.

Existing Broad Gauge network falling in the following State/ Union Territory have been 100% electrified:

SN	State/Union Territory
1	Chandigarhh
2	Chhattisgarh
3	Delhi
4	Haryana
5	Himachal Pradesh
6	J&K
7	Jharkhand
8	Madhya Pradesh
9	Meghalaya
10	Odisha
11	Puducherry
12	Telangana
13	Uttar Pradesh
14	Uttarakhand

Electrification of 3,614 Rkm out of 3,710 Rkm and 3,435 Rkm out

of 3,862 Rkm have been completed in the State of Bihar and Gujarat respectively.

Indian Railways (IR) has aimed to become Net Zero Carbon Emitter by 2030. IR has taken a number of initiatives to reduce its carbon emissions which include use of energy efficient technologies like completely switching over to production of three phase electric locomotives with regenerative features, use of head on generation (HOG) technology, use of LED lights in buildings and coaches, star rated appliances, water conservation and its management and afforestation.

Further, the key strategies that have been identified for achieving the Net Zero Carbon emission target are procurement of power through renewable energy sources; shifting from diesel to electric traction; promotion of energy efficiency; and afforestation.

50 Vande Bharat Trains Introduced on IR network

Under Vision 2024, as on 1st April, 2023, total 251 Railway infrastructure projects (76 New Line, 19 Gauge Conversion and 156 Doubling), covering total length of 29,147 km, costing 4.92 lakh crore in the entire country including those falling fully/partly in Uttar Pradesh, Madhya Pradesh and Maharashtra are in planning/ sanction/construction stages, out of which 9,910 km track length has been commissioned and an expenditure of 2.45 lakh crore has been incurred upto March 2023.

Presently, Ministry of Railways has taken up construction of two Dedicated Freight Corridors (DFC) viz. Eastern Dedicated Freight Corridor (EDFC) from Ludhiana to Sonnagar (1337 km) and Western Dedicated Freight Corridor (WDFC) from Jawaharlal Nehru Port Terminal (JNPT) to Dadri (1506 km). So far, 2196 km (EDFC-1150km and WDFC-1046 km) out of total sanctioned length of 2843 km of DFC, has been completed.

Speeding up of trains is a constant endeavour and a continuous process on Indian Railways (IR). IR has also undertaken rationalization of time table in a scientific manner with the assistance of IIT-Bombay, inter-alia to speed up trains services by converting passenger trains to



Express services and Express services to Superfast services. Further, Indian Railways has introduced Vande Bharat trains, which have higher speed potential. Till 21st July, 2023, 50 Vande Bharat trains have been introduced on the IR network.

Presently, a High Speed Rail project namely Mumbai - Ahmedabad High Speed Rail (MAHSR) Project is undertaken with technical collaboration and financial assistance from the Government of Japan.

The National Rail Plan mentions the following routes for future possible development for high speed rail network:

(i) Delhi-Varanasi
(ii) Delhi-Ahmedabad
(iii) Mumbai-Nagpur
(iv) Mumbai-Hyderabad
(v) Chennai-Mysore
(vi) Delhi-Amritsar
(vii) Varanasi-Howrah

There is no Proposal to Privatise the Indian Railways

The details of the number of candidates empanelled by Railway Recruitment Boards (RRBs) for various Group 'C' posts (including Level 1) during 2020-2021 to 2022-2023 and current year (2023-2024, upto 30th June, 2023) are as under:

Year	Total number of empanelment made by RRBs (Level 1 to Level 7)
2020-2021	5,450
2021-2022	4,612
2022-2023*	85,888
2023-2024* (upto 30.06.2023)	50,885

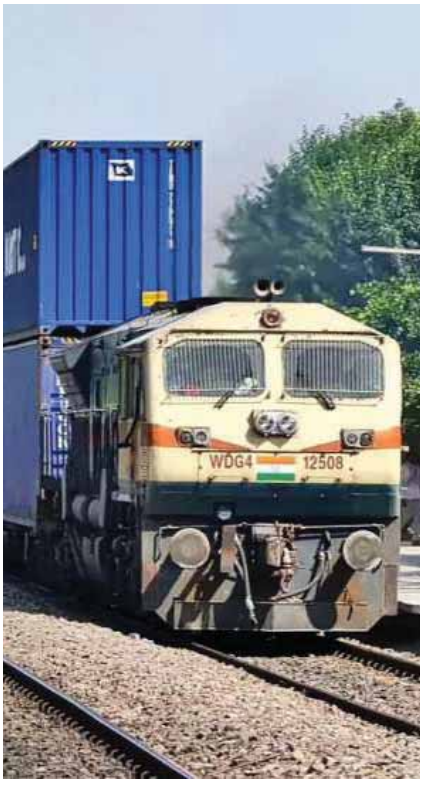
*Provisional

The details of the number of contractual workers engaged by the Railways during 2020-2021 to 2022-2023 are as under:

Year	Number of contractual workers engaged
2020-2021	4,079
2021-2022	8,823
2022-2023*	5,013

*Provisional

There is no proposal to privatise the Indian Railways.



During 2023-24, the Overall Utilization of Vande Bharat Trains has been 99.60%

To opitimise utilization of accommodation in AC chair car and Executive class, zonal railways delegated power to introduce discounts up to a maximum of 25% of basic fare.

It is a continuous endeavour of Indian Railways to reduce the operational cost of trains. Zonal railways had been delegated power to introduce discounts up to a maximum of 25% of basic fare in AC chair car and Executive class in order to optimize utilization of accommodation (vide commercial circular no. 40 of 2019, dated 27th August, 2019). This authorized zonal railways to offer competitive fares over certain segments after analyzing the travel trends for all competitive modes in the region and also estimating the future occupancy potential.



The same provisions were extended with some minor modifications (vide commercial circular no. 11 of 2023, dated 8th July, 2023). Further, fare rationalization is a continuous process to optimize utilization of travel accommodation in trains.

During current financial year, 2023-24 (up to June 2023), the overall utilization of Vande Bharat trains has been 99.60%.

The operational cost depends on various factors including traction energy cost and traction energy consumption. It is continuous endeavour of Indian Railways to reduce the operational cost of trains. Vande Bharat rakes are having regenerative braking system as its core design feature which feeds braking energy back to Over Head Equipment (OHE) and thus reduces traction energy consumption.

850 'One Station One Product' (OSOP) Outlets are Operational at 782 Stations



OSOP scheme has been launched with objectives to promote 'Vocal for Local' vision of Govt. of India.

At present, 850 'One Station One Product' (OSOP) outlets are operational at 782 stations over Indian Railways including 5 outlets over Ranchi Division. Parliamentary constituency-wise data of OSOP outlets is not maintained by Indian Railways.

One Station One Product' (OSOP) scheme has been launched by Indian Railways with objectives to promote 'Vocal for Local' vision of the Government of India, provide a market for local /indigenous products and create additional income opportunities for the marginalised sections of society. Features of the OSOP scheme are as under:

Railways to provide standard design outlets-fixed stalls/kiosks, portable stalls/trolleys at railway stations for showcasing, selling and giving high visibility to indigenous/ local products.

The products category is indigenous/Geographical Indications (GI) tagged/local to that place and could include artefacts, handicrafts, textiles and handlooms, toys, leather products, traditional appliances/ instruments, garments, gems and jewellery, etc made by local artisans, weavers, craftsmen, tribes, etc and processed, semi/processed and other food products indigenously made/grown in the area.

Individuals at the bottom of the pyramid/marginalised and weaker sections and self help groups to be encouraged.

Allotment for a period from 15 days up to 3 months with a nominal registration fee for participation in the Scheme.

Allotment is to be done to all applicants who meet objectives of the scheme on rotation basis.

The beneficiary category under this scheme includes the following:

- Individual Artisans
- Individual Craftsman
- Individual Weavers
- Tribals
- Farmers
- Members of Selfhelp Group
- Members of Women Selfhelp Groups
- Members associated with registered Micro-Enterprises
- Members associated with Social Organisations, State Govt Bodies, etc.

NHSRCL Constructed Three River Bridges in the Last One Month for Mumbai-Ahmedabad High Speed Rail Corridor



MAHSR corridor has made a significant progress as three river bridges have been completed in the last one month in the state of Gujarat.

The first river bridge was completed on Purna river, Navsari district.

Salient features of the bridge

- Length of the bridge is 360 m.
- Consists of 9 (nine) full span girders (40 m each).
- Height of piers—10 m to 20 m.
- Circular piers of 4 m and 5 m diameter.
- The bridge is in between Bilimora and Surat HSR station.
- Continuous monitoring of high and low tides from Arabian Sea was done during the construction.
- Foundation work was challenging as water level in the river was rising 5-6 m (fortnightly) during high tides.

The second river bridge was completed on Mindhola river in Navsari district.

Salient features of the bridge

- Length of the bridge is 240 m.
- Consists of 6 (six) full span girders (40 m. each).
- Height of piers—10 m to 15 m.
- Circular piers of 4 m. diameter
- This bridge is between Bilimora and Surat HSR station.
- Continuous monitoring of high and low tides from Arabian Sea was done during the construction.

The third river bridge was completed on Ambika river, Navsari district.

Salient features of the bridge

- Length of the bridge is 200 m.
- Consists of 5 (five) full span girders (40 m. each)
- Height of piers— 12.6 m to 23.4 m.
- Circular piers of 4 m, 5 m and 5.5 m diameter.
- This bridge is between Bilimora and Surat HSR station.
- Major challenges involved in the construction process:
  - Steep slope of the river bank.
  - Underground rocky strata during piling.
  - Maximum pier height including pier cap was around 26 m (equal to 10 storey building), to work at this height was very challenging inside the river.

Till date, four river bridges have been completed for MAHSR corridor in the last six months.

There are total 24 river bridges on MAHSR corridor (Gujarat and Maharashtra) out of which 20 are in Gujarat and 4 in Maharashtra.

The longest river bridge of 1.2 km is being constructed on Narmada river, Gujarat and 2.28 km long bridge will be constructed on Vaitarna river in Maharashtra.

MAHSR Project Status

- Pile:305.9 km
- Foundation:251.2 km
- Pier:208.9 km
- Viaduct:69.3 km
- HSR stations in Gujarat: The work on 8 HSR stations: Vapi, Bilimora, Surat, Bharuch, Vadodara, Anand, Ahmedabad and Sabarmati are under various stages of construction.

HSR Station	Rail Level Slab	Concourse Level Slab
Surat	300 m	450 m (Completed)
Anand	250 m	425 m (Completed)
Bilimora	100 m	Concourse at ground level only
Ahmedabad	Work has started	137 m

NHSRCL Awards Last Civil Package for MAHSR Alignment in Maharashtra 100% Civil Contracts Awarded for MAHSR Corridor

NHSRCL awards last civil package (C3) having 135 km of Mumbai-Ahmedabad HSR alignment including 7 tunnels and longest bridge of 2 km over Vaitarna river in the state of Maharashtra.

With this, all three civil packages of Maharashtra portion: Construction of Mumbai (BKC) HSR station (C1), 21 km of tunnel including 7 km undersea tunnel (C 2) and 135 km of alignment of MAHSR corridor (C3) have been awarded.

This also marks the award of all the 11 civil packages of 508 km long MAHSR corridor, comprising 465 km long viaducts, 12 HSR stations, 3 rolling stock depots, 28 steel bridges comprising 10 km of viaduct, 24 river bridges, 9 tunnels including 7 km long India's first undersea tunnel.

The MAHSR corridor is divided into 28 contract packages, out of which 11 are civil packages, which were awarded in a span of 33 months. The first civil contract for the construction of 237 km viaducts including four HSR stations (Vapi, Bilimora, Surat and Bharuch) and Surat rolling stock depot in the state of Gujarat was awarded on 28th October 2020, which was also the largest civil contract awarded in India. And the last civil contract of 135 km viaduct with three HSR stations (Thane, Virar and Boisar) in the state of Maharashtra was awarded on 19th July, 2023.

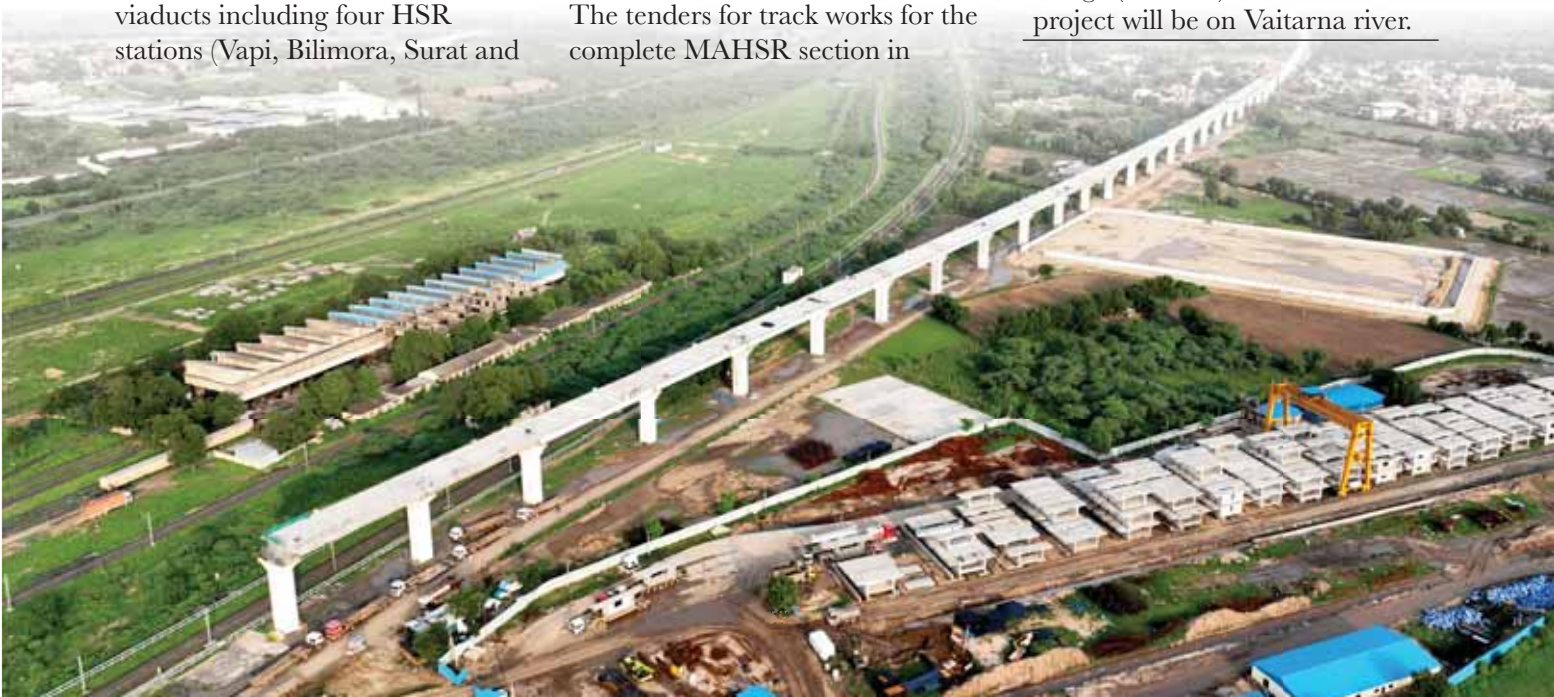
To expedite the construction of viaducts, for the first time in India, Full span girders of 40 m length weighting 970 ton have been launched through one of a kind Full Span Launching Equipment set: Straddle Carrier, Bridge Gantry, Girder Transporter and Girder Launcher, which are designed and manufactured in India. This technology is about 10 times faster than the conventional segment launching technology and has provided a new dimension to the construction industry.

This mega infrastructure project is expected to consume 1.6 cr ton of cement and 17 lakh MT of steel and act as a catalyst to give the cement and steel industries a boost.

The tenders for track works for the complete MAHSR section in Gujarat i.e. 352 km out of total 508 km have also been awarded. The training of Indian Engineers and Work Leaders for High-Speed Rail Track system for MAHSR corridor has already started. About 1000 engineers/work leaders/ technicians are planned to be trained in the specially created facility at Surat Depot. Around 20 Japanese experts will impart intensive training to the Indian engineers, supervisors and technicians and certify their skills.

Additional details on Package MAHSR-C-3

Total length 135 km (between Shilphata and Zaroli village on Maharashtra -Gujarat border)
Viaduct and bridges: 124 km
Bridges and crossings: 36 including 12 steel bridges
Stations: 3 namely Thane, Virar and Boisar (all elevated).
Mountain tunnels: 6
River bridges: Ulhas river, Vaitarna and Jagani, longest bridge (2.28 km) of MAHSR project will be on Vaitarna river.



INDIAN

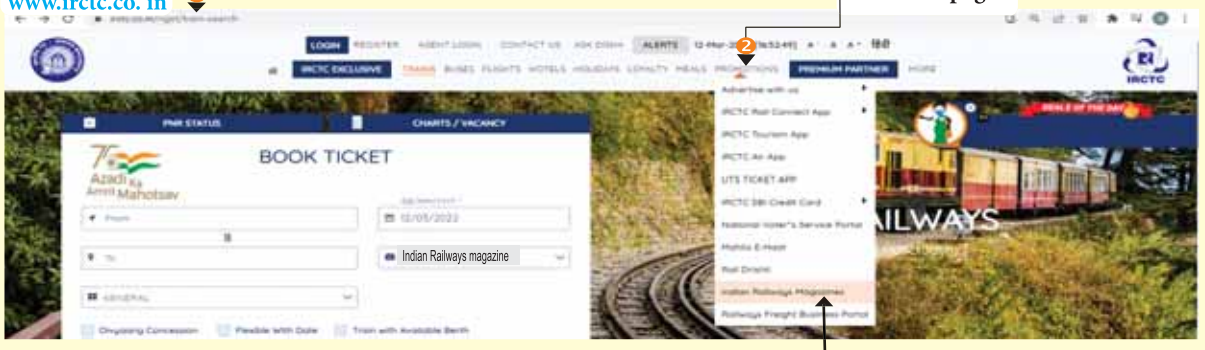
The easy procedure of subscribing

STEP 1

For online membreship please go to www.irctc.co. in ❶

You can go directly to www.irctctourism.com/IRBRmag/#/home

Please go to the Promotions of this page ❷



❸ Click on 'Indian Railways' magazine

STEP 3

❶ If you have IRTCT login and password, use it in the box.

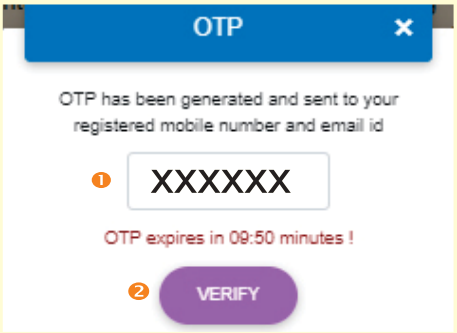


❷ If you don't have login ID, click the guest login.

❸ Please submit your email and mobile no. in it

❹ Press SUBMIT

STEP 5



❶ Write the OTP received on your registered mobile no.in the box and

❷ Verify

STEP 6



❶ Payment mode (card, net banking, UPI, wallet, international card and ipay) and

❷ Choose the option of payment gateway.

❸ Press MAKE PAYMENT

RAILWAYS
online to Indian Railways magazine

STEP 2

1. If you are a railway personnel, please click' yes ', if not click ' no'.
2. If yes, please upload your RQID/ I D/PPO no. and a scanned copy of your authenticated I D proof.
3. For Bharatiya Rail patrika , click Hindi and for Indian Railways magazine, click English
4. Click one, two or three for the no. of years for which you want to subscribe.



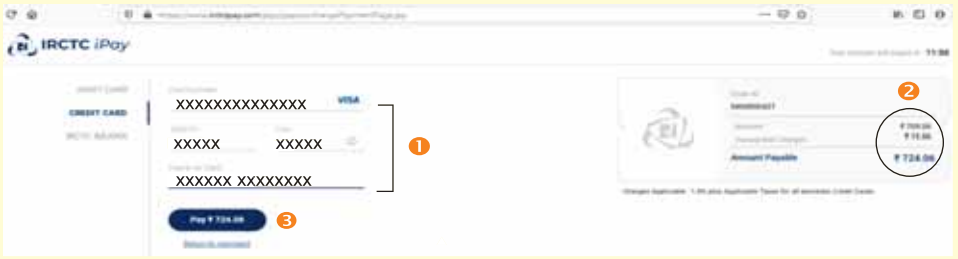
5. Click terms and conditions and read them carefully. If agreed, please tick mark the box.

STEP 4

1. Register your full address with Pincode.



STEP 7



1. Fill up the details of payment mode.
2. If satisfied press PAY.
3. See the details of payment amount.
4. Payment successfully will appear on the screen on completion of bank OTP procedure.

PAY ATTENTION

- The prescribed charges are levied at the time of payment. Please check while making payment.
- On completion of payment process, you will get the confirmation about your membership through SMS and email.
- On receipt of payment, regular delivery of magazine from the prescribed month will be made.

For more details contact- 011- 47845378, 47845380 email : irbrhelp@gmail.com

MAHSR Project Status as on 18th July, 2023

Project Progress in Gujarat
Viaduct: Total- 352 km
Pile: 307.5 km
Foundation: 253.3 km
Pier (including stations): 211.6 km
Pier (excluding stations): 209.36 km
No. of Girders: 2493
Girder Casting: 99.7 km
Viaduct (Girder Launching): 74.7 km

HSR stations in Gujarat: The work on 8 HSR stations: Vapi, Bilimora, Surat, Bharuch, Vadodara, Anand, Ahmedabad and Sabarmati are under various stages of construction.

HSR Station	Rail Level Slab	Concourse Level Slab
Surat	350 m	450 m (Completed)
Anand	250 m	425 m (Completed)
Bilimora	100 m	Concourse at ground level only
Ahmedabad	Work started	137 m

The bridge works on Par (Valsad district), Purna (Navsari district), Mindhola (Navsari district) and Ambika (Navsari district) river has already been completed.

Project Progress in Maharashtra

- All civil packages (C1, C2 and C3) have been awarded
- Preliminary works for construction of Mumbai HSR station and 21 km tunnel between Mumbai HSR station and Shilphata have been started.

Land Acquisition Status

Overall:-99.45 %

Gujarat:-99.30%

DNH:-100 %

Maharashtra:-99.79 %



ZONAL RAILWAYS AND PRODUCTION UNITS NEWS

GM/BLW Flagged Off the 1500th Electric Locomotive

General Manager Shri Basudev Panda on 8th June, 2023 flagged off the BLW manufactured 1500th Electric Locomotive No. 43363 WAG-9HC from New Loco Test Shop located at the workshop. With the production of only two electric locomotives in the financial year 2016-17, BLW touched new heights in its manufacturing of Loco, which kept on increasing year after year. This electric locomotive manufactured by BLW is being sent to Bilaspur shed of South East Central Railway.



100th Locomotive of FY 2023-24 Flagged Off by General Manager



On 26th June, 2023, the 100th electric locomotive,WAG 9HH (90039) of the financial year 2023-24 was flagged off, from the Test Shed of Shop-19 of CLW workshop premises by staffs superannuating during the month of June-2023 on 26th June, 2023. Shri Debi Prasad Dash, General Manager, CLW along with principal heads of department, senior officers, supervisors and staff were present during the flag off. This remarkable accomplishment was achieved in a record-breaking 70 working days, marking the fastest production rate in any fiscal year.The GM congratulated the entire 'Team CLW' for this remarkable achievement.

Ministry of Railways Committed to Speedy Completion of Agartala–Akhaura Bangladesh Connectivity Project

Construction of Agartala-Akhaura international connectivity rail line project between India and Bangladesh is at an advance stage of completion. The work for this railway project is going on in full swing to connect Agartala, the capital city of Tripura to Akhaura in Bangladesh.The 15.064 km long railway line (5.05 km in India and 10.014 km in Bangladesh) would link Bangladesh's Akhaura through an international immigration station at Nischintapur, which will be a dual gauge station for both passenger and goods interchange between India and Bangladesh. The project includes one major bridge and three minor bridges.



Diesel Loco Shed, Hubballi Celebrate 25 Years of Technological Excellence



The Diesel Loco Shed in Hubballi, Karnataka, proudly celebrated its silver jubilee, marking a significant milestone of 25 years of dedicated service. Established on 15th April 1998, the shed has played a pivotal role in SWR, showcasing its commitment to innovation and technological advancements in locomotive maintenance. General Manager Shri Sanjeev Kishore inaugurated the new state-of-the-art Chemical & Metallurgical Laboratory and flagged off the WDP4B-40057 Locomotive. The livery of this locomotive was based on the theme of Namma Karunaa Du ('Our Karnataka').

SWR Celebrated World Heritage Day

SWR celebrated World Heritage Day at the Rail Museums in Hubballi and Mysuru on April 18, 2023. As part of this seminar a quiz competition on Railway heritage and climate change were conducted for students at Rail Museum, Hubballi and prizes were distributed to winners.

An essay contest was held for school students at the Mysuru Rail Museum.



PREM Meeting Conducted with General Manager



On April 27, 2023, the meeting of participation of railway employees in management (PREM) at the zonal level was held under the chairmanship of General Manager Shri Sudhir Kumar Gupta. In this meeting, President of West Central Rail Mazdoor Sangh Shri C.M. Upadhyay; President of West Central Railway Employees Union Shri Philip Oman; General Secretary of West Central Railway Officers Association Shri Mani Bhushan Singh; General Secretary of West Central Railway Promotee Officers Association, Shri Sunil Kumar Srivastava; President of West Central Railway SC/ST Railway Employees Association, Shri Rakesh Kumar; General Secretary of West Central Railway OBC Railway Employees Association, Shri Purshottam Yadav; General Secretary, West Central Railway Employees Union, Shri Mukesh Galav; General Secretary, West Central Railway Mazdoor Sangh, Shri Ashok Sharma and, all other members were also present.

New General Manager of South Eastern Railway



Shri Anil Kumar Mishra has taken over the charge of General Manager, South Eastern Railway on 1st July, 2023. Prior to this, Shri Mishra was AGM/NER. Shri Anil Kumar Mishra is an IRSSE (Indian Railway Service of Signal Engineers) Officer of 1987 batch and joined Indian Railways in 1989.

Shri Mishra had graduated from University of Roorkee (now IIT/ Roorkee) in Electronic & Communication Engineering and has completed his M. Tech. from IIT, Delhi before joining the Indian Railways. He has undergone several trainings abroad i.e. on Mass Transit Railway (MTR) in Hong Kong, and on High Speed Railway in Japan. He has also visited China, United Kingdom, Germany and Norway for inspection of Mobile Train Radio Communication System. He has also undergone training in SDA, Bocconi Business School, Milan, Italy. Shri Mishra has keen interest in sports and socio-cultural activities.

New General Manager of Rail Wheel Factory

Ms. Archana Joshi, an officer of Indian Railway Traffic Service (IRTS) of 1985 batch has assumed charge as General Manager, Rail Wheel Factory. She was GM, South Eastern Railway before taking over as GM, RWF.

Ms. Joshi has worked in different Zonal Railways i.e. Northern Railway, North Western Railway, West Central Railway and North Eastern Railway in various capacities Ms. Joshi also has the distinction of having worked in Ministry of Culture and Ministry of Environment & Forests dealing with international cooperation issues in both the ministries.

She has travelled extensively, trained internationally in USA and Europe and her contribution in rail transportation over Indian Railways is noteworthy, vast and varied. She has keen interest in sports and social cultural activities.



New Director General of RDSO



Shri Ajay Kumar Rana has joined the post of Director General—RDSO on 1st July, 2023. Shri Rana was earlier working as Principal Chief Mechanical Engineer in North Central Railway. He graduated from Delhi College of Engineering in the year 1985 and belongs to IRSME 1987 batch. He also holds an MBA degree from the Faculty of Management Studies (FMS) of the University of Delhi.

He has also worked on deputation as Chief Vigilance Officer (CVO) in Central Public Works Department (CPWD), Delhi under the Ministry of Housing and Urban Affairs and was also given additional charge of the CVO's post at National Buildings Construction Corporation Limited (NBCC). He also had a brief stint as Group General Manager (Mech.) in RITES Ltd. Gurgaon and Diesel Loco Modernization Works (DMW), Patiala.

Sayantan Das Wins Silver in Nepal



Shri Sayantan Das, a Metroman and also the 81st Grandmaster of India has made India proud once again by winning silver medal in the SACC Championship.

In the South Asian Chess Council (SACC) Championship—2023 (Open), he scored 7.5 points out of 9 rounds and secured 2nd position in this tourney. There were total 10 players from Nepal, India, Pakistan, Bhutan and Bangladesh who took part in this tournament. South Asian Chess Council (SACC) Championship was held from 13th June to 19th June 2023 at Lalitpur, Nepal. After becoming 81st Grandmaster of India by virtue of winning Cannes Open, 2023 in february, Sayantan also won Chessemy Open, 2023 held in Germany in March. Shri P Uday Kumar Reddy, General Manager, Metro Railway has congratulated Sayantan for this marvellous achievement.

SWR Sports Team Won Gold Medal

The SWR Men's Aquatic Team bagged a gold medal in the 63rd All India Inter-Railway Aquatics Championship organised by Eastern Railway Sports Association in Kolkata from 5th to 9th June, 2023. A total of 17 aquatic teams participated in this competition. The South Western Railway Men's Aquatic Team won the gold medal in this competition. A total of 22 members of the team participated under the direction of SWR aquatic (Swimming) coach Shri Thomas Chaura.



NER Sports Achievements





Shri Ajay Saroj, working as a T.T.E. in Varanasi division, has achieved a brilliant achievement by winning Gold medal in 1500 meters race and Ms. Priyanka Goswani won Silver medal in 20 kms Walk race in Senior Athletics Asian Championship 2023 held in Bangkok, Thailand from 12th to 16th July, 2023.

President of North Eastern Railway Sports Association Shri Yogesh Mohan and General Secretary Shri Pankaj Kumar Singh congratulated Shri Ajay Saroj and Ms. Priyanka Goswani on their brilliant achievement. Shri Sanjit Pradhan of NER and Shri Yogesh Padukone of Central Railway won the 70th All India Inter Railway Badminton Championship (Doubles) 2023-24 in the age group above 50 held at Hyderabad.

SPORTS

35th All India Railway Chess Championship Organised in West Central Railway

The 35th All India Railway Chess Championship was organised from 2nd July to 8th July, 2023, at the Railway Stadium of West Central Railway, Jabalpur. About 80 chess players, including 10 grandmasters and 17 international masters, from 14 Zonal Railway teams participated in this competition. The winners of the competition were awarded by Shri Sudhir Kumar Gupta, GM/WCR. A team championship and an individual championship were organised in this competition. In the Team Championship, Integral Coach Factory, Chennai, got the first position, Eastern Railway, Kolkata, got the second position, and Metro Rail, Kolkata, got the third position. Similarly, in the Individual Championship,



International Master Nilesh Saha, South Eastern Railway, Kolkata, got the first position, International Master Aronyak Ghosh, Eastern Railway, Kolkata, got the second position, and International Master CRG Krishna, South Western Railway, Hubli, got the third position. On this occasion, all the Grand Masters and International Arbiters were also honoured by the Chief Guest.

FOR PUBLISHING ADVERTISEMENT IN OUR MAGAZINE

Rate for Advertisement in four colours

POSITION	REGULAR ISSUES		Special Issue
	Monthly Issues		Annual Issue
	Casual Rates	Contract Rates	Rates
Back Cover	₹ 11,400	₹10,450	₹ 13,300
2nd Cover	₹.10,450	₹9500	₹ 12,350
3rd Cover	₹ 9500	₹8550	₹ 11,400
Full Page (Special Position i.e. before/after text pages)	₹8550	₹7600	₹ 9500
Full Page	₹7600	₹ 6650	₹ 8550
Half Page	₹ 5130	₹ 4180	₹ 6650
Spread over two adjacent pages	₹15,000	₹13,300	₹ 17,000
Spread over two adjacent pages (Special Position)	₹16,500	₹ 14,700	₹ 18,500

Contract Rate defines that at least three insertions to be published.

Plus 5% GST or IGST Extra

Mechanical Data: Overall size: 28 cm x 20.5 cm; Print Area: 23 cm x 16.5 cm
Advertisement Material : Art pull/CD/Soft copy through Mail
Mode of Payment: Demand Draft in favour of Business Manager, Indian Railways payable at New Delhi or Cash may be deposited in Room No. 310, Rail Bhavan, New Delhi–110001

Details for NEFT

Name : P.A.O., RAILWAY BOARD **A/c. No**.: 2110101013 **IFS Code**: RBIS0NDPA01
Bank Name: RBI **Bank Address**: Parliament Street, New Delhi-110001
GST : 07AAAGM0289C1ZL **PAN** : AAAGM0289C

Please send the NEFT details over e-mail of the undersigned. (bmpr310rb@gmail.com)

Payment through Cheque is not acceptable.

For any queries please contact Shri Lalit Kumar Dhankar, Business Manager over phone no. 011-47845378, 23382531, 23303665 and email at bmpr310rb@gmail.com



Ajay Kumar Saroj and Jyothi Yarraji secured a Gold medal in 1500m and 100m Hurdles events respectively in the Asian Athletics Championship 2023 held at Bangkok, Thailand.

Indian Railways athlete Parul Chaudhary clinched the Gold medal in the women's 3000m steeplechase event at the Asian Athletics Championships being held at Bangkok, Thailand.





Indian Railways athlete Abhishek Pal, won the first Bronze medal for India in the men's 10.000-meter race in the Asian Athletics Championship held at Bangkok, Thailand.

Transforming into World Class Railway Stations



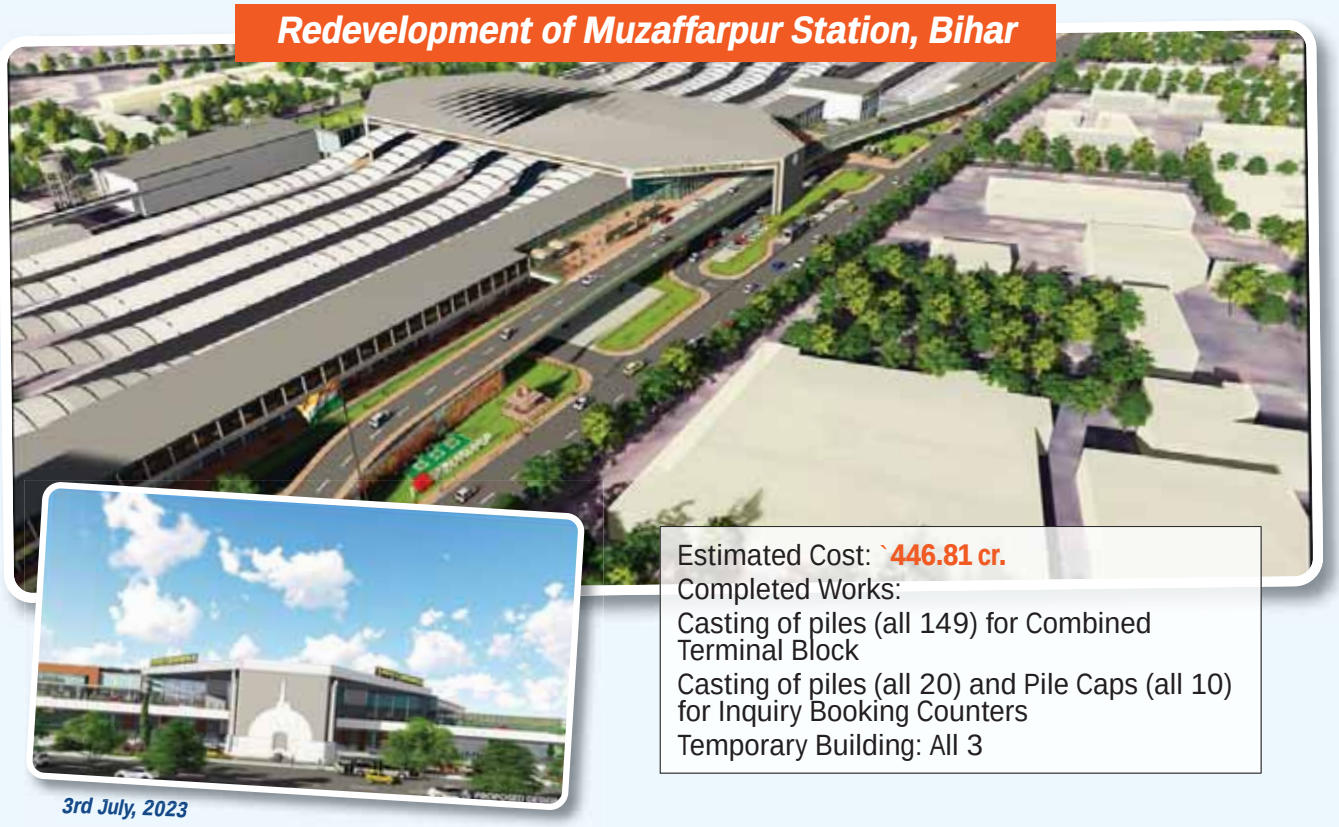
The to-be redeveloped ***Yeswantpur railway station*** *in Karnataka.*



Hon'ble PM Shri Narendra Modi laid the foundation stone of redevelopment of the ***Secunderabad Railway Station*** *on 8th of April. Naye Bharat Ka Naya Station for Secunderabad will have: Climate Sustainable Design, Multi-modal Transport Hub and World Class Amenities*

Progress Report

Redevelopment of Muzaffarpur Station, Bihar



3rd July, 2023

Estimated Cost: `446.81 cr.

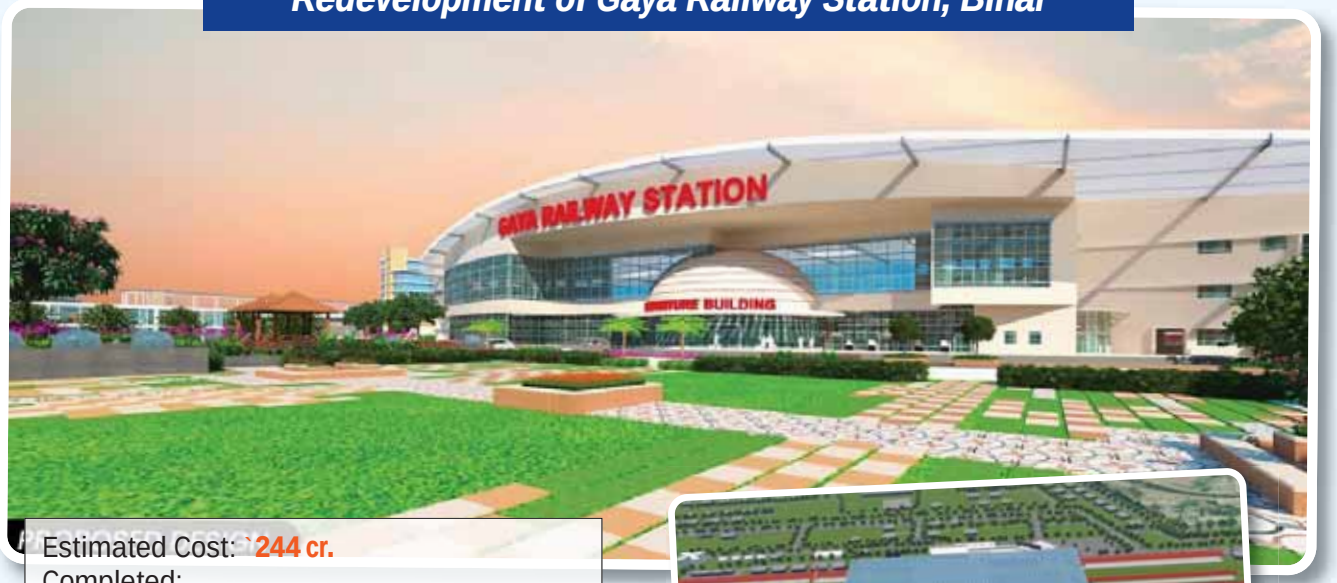
Completed Works:

Casting of piles (all 149) for Combined Terminal Block

Casting of piles (all 20) and Pile Caps (all 10) for Inquiry Booking Counters

Temporary Building: All 3

Redevelopment of Gaya Railway Station, Bihar



Estimated Cost: `244 cr.

Completed:

IT/Exchange and RMS Building terrace floor slab casting

In Progress: Casting of north side multilevel bike parking ramp

IT/Exchange, RMS and Arrival West building brickwork



13th July, 2023

Redevelopment of Ranchi Railway Station, Jharkhand

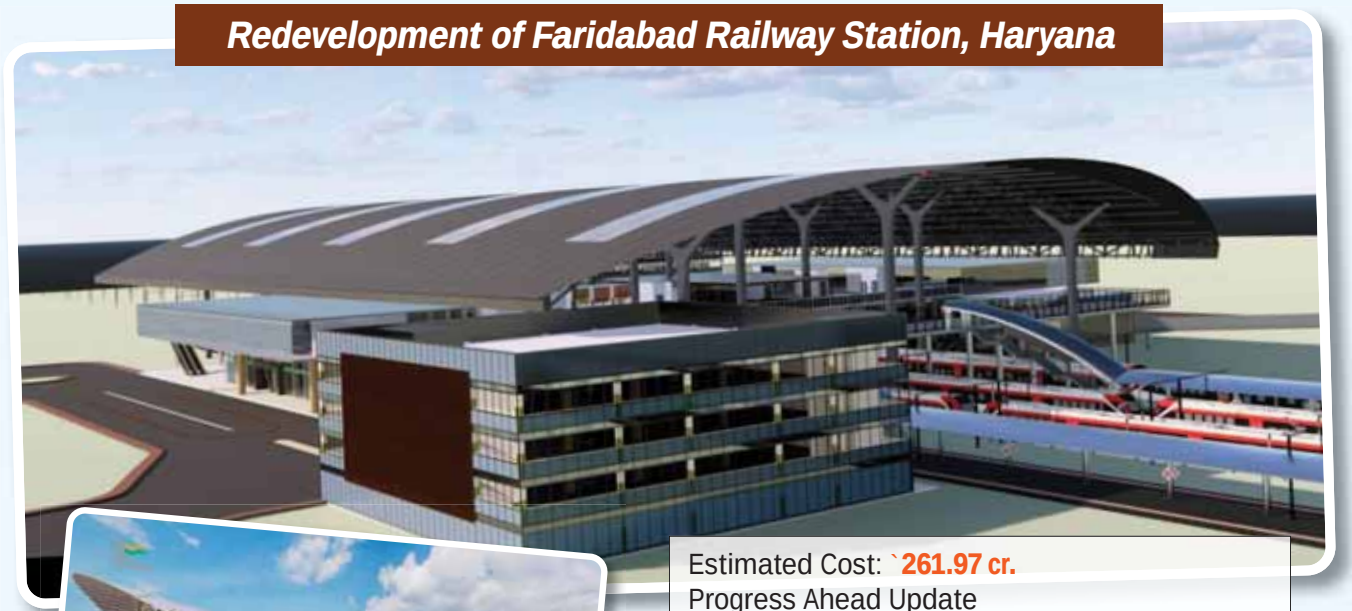


Estimated Cost: `330.56 cr.
Completed Works:
Topography and Soil Investigation
Type IV quarters slab casting
Ladies RPF barrack building slab casting
Road at South side alignment



5th July, 2023

Redevelopment of Faridabad Railway Station, Haryana



Estimated Cost: `261.97 cr.
Progress Ahead Update
In Progress Work:
Design of the North foot over bridge (FOB)
Multi-Level car parking construction
Completed: Dismantling of old Railway quarters



10th July, 2023

Redevelopment of Rameswaram Railway Station, Tamil Nadu





14th July, 2023

Awarded Cost: `90 cr.

Completed works:

1. Plinth Beam & Foundation in Parcel Office
2. Lintel Level Shuttering & Concrete Work in the MFC Building
3. Pump Room Concrete Work for Residential Tower

Redevelopment of Dakaniya Talav Railway Station, Rajasthan



Completed Works:

Topography Survey

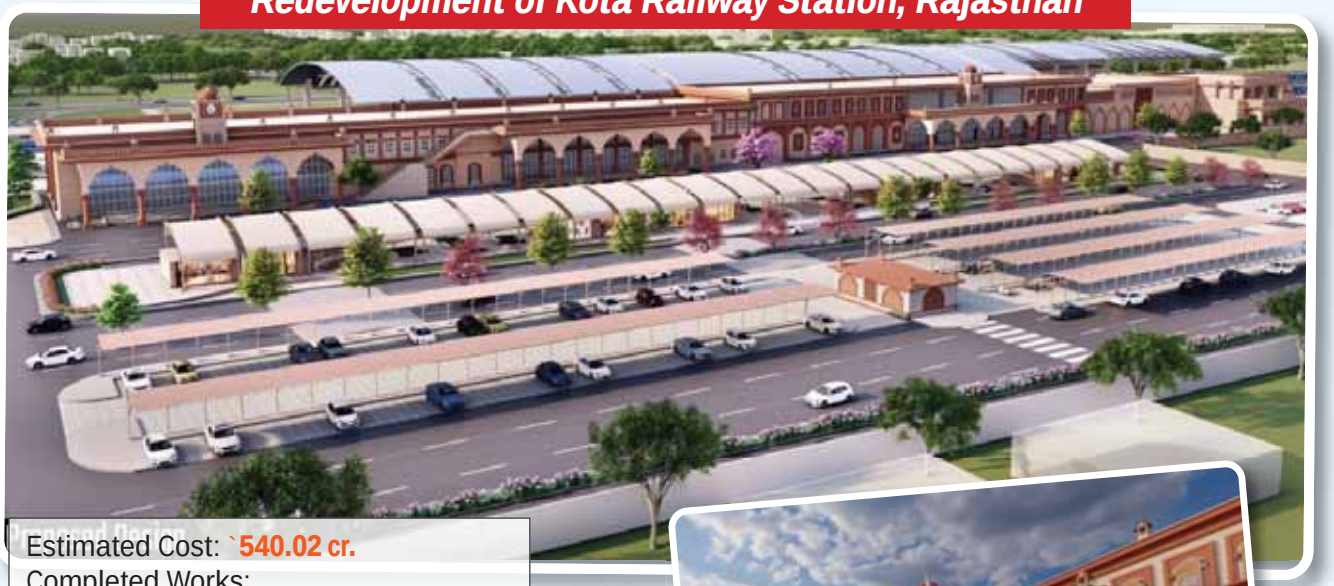
Foundation Excavation work for Front station, Rear Station building and Parcel office

Concrete Casting work up to Lintel Level for Relay and Panel Room



15th July, 2023

Redevelopment of Kota Railway Station, Rajasthan



Estimated Cost: `540.02 cr.

Completed Works:

Topography Survey & Soil Exploration

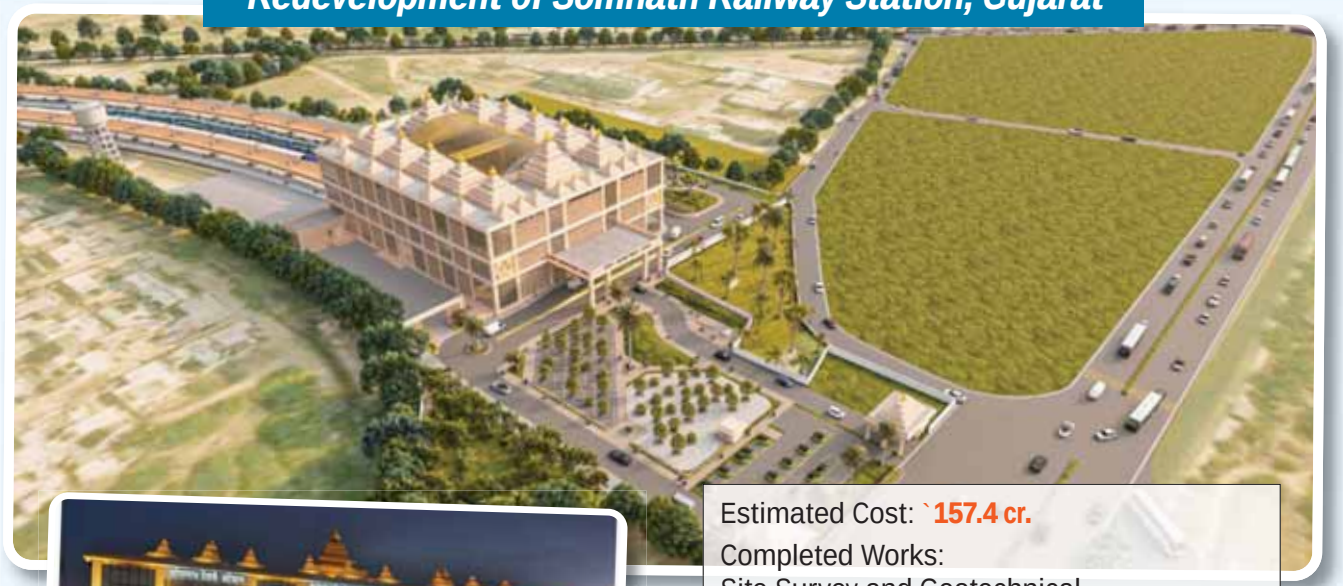
Temporary Ticket Booking Counter towards PF. No. 4

Foundation excavation completed for Community Hall, Railway Institute and Electric Substation



17th July, 2023

Redevelopment of Somnath Railway Station, Gujarat



Estimated Cost: `157.4 cr.

Completed Works:

Site Survey and Geotechnical investigations

EI building for operations commissioned

Work in Progress: PCC in foundation

RCC work in Raft and footing



24th July, 2023

Redevelopment of Ayodhya Railway Station, UP



Completed Works: Station Building, Parking areas

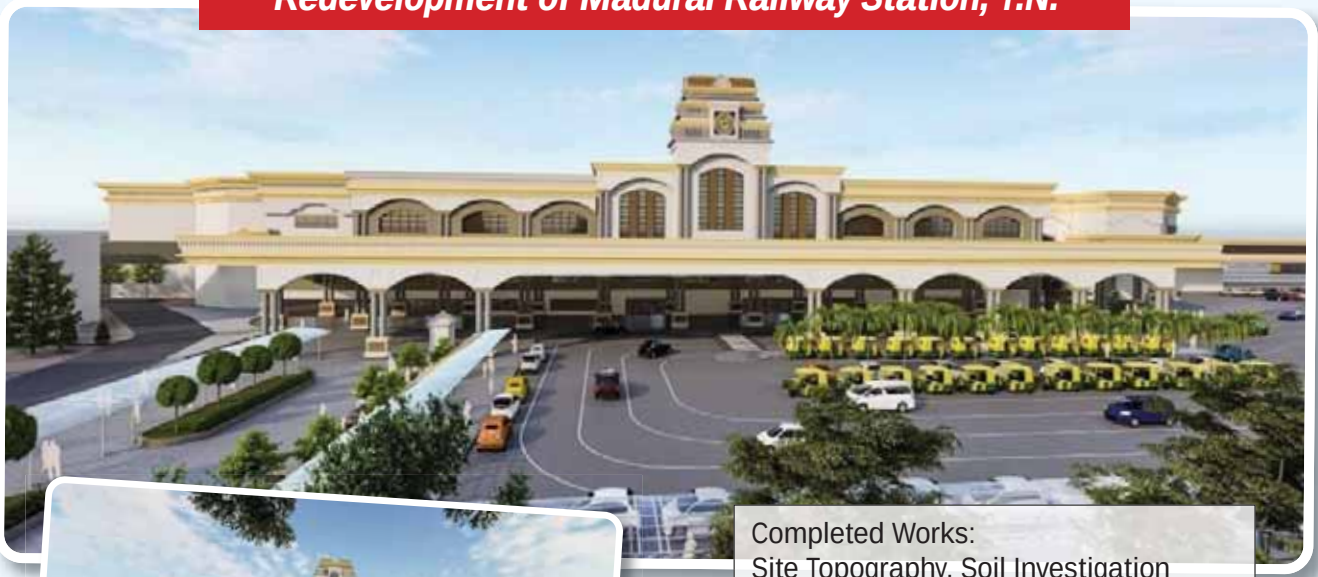
External Water supply, External Electrification, Electrical Installations

Station Building Signage



20th July, 2023

Redevelopment of Madurai Railway Station, T.N.





21st July, 2023

Completed Works:

Site Topography, Soil Investigation works

RPF Canteen Building, Substation Building: Foundation PCC and Backfilling, Footing and Column work up to plinth level

East Terminal Building stage-1: 86/262 piling work

Redevelopment Update of Bengaluru Cantt. Railway Station, Karnataka





Established: Site for engineers
Completed: Batching plant for ready mix concrete
In Progress: 24 m diversion road
In Progress: Utilities shifting

26th July, 2023

Guntur-Guntakal Doubling with Electrification Project (401 km), A.P



10.7 km Guntakal-Maddikera Doubling with Electrification Rail line commissioned

232 km stretch of Guntur-Guntkal section is completed



27th July, 2023

Madurai-Tuticorin Doubling Project (160 Km)



Project Cost: `1890 cr.

Progress: 100% completed with CRS Inspection

This will enhance line capacity & reduce travel time between Chennai and Tuticorin, Tirunelveli and towns in South Tamil Nadu



13th July, 2023

Rishikesh-Karnaprayag New Rail Line Project update





13th July, 2023

Overall Progress: 41 %
Tunnelling Work: 115 km

Bridges

3 Important Rail Bridges, 3 Road Bridges and 25 minor bridges completed

Khurda Road-Balangir Rail Line Project (301 km)



Recent CRS inspection on Khambeswarpalli - Jhartarbha Section Completed

Estimated Cost: **`3791.66 cr.**

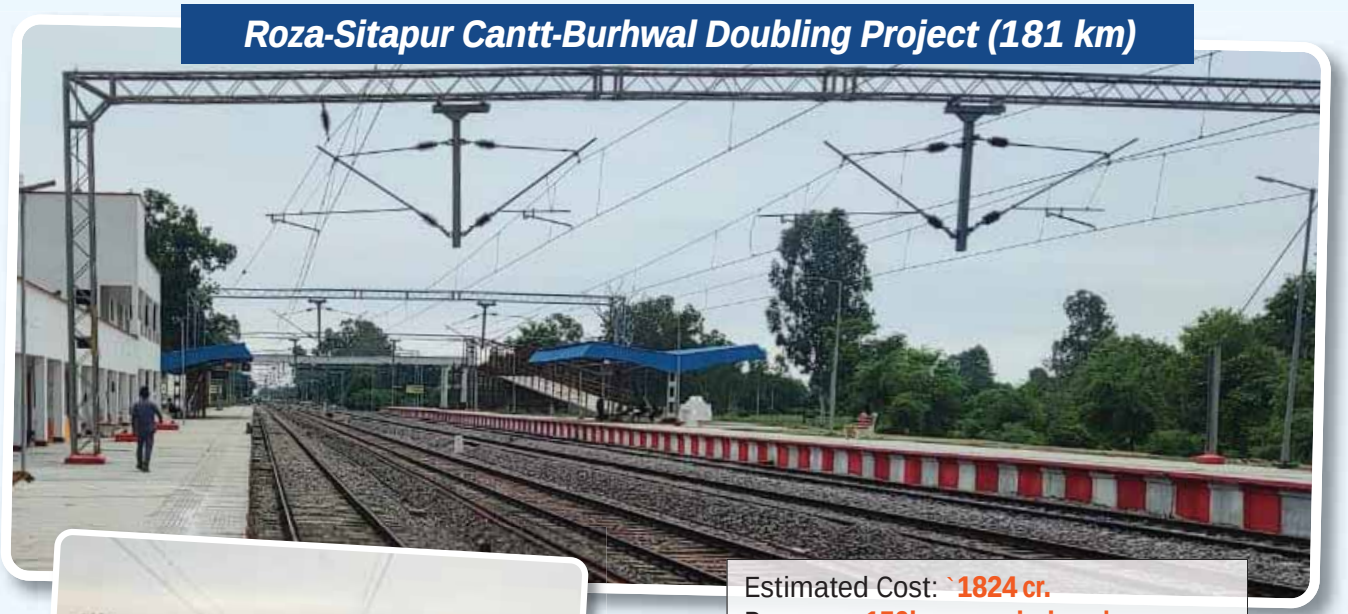
Rail Line Progress: **126.85 km completed**

This will connect Odisha's remote towns to the capital city of Bhubaneswar



1st July, 2023

Roza-Sitapur Cantt-Burhwal Doubling Project (181 km)



Estimated Cost: **`1824 cr.**

Progress: **150km commissioned**

It will enhance rail connectivity from Gorakhpur to Delhi via Sitapur Cantt., benefit Barabanki and Sitapur districts & boost socio-economic growth.



16th July, 2023

Ahmednagar-Beed-Parli New Line (261.25 km)





17th July, 2023

Estimated Cost: `4805.17 cr.
Total Stations: 23
Work completed: 66.18 km
Ahmednagar to Ashti
Near completion: 67.12 km
Ashti to Eganwadi
It will enhance Rail connectivity between Ahmednagar and Beed districts.

Nagpur-Wardha 3rd and 4th Line (78.71 km)



Estimated Cost: `540.02 cr.
Progress Update:
Completed sections:
Butibori-Borkhedi-Sindi
Near completion sections:
Ajni-Butibori & Sindi-Seloo
It will ease congestion and boost train speed on the Mumbai-Howrah route.



18th July, 2023

Manmad-Mudkhed-Dhone Electrification Project 783 Rkm





23rd July, 2023

Estimated Cost: `865 cr.

The Manmad-Jalna section successfully electrified, completing 514 Rkm of the entire project.

Benefitting Telangana, Andhra Pradesh and Maharashtra

Contributing towards Mission 100% Electrification

Bhusawal-Manmad 3rd line Project (183.94 km)



Estimated Cost: `1360.16 cr.
Completed:
Bhusawal- Pachora (71.72 km)
Near completion:
Chalisgaon-Pimparkhed
Nandgaon-Manmad
In Progress:
Pachora-Chalisgaon
Pimparkhed-Nandgaon
It will increase train speed on the busy Mumbai-Howrah route.



12th July, 2023



A Dream Comes True

Chenab Bridge

Shri Prem Sagar Gupta
Executive Director (Corporate Coordination)

Chenab Bridge is located on Udhampur-Srinagar-Baramullah Rail Link (USBRL) Project of Indian Railways. The bridge is nearly 80 km away from Katra by road and lies between two villages Bakkal and Kauri of Reasi district. The bridge is on Chenab river, around 15 km upstream of Salal dam— a hydroelectricity project. The bridge is on a sharp 'V' shape valley formed by Chenab river. The construction of bridge at an elevation of 854 m from mean sea level (msl) was a compulsion for railway engineers so as to enable laying of railway track from Katra (msl around 813 m) to Srinagar (msl around 1591 m) economically.

The total length of Chenab Bridge is 1315 m i.e., more than 1 km, which include one main steel arch of 467 m. The arch is in the substructure of the bridge. Over the arch, steel trestles have been erected to support superstructure, whereupon track has been laid to join railway line from Katra end to Srinagar end.

The geology of the bridge site is quite fragile. It mainly consists of highly fractured dolomite sedimentary rocks— calcium magnesium carbonate. The construction of such a huge bridge at such a difficult site was really a challenge for the engineering fraternity. The stability of the mountain slopes over which arch foundations were to be laid, was to be ascertained before construction



Drone View of Chenab and Bridge-43

of the bridge. The assistance of experts from IIT Delhi, ISC Bangalore and others were taken to ensure that slopes are stable after construction of bridge, even in case of an earthquake.

A small model of the bridge was also developed to understand what shall be the effect of high speed winds on the bridge. Finally, the design adopted can withstand wind speed of 266 kmph and earthquake of magnitude 7 on Richter scale. The bridge can withstand load of two trains, however, presently, only one railway track has been laid over the bridge. The special arrangements have also been made to protect the bridge even from bomb blast.

The steel components of the bridge have been fabricated using steel plates of varying thicknesses up to 90 mm thick and steel tubes. Since the bridge site is remotely located and it is difficult to carry fabricated steel components through mountainous roads, three workshops were commissioned near the bridge site to fabricate the same near the bridge itself.

The main foundations of the bridge are located on the two slopes of the mountains. To lay arch foundations of roughly the size 50 m x 30 m, sufficient flat area was required at the desired locations. To provide such space on slopes for foundations, the mountain slopes were cut in steps of around 20 m each from top downward up to foundation levels.

It was a really a humongous and challenging task for engineers— first to survey a non-approachable site and then plan cutting of lakhs of cubic metres of fragile rock. Indian engineers however accomplished the task through controllled blasting and



Cable Crane

simultaneously stabilizing the cut faces. You would be astonished to know that before stabilizing the cut faces, each and every rock joint has been mapped by geologists and well preserved for future reference, if needed.

For erection of 467 m span arch, one steel pylon 105 m high was erected on Katra end and another 127 m high pylon was erected on Srinagar end of the bridge. Over the pylons, steel cables were laid across the river, and thereupon two cable cranes were installed. A cable crane is a crane which moves over the cables, unlike other cranes which moves on the ground. The cable cranes were such that same can carry 20 tonne weight when working alone, and 34 tonne when working simultaneously.

The steel components fabricated in the nearby workshops were brought to bridge site through road, and with the help of cable cranes, the same were brought to actual location one by one, where that component was to be fixed, and bolted with high precision with the previous component already fixed earlier. One can now easily imagine how difficult and challenging it have been for engineers and workers to bolt different components in the middle of the river, standing at a height which is 35 m more than the height of the Eiffel tower.

Once the erection of arch was complete, the steel trestles were erected over the arch to make horizontal platforms for construction of superstructure. The erection of superstructure was again not a simple task. The prefabricated parts of superstructure were joined through welding and same were pulled towards the river through special arrangements.

The Chenab Bridge superstructure, substructure as well as the slopes have been planned for instrumentation, to know the behaviour of bridge under different weather conditions and train loads. The data from installed instruments would enable Railways to know the structural health of the bridge all the time.

The successful completion of Chenab Bridge has made it possible to connect J&K with rest of India through rail network. The time is now near when one would take a train from Kanyakumari or Guwahati and get down at Srinagar all throughout the year even when it is snowing in Srinagar and roads are blocked. One can also easily imagine social change that the USBRL project is going to bring to the life of citizens of India especially those residing in J&K— the kingpin of which is Chenab Bridge.

Let us salute all engineers and workers involved in the project for their tireless efforts in making this happen.

SPECIAL ARTICLE

Human Factors in Railway Operations

Shri Manoj Kumar Sinha
Executive Director/Traffic/Psycho-Tech
RDSO, Lucknow

Smt. Garima Srivastava
Scientific Supervisor/Psycho
RDSO, Lucknow

Dr. Miny Chandra
Scientific Supervisor/Erg. & Trg.
RDSO, Lucknow

Abstract: The effectiveness, safety and performance of railway operations is based on the compatibility between human—machine interface which is known as Human Factor Ergonomics. Studies related to human factors in railways contribute to the understanding of overall well-being and quality of life among railway personnel. Ergonomics is divided into physical, organizational and cognitive ergonomics. Increasing number of operations in high speed train and metro rail requires mastering new skills by frontline operators. To minimize the error and to ensure safety in railway operations, factors related to cognitive ergonomics play a vital role. Psycho-Technical Directorate, RDSO engages in assessment and management of cognitive factors such as selective attention, decision making ability and vigilance etc. which maps human performance by safety category staff in Railways. A human reliability analysis can be done to identify and analyse the contribution of human performance and predict the causes and consequences of human error. Studies of human factor ergonomics helps in upgradation of human factor technology for safety of railway operations.



Introduction

Human Factor Ergonomics (HFE) focuses on the nature of human—artefact interactions, viewed from a unified perspective of science, engineering, design, technology, and management of human compatible systems. It includes a variety of natural and artificial products, processes, and living environments. HFE advocates systematic use of such knowledge to achieve compatibility in the design of interactive systems of people, machines, and environments to ensure their effectiveness, safety, and ease of performance. Human factors are thus, basically an application of knowledge of human capabilities and limitations to the design and management of the tasks that people do.

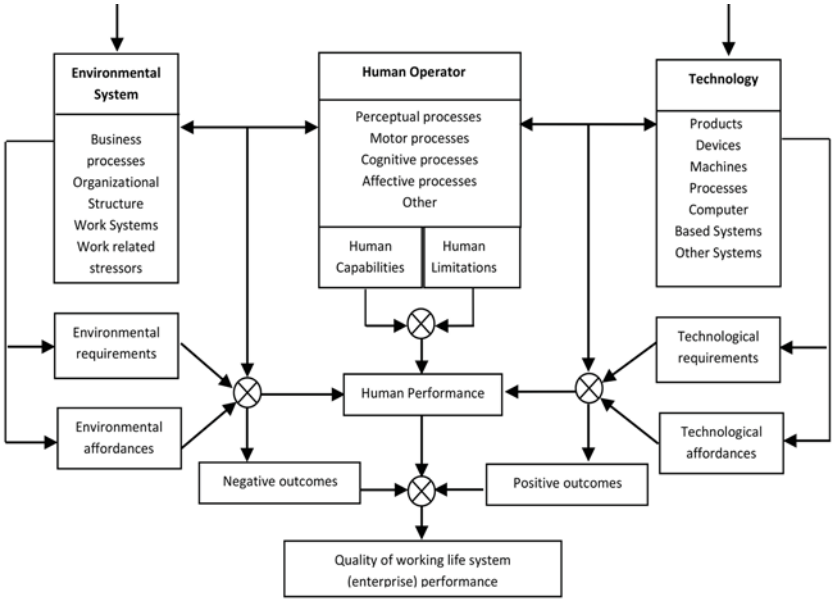
The Railway is a complex technical system, in which people are as much an integral part as any mechanical component. Human factors help in conception of human-artefact interaction, designing products, develop manufacture, test, manage, and participate in systems and create a work environment that boosts productivity while optimizing safety issues. To support the safe and effective operation of railway operations it is essential to consider the impact of technical systems on:

- The knowledge, skills, and abilities of individuals.
- The demands placed on employees while doing the job.



- The organisation and the systems in place to support the safe and effective operations.

The purpose inherent to such technology used to identify where and when which trains are on the track, control their progress by keeping safe but efficient

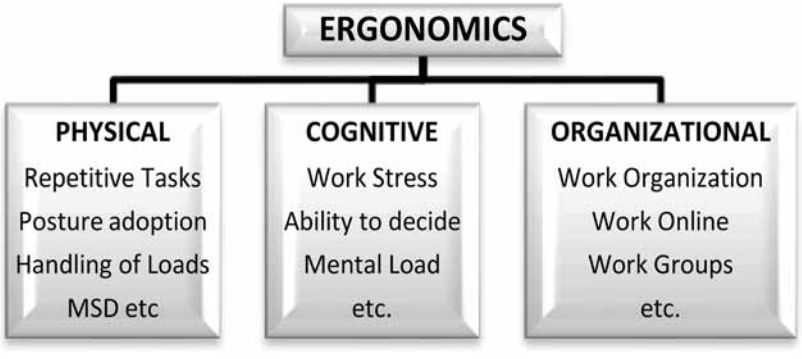


researches is to contribute to overall human well-being and quality of life of railway personnel.

Types of Human Factor Ergonomics

The railway system is a classic domain for human factors contribution. It includes work of all types, from train control, to monitoring, to planning to physical work with tools. Railway operations require a synchronized contributions of train crews, station masters, maintenance staff and traffic controllers, etc. There is a considerable change in the separations and effective communication between trains, signals and control functions. In Railways, the role of locopilots, station masters, and other front-line staff tend to be most affected by human factors. The aim of the railways is to design a system that optimises performance, improves safety and working conditions, reliability and efficiency by minimizing human error.

According to the specific traits and characteristics of human interaction with the environment, ergonomics is divided into:



1. Physical Ergonomics deals with characteristics of human beings in their relationship with physical activity, attitude towards work, handling of materials, frequent injuries due to movement, muscle—bone disorders, organization of working space, safety and health.

2. Organizational Ergonomics studies the optimization of socio-technical systems, including their organizational structure, rules and processes.

3. Cognitive Ergonomics deals with mental processes such as perception, memory, thinking, reasoning and motor response, they are affected by the interaction with other element of the system i.e. mental workload, decision making and skilled performance.

Human Factor Considerations for Advanced Train Control Systems

Automation

Innovations in information technology, driven by requirements for safer, more effective and efficient operations, have led to increased use of automation, particularly in Metros & High Speed Rail (HSR) environments. This in turn amplifies the consequences of equipment and human failures within critical safety environments. With automation, the job of the operator involves more monitoring of a steady state condition than in traditional less automated operations, but can at times be very demanding. The consequences of this can result in inappropriate operator action that can be potentially disastrous in loco pilot's cabs or control rooms. Proficiency in new skills viz.

perceptual judgement, decision making, problem solving and diagnosis are expected with staff dealing in such system. It is important that any automation provides a means for the operator to retain awareness of situations as they master new skills. Therefore, it is essential that designers work with the users of the automation to ensure that the users are informed about what the automated activities are and understand the basis as to why they are being undertaken, so that problems can be perceived and timely reformatory actions could be taken.

Driver Vigilance and Distraction

Recent concerns address the issues of high workload, distraction and boredom, particularly as operations become the subject of progressively increased automation. Upon upgrade from a Mail/passenger system to a High Speed driving train cab environment, the locopilot's tasks will change from control to monitoring activities with a focus on the platform-train interface. This means a change in the driver's mental model of the function of the control system of his cab. As a result, where control systems rely on the supervision of a human operator, there is a reliance on the operator to remain vigilant and react efficiently when intervention on automation is required both within the control room and driver cab environments. A great deal of emphasis is placed on operating the train according to timetable because of the frequent number of trains and very demanding high network capacity service they deliver. This operational culture means that the mental vigilance and situational awareness of the locopilots has increased in a largely automated working environment because the operator is given active functions to perform. High workload automation would be engaged to alleviate the human user's workload, thereby providing additional benefits in balancing workload and maintaining the user's situation awareness.

Context of operation

As systems are often designed without a good knowledge of the operational context, they frequently present all possible information to the end user—the end user has to then decipher, extract and configure the information themselves as the situation demands. This in turn increases the cognitive workload for the locopilots. In Railway operations, Ergonomists commonly provide locopilots with track information, maximum allowed speed information, alerts about temporary speed restrictions ahead, overtaking trains or station stops ahead or suggested energy efficient speeds to travel at. An alternative approach would be to automatically assimilate this information and then simply presenting the driver with the speed the train should be driven at, to arrive at the station on time. Requirements for drivers remaining vigilant and 'in the loop' loose their significance here as there is not a lot they can do when limited by human capability. Therefore, the environmental culture for a system can significantly influence whether a design context is fit for purpose or not.

Factors Affecting Performance in Rail Operations

The Psycho-Technical Directorate, RDSO engages itself in assessment and management of cognitive factors along with individual factors affecting human performance in railway operation of safety category staff.

A: Individual Factors:

- Working hours and Sleep: Locopilots are subject to stress due to long working hours and lack of sleep.
- Fatigue: Deterioration of performance due to high fatigue is inevitable among loco pilots.
- Monotony: Monotony affects the driver's physical, cognitive and affective sensations.
- Lack of motivation: Lack of job motivation is one of the important causes of workplace error.
- Stress: Negative reactions arise such as discontent, worry, fear, frustration, and a lack of pleasure or motivation at work both physical stress (e.g. noise and vibrations) and psychosocial stress (e.g. fast working pace and concern about accident).

B: Cognitive Factors:

It involves analysing the interplay between the mental capacity of the operator/individual, the demands of the job and of the ergonomic work environment. How a worker tackles mental workload is principally a matter of human mental abilities, and how information is received and processed influences the decisions and measures used in operation of railways. Selective attention, strategic behaviour, distributed cognition, vigilance, decision making ability are important cognitive factors that play a vital role in railway operations in minimizing error and ensuring safety in railway operations. Some ergonomics related factors should be kept in mind while designing

and at planning stage of introduction of new technology:

- The extent to which design influences behaviour.
- The psychological and cognitive basis of the work performed in operations and how to support these processes by good design.
- The impact design-induced human unreliability has on the organization in terms of health, safety, environmental damage, lost production as well as reputational damage.

Applicability of Human Factor Ergonomics in Railways

The study of human factor ergonomics helps to understand the factors related to accidents in train operations. A large part of contributory factors in the causation of accidents is caused by unsafe acts by human. The unsafe acts level is divided into two categories errors and violations and these two categories are then further divided into subcategories. Errors are unintentional behaviours, while violations are a wilful disregard of the rules and regulations. The human errors can be caused by different reasons, however cognitive abilities and limitations of workers play an important role. Human errors can be classified in various manners i.e. active and latent errors. Active errors are those whose effects are felt almost immediately, are associated with frontline operators of the system such as train drivers, motorman, station masters and controllers. However, latent errors are the adverse consequences which may be hidden in the system, when they combine with other factors to breach the system's defenses, for instance human errors related to design, procedures, maintenance, and management are errors of this type.

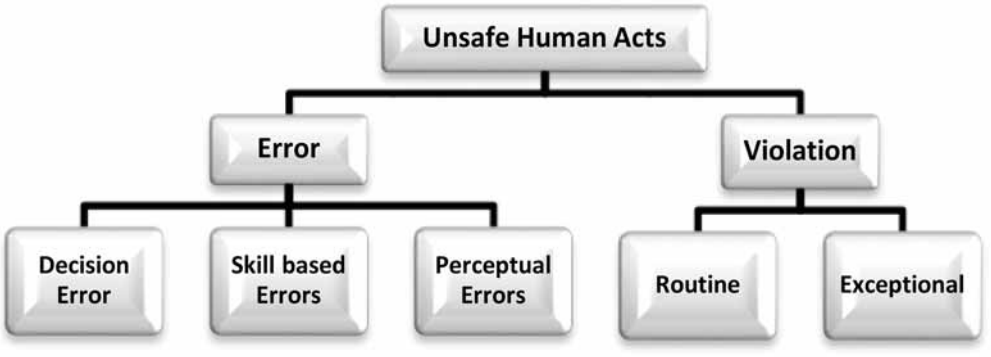
Unsafe acts of violations in railway operations may be of routine type in which habitual unsafe actions on the part of the operator, if ignored and tolerated by the authority can be hazardous for safety of train operation. Another act of violations are exceptional violations which are neither typical of the individual nor condoned by the management. Both human errors and violations may cause the accident to occur.

Human error can be further classified according to the context of the incident. An analysis of the specific conditions in which the task has been performed, type of task and the conditions under which the task is executed (e.g. location, equipment used, etc.) could be made. Human error can also be divided on the basis of cognitive process involved in the railway operation such as an individual's perception, memory, and ability to make the correct decision. This classification concentrates on external and internal factors such as time pressure, knowledge, planning and characteristics of information processing which can interfere the operator and lead him to commit errors.

Human reliability analysis identifies and analyses the causes, consequences and contribution of human performance (including failures) in complex socio-technical system. It involves the basic psychological mechanisms behind human errors and what information is necessary to ensure error detection and recovery during routine work. A Human Reliability Analysis (HRA) aims to predict the likelihood of human error and evaluate how the entire work system is degraded as a result of the error alone or in connection with the operation of the machine, the characteristics of the task the system designs and characteristics of individuals.

Human error analysis helps in decision in respect of upgradation of human factor technology, such as:

- Impact of new control and communications systems on train driving.
- Loco pilot's attention, fatigue and use of reminder appliances.
- Route knowledge and driver



experience.

- Signal and signage location and sighting.
- Station master's and locopilot's mental workload interface design in signalling centres and train cabs.
- Experience and expertise in signalling and control.
- Use of CCTV.
- Behaviour at level crossings.
- New tool for human error identification.
- Inspection by patrol and automated systems.
- Reliability and effective performance in track maintenance.

Human factors, most importantly individual and cognitive level psychological factors, are involved in safe and smooth train operations. The influence of these factors increases the need of research for better understanding of these psychological functions and upgradation of human factor technology. Various indicators to measure the progress achieved and the weaknesses to be remedied should be used. The purpose should be to identify practical factors and good practice in implementing the safety management system which contributes to a healthy safety culture which would reduce train accidents caused by human factors, address fatigue & stress and enhance emergency preparedness.

Bibliography

- Dababneh, L & EL- Gindy, M (2015), "Driver Vigilance Level Detection System, a literature survey". International Journal of Vehicle Performance. 1, 1-28.
- Karwowski, W. (2005), "Ergonomics and Human Factors: The Paradigms for Science, Engineering, Design, Technology, and Management of Human-Compatible Systems," Ergonomics, Vol. 48, No. 5, pp. 436–463.
- Kumar, A. & Sinha, P.K. (2008), "Human Error Control in Railways"; Jordan Journal of Mechanical and Industrial Engineering; Vol 2, No. 4, Page 183-190.
- Morais, Caroline & Moura, Raphael & Beer, Michael & Patelli, Edoardo. (2018). "Attempt to Predict Human Error Probability in Different Industry Sectors using Data from Major Accidents and Bayesian Networks". Norwegian University of Science and Technology.
- Muttram, Rod (2018), "How Do We Reduce the Number of Accidents Involving Human Factors?". International Technical Committee Topic 47. Published in IRSE News, 242,1-6.
- Salvendy, G . (2012), "Handbook of Human Factors and Ergonomics; The Discipline of Human factors and Ergonomics"; John Wiley & Sons, Inc. 4th Ed., pp 15.
- Wilson, J. R, Norris, B. , Clarke,T. & Mills, A . (2005), "Rail Human Factors: Supporting the Integrated Railway", Rail Human Factors: Past, Present and Future; Ashgate, pp 6-10.





A Series on Know Your Railway
Pointsman

Shri B. Guganesan
Chief Public Relations Officer
Southern Railway



Safety is the paramount factor for Southern Railway. There are various categories of employees belonging to various functional departments who contribute wholly to the safe running of trains. It is the dedication and commitment of these employees that keeps the wheel of the trains moving on the right track.

One such category of employees is 'Pointsman' belonging to the Traffic branch of the Indian Railways. Recruited directly through RRB-NTPC (Non Technical Popular Category) examinations, Pointsmen are posted in all the Railway stations, except Halt Stations, of the Indian Railway network and work under the lawful orders of a Station Master on duty. Women are also recruited under the category and work as 'Pointswomen'. Pointsmen and Pointswomen play a crucial role in a safe running of trains and contribute to overall efficiency of operations.

Pointsman in a station, clad in neat and clean grey uniform, performs a variety of functions in his/her duty hours. The word Pointsman majorly indicates one of the important duties assigned to him. 'Point' in Railway parlance refers to the arrangements provided in the track to divert a train from one line to another and they help in guiding trains to the assigned platforms at stations and guide trains out of platform to assigned lines for further journey towards its route. The primary role of a pointsman is to ensure proper cleaning of such points in the station yard with the help of lubricants for its smooth operations. Every point in a station is cleaned and lubricated once in three days on rotational basis and this entails walking out to far ends of the station yard irrespective of the weather condition. Pointsman face bizarre situations such as rats being stuck and playful children keeping stone in points. They need to ensure that they are removed and no trains are detained on such accounts.

Operating Points in Non-interlocked Yard

Wherever there are points which are non-interlocked, i.e., where points are not controlled by Station Master and where points have to be physically set, the role of a Pointsman is even more significant. Generally the coaching yards will have non-interlocked points and non-signalled shunting is carried out. Pointsman plays a major role in shunting of trains/coaches in such yards by proper hand-signalling and ensuring proper setting of points and locking them with cotter and pin. Failure to set the correct point and improper setting and locking could be a



threat to safety. Hence the Pointsman carries out his duties with a high degree of vigilance. It is the cautious and focused working of the team of Pointsmen and Shunting master in a coaching yard that ensures timely placement of train rakes at the originating station and contributes immensely to punctual running of trains.

Watch like a Hawk and Exchange 'All Right' Signals with Passing Trains

When a train passes through a station, the Station Master and Pointsman keenly watch for any abnormalities in the running of the train. The Station Master remains on one side of the train and the Pointsman moves to other side so that both can watch over either side of the train that is passing through the station. The pointsman without blinking his eyes keenly observes the passing of the train with green flag on left hand and red flag on right hand, being the dominant hand.

As the train passes, an alert Pointsman vigilantly observes and registers abnormalities like hot axle (fire/smoke/abnormal sound), whether the wheels are rotating properly, couplings are intact, hanging parts or open doors, if any, etc. The pointsman also ensures that the locopilot and guard are alert, if anyone travels over rooftop or clings to footboard precariously. On noticing any abnormality in running and where the train needs to be stopped immediately the Pointsman raises the red flag. Where no such abnormalities are noticed the pointsman remains in his position and exchanges signals called 'All Right' signals with the crew of the passing train.

Other Responsibilities

Whenever a train/formation is to be stabled in the station for more than an hour, the train/formation is secured as per the instruction of Station Master. Train/formation is secured by Pointsman by placing wedges and securing the formation using chain and lock. This ensures that the train does not roll back into the running line so as to avoid any collision of trains.

A caution order issued by the Station Master is considered very important as it entails clear-cut instructions to be adhered to by the locopilot and guard in train operations (e.g. speed restrictions). Hence, a Pointsman ensures that it is delivered to locopilot and guard without fail on time.

During the failure of points and signals, Pointsman plays an important role such as delivering the necessary written notices issued by the Station Master to the locopilot of the train and pilot the train duly ensuring correct setting of points and that there are no other abnormalities.

Hence, a Pointsman remains focused, agile and alert throughout his duty hours. They acquire the requisite technical skills through proper on-the-job training. Many Pointsmen have nurtured their skills and become shunting masters, Guards and Station Masters through departmental selections. Indian Railways takes pride in Pointsmen for their commendable dedication to duty in making the wheels of the Nation move relentlessly.



Green Buildings

Its Importance in the Present Day Context

Shri Ramachandran. V
Retd. Joint Director, RDSO

Introduction

In the good olden days human beings stayed in caves and tree tops. They ate fruits and drank water from streams. Slowly they started engaging in agriculture. Houses were constructed using mud and stone. The industrial revolution in 18th century gave an impetus to the people's standard of living. Small towns got developed in the surroundings of business establishments and factories. People started migrating from villages to these towns. This necessitated the need for more buildings. The idea of green buildings cropped at this juncture.

Green Buildings

A green building is a structure that creates positive impacts on the environment. These buildings help in preserving natural resources and improving the quality life of inhabitants.

The main features that make a building 'green' are:

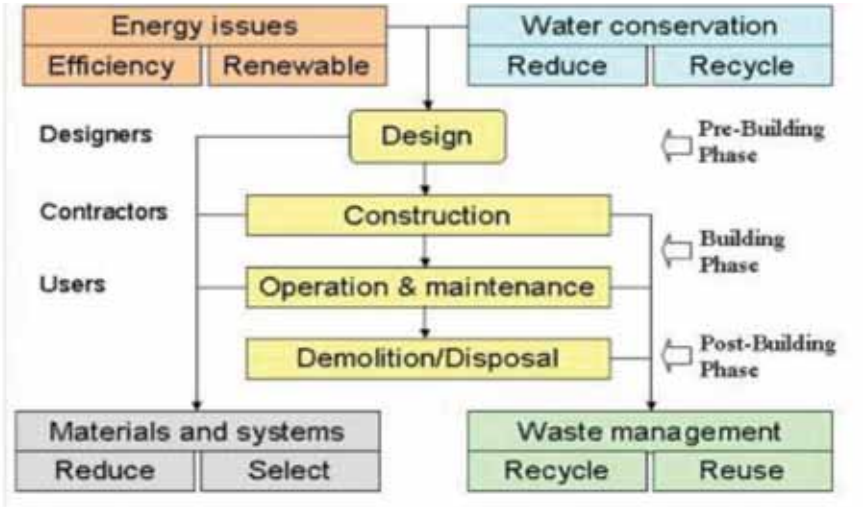
- Efficient use of energy and water.
- Use of renewable energy such as solar and wind.
- Waste reduction.
- Use of non-toxic materials.
- Good indoor environment with quality air and natural light.
- Use of recycled materials.

Various countries have different standards for green buildings depending on the climatic conditions and environment there.

Benefits of Green Buildings

The community will benefit with the improvement in the environment by the reduction of GHG (green house gas) emissions, energy consumption and the stress on natural resources.

- Reduced energy consumption.
- Reduced destruction of natural areas, habitats, and biodiversity.
- Reduced air and water pollution.
- Reduced water consumption.
- Reduced waste generation due to recycling and reuse.
- Reduced atmospheric pollution.
- Increased user productivity.
- Savings in utility bills like water and electricity.
- Lower construction cost.
- Healthy environment for inhabitants.



Flow chart of design and construction of green building

Green Building Materials

Stone

- Stone is a naturally occurring building material and has good strength and durability. Some structures built with stones many years ago are still in existence.
- Stones can withstand weathering action efficiently.
- Generally it is available locally.

Concrete

Concrete is the most widely used building material all over the world. But the production of cement in factories affects the environment very severely. A large amount of natural materials are mined and processed. The energy requirement in factories to produce cement is also quite high. During the process of manufacture carbon di oxide is released into the atmosphere. Use of green concrete to a certain extent will help in reducing the bad effects of Portland cement. There is a saving of energy and Co2 emission is also reduced.

Timber

Timber is wood used for various purposes in building construction as well as for making furniture. Timber can be divided into two categories —hard woods and soft woods.



Fiber Glass

Fiber Glass is fiber reinforced plastic using glass fiber. It is light, durable and strong. It is impact resistant, corrosion resistant and has good strength. It is very flexible and can be made into various shapes. It can be used for windows, doors, roofs, bath tubs etc.

Top Green Buildings in India.

- Suzlon One Earth, Pune.
- Rajiv Gandhi International Airport (RGIA), Hyderabad.
- CII- Sohrabji Godrej Green Business Centre, Hyderabad.
- Infosys Limited, Mysore..
- Infinity Benchmark, Kolkata.

Rating Systems of Green Buildings

A green building rating system is basically a reference mark which assesses a building's performance . A set of guidelines are prescribed in the design, construction, and operations of green buildings.

The Main Grading Systems in India

GRIHA (Green Rating for Integrated Habitat Assessment)

GRIHA is a building rating system to assess the performance of buildings. The system is jointly developed by TERI and the Ministry of New and Renewable Energy, Government of India. In this, a building is assessed based on its expected performance over its life cycle. The stages of life cycle are preconstruction, construction and operation /maintenance.

GRIHA for existing buildings consist twelve criteria under seven sections such as Site parameters, Energy, Water, Maintenance, Human health, Social Aspects and Bonus points.

IGBC (Indian Green Building Council) It is a unison of ancient architectural practices and modern practices. This rating system is based on five elements of nature. It covers commercial, residential, factory buildings etc. IGBC rating system has the following categories- Site preservation and Restoration, Site planning and design, Energy efficiency, Water efficiency Materials and Resources, Innovation and Design process.

LEED (Leadership in Energy and Environmental Design)

The rating system has seven areas: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovation in Design Process and Regional Priority. Projects get credits in these areas to achieve certification.

BEE (Bureau of Energy Efficiency)

BEE has drawn up various regulatory guidelines to enhance energy efficient buildings. The Energy Conservation Building Code (ECBC) stipulates minimum energy standards for commercial buildings. From the Energy Audit Studies it has been found that there is a scope of about 40% saving of energy in lighting, cooling, refrigeration etc.

Conversion of Conventional Building into Green Building

India's construction industry is expanding on a large scale. As far as the new buildings are concerned, through adoption of revised rules and regulations for design and construction, the adverse effects on environment can be considerably reduced. But the main challenge will be from existing buildings. For this, first an analysis of the building is to be done to find out the features of the building. Next cost involved to convert to green should be worked out.

Normal Suggestions in this regard are:

Change the electrical appliances to BEE star rate, installation of solar energy system on roof top, new taps to reduce water consumption and install rain water harvesting system

Incentives for Green Buildings

Several state governments and Central government are offering incentives for constructing green buildings with the aim of promoting green building movement. The incentives include reduction in one time building tax, stamp duty, property tax etc.

Rail Saurabh Club, Jabalpur
My Club of Dreams

Shri Sanjeev Tiwari
Chief Signal & Telecom Engineer, WCR



Rail Saurabh Club - front view

Being a resident of Rail Saurabh Colony, nature has gifted me opportunity to visit Rail Saurabh Club after 150 m walk from house. Though 150 m away but the ambience of the Club with disciplined rows of variety of flowers, lively trees, calm air and sounds of birds' chirping fill every metre of walk with vision of nature in its glory and Almighty's grace. Having a witness to such form of nature, I can describe it with my poem:

Alone in the nature I feel,
Nature is sympathetic and peaceful.
Life seems to welcome amidst nature,
When singing birds fill life will breathe.
It feels like near to Mother Nature,
When I visit Rail Saurabh Club gate.
The Sun's rays shower blessings,
When near to smiling flowers.

Also, the fresh air in the morning blowing through trees and plants and which is also accompanied by bright but soothing Sun's rays, is life-giving and seems to have relaxing effect for any one. The smell of nature amidst these glowing flowers and trees inside the Club in early morning hours is hard to be described in words and can only be imagined in dreams. The partition glass door entrance with 'Welcome' written on top welcomes not only the Rail Saurabh Colony occupants but also seems to call inside the fresh air which is waiting outside so as to sustain life.

The entrance is followed by a small library which has a collection of variety of books from history to meditation to science.

To facilitate indoor exercises and physical workout for maintaining health, a gym is also available where various equipments and machines are housed. However, the aspect which draws everyone's attention is cleanliness of this gym which inspires to carry out exercises. The complete set of machines of each type of workout is present and they are kept in working condition.

More so, the Auditorium of Club with quality sound acoustics add weightage to any cultural programme. The seating arrangement in auditorium is planned.

There is one Squash Court of standard dimensions also inside Club. There are four walls in the court and the back wall is of glass which is strong enough to facilitate play and which also allows non-playing persons to witness the game. The club has one room dedicated to Snooker/Billiards and Pool. There are chairs also for non-playing persons to sit and watch the game. Also, there is a Badminton Court whose ambience of surrounding walls is difficult to describe. The wooden court is clean and so are the adjoining areas.

Getting inspiration from this Court, I have written one poem on Badminton considering game aspects and sportsmanship associated with the game. My poem is as follows:

Good habits are linked to any sport,
In Badminton players face each other in court.
The wooden court has net stretched to maximum,
As if all shots have to rise above its horizon.
With racquet in hand,
Drive the shuttlecock to other end.
The dodging drops and power smashes,
Accompany this sport of serves and rallies.
Winning or losing are result,
They symbolize a true sportsman spirit.
One may lose today in Badminton game,
But we play for fun not for fame.

Thus, this Club may be said to be: 'My Club of Dreams'.

Test Your Knowledge

1 First cable-stayed bridge of Indian Railways?

(a) Chenab Bridge | (b) Pamban Bridge | (c) Anji Bridge | (d) Mumbai Bridge

2 From which city the Hon'ble Prime Minister flagged off five Vande Bharat Express at the same time?

(a) Bhopal | (b) Goa | (c) Ahmedabad | (d) New Delhi

3 Recently, which company of the Ministry of Railways has got the status of Navratna?

(a) IRCTC | (b) RVNL | (c) RailTel | (d) COFMOW

4 When was the 'Bhartiya Rail' Magazine started?

(a) August 1960 | (b) April 1957 | (c) June 1915 | (d) January 2000

5 Where is the country's deepest metro station?

(a) Howrah Metro Station | (b) Mumbai Metro Station | (c) Delhi Metro Station | (d) Chennai Metro Station

6 Name the Indian Railways Helpline Number for Passengers

(a) 139 | (b) 137 | (c) 136 | (d) 140

7 Under which Ministry does the Commissioner of Railway Safety work?

(a) Civil Aviation | (b) Ministry of Railways | (c) Ministry of Labour | (d) Aayush Ministry

8 In which Division of South Eastern Railway does cricketer M.S. Dhoni used to work?

(a) Kharagpur | (b) Kolkata | (c) Ranchi | (d) Patna

9 When and where was the first metro train service started in India?

(a) Kolkata-1984 | (b) Delhi-1995 | (c) Kolkata-1995 | (d) Delhi-1984

10 Till now, how many railway stations in the country have been established under OSOP?

(a) 782 | (b) 450 | (c) 312 | (d) 1210

Right Answers

1- (c) 2- (a) 3- (b) 4- (a) 5- (a) 6- (a) 7- (a) 8- (a) 9- (a) 10- (a)



Indian Railways

Hkkjrh; jy

Subscription Available ONLINE

CLICK **www.irctctourism.com/IRBRmag**

Scan QR Code

SUBSCRIPTION RATES

Items		Offline Subscription Fee (in `)	Online Subscription Fee (in `)
Price/monthly issue		20	Not available
Price/Annual issue		70	Not available
Annual Subscription (Inland)/non-railwaymen	One year	250	263
	Two years	460	483
	Three years	675	709
Annual Subscription (Inland)/Railwaymen	One year	200	210
	Two years	370	389
	Three years	540	567
Annual Subscription (Overseas) by Sea mail		1250	1313
Annual Subscription (Overseas) by Air mail		2500	2625

Subscription Fee includes cost of Annual Issue

MODE OF PAYMENT

ONLINE Online through IRCTC Portal — http://www.irctctourism.com/IRBRmag

OFFLINE
i) MO/IPO/DD in favour of Business Manager, Room No. 310, Rail Bhawan, Raisina Road, New Delhi-110001
ii) Cash to be deposited in Room No. 310, Rail Bhawan, Raisina Road, New Delhi-110001

SUBSCRIPTION FORM

Name (All Caps) .....

Address .....

Post..... Dist. .....

State..... Pin Code .....

Mobile No. ..... Email .....

Are you a rly. Employee : **YES/NO** Subscription No. (If *Yes*)..... Date.....

For more information contact: Business Manager, Room No. 310,
Rail Bhawan, Raisina Road, New Delhi-110001
Phone : 011-47845089, **email : bmpr310rb@gmail.com, irbrhelp@gmail.com**

MCX ONE

India's 1st indigenious MCX solution over LTE 4G/5G network

- Based on upcoming FRMCS standard
- Standards compliant integration to LTE 4G/5G networks
- Interoperable with legacy railway systems (GSM-R/ TETRA)
- Reliable and futureproof solution
- Make in India initiative

MCX ONE CORE





MCX compliant application server for mission critical communication . Powerful , secure and scalable service that provides MCPTT, MCData and MCVideo communication between rail users.

MCX ONE DISPATCH CENTER



An intuitive feature rich web-based dispatching platform that provides advanced functionalities to rail control rooms.

MCX ONE DEVICES



Train Radio System



Train Radio Control Panel



Radio Control Panel



Rugged Handset

MCX ONE MOBILE APPLICATION



An user friendly mobile application for Android/iOS handsets. It provides rail users with various call, multimedia messaging and location services.

MCX ONE RAILWAYS INTEGRATION SERVER



Integrates to rail signalling and train control applications. Enables advanced features mandatory for safe and reliable railway operations.

CONSORT

web www.consortdigital.com phone +91-129-489-1488 e-mail info@consortdigital.com



IREE 2023
15th INTERNATIONAL RAILWAY EQUIPMENT EXHIBITION
Global Platform for Railway Technology & Services

12-14 October, 2023 | Pragati Maidan, New Delhi

HALL A5 | STALL 5.78



Fluid Controls Private Limited has over 45 years of experience in engineering connections for Rail & Metro brake piping assemblies. Certified for the International Railway Industry Standard (IRIS – ISO/TS 22163:2017), Aerospace AS9100 and ISO/IEC 17025:2017 for our laboratory, Fluid Controls offers comprehensive solutions – from design, engineering, testing and on-site installation services to the supply of high-performance connectors, isolating cocks, cleats and tube & hose assemblies.

WE HAVE EXPERIENCE

45+ YEARS OF EXPERIENCE • IRIS & AS9100 CERTIFIED
IN-HOUSE R&D • OVER 30 MILLION CONNECTORS INSTALLED
APPROVED BY MAJOR ROLLING STOCK MANUFACTURERS

VISIT US AT IREE 2023 · NEW DELHI · HALL A5 · STALL 5.78

+91-22-68238000 railways@fluidcontrols.com fluidcontrols.com

RIVER
in association with...

Stesalit LIMITED

River Engineering Pvt Ltd is engaged in designing, manufacturing and supplying of top-of-the-line products in the technology arena of electrical, magnetic and electro-mechanical for **Mainline Railways**, **Metro Rail**, **Aerospace** and **Defence applications**.

An array of products that are manufactured by the company are for **electric locomotives**, **passenger coaches** and high-end precision items for aerospace and defence, among others.

The company's core competencies comprise technology absorption, **customisation**, modification, **design & development**, testing, installation and project management.

The state-of-the-art manufacturing facility has been certified for **quality management**, **health** and **safety**, **environment** protection, **military worthiness** and quality assurance for **aerospace** and **defence**.

Key Products

Railways & Metro



On-load Single Phase High Voltage Tap Changer for Electric Locomotives



Lube Oil Pump



Water Pump



Terminal Block



Pantograph



Shock Absorbers & Dampers for Locomotives and Coaches



Coach to Coach Coupler



Gear Box Case



Electrical Panel

River Engineering Pvt Ltd

54-55, Toy City, Ecotech-III, Greater Noida - 201 306 (UP), INDIA
E-mail: marketing@riverengg.com • Web: www.riverengg.com

Accurate, Efficient and Reliable: Embrace the Next Generation of Wheel Measurement.



Fully automated wheel set measuring: Automatic loading, measuring, unloading and roll-out for seamless operation.

Advanced Hydraulic Jack & Centering System: Effortlessly lift, rotate and hold wheelsets between centers for precision measurements.

Contact-Type Measurement: Utilizing a precise contact measurement system for accurate results.

3-Point Measurement: Cutting-edge 3-point measurement technology to achieve unrivaled precision.

hyt

HYT ENGINEERING COMPANY PVT. LTD.

Sales Office: 17-18, Ground Floor, Hans Bhawan, Bahadur Shah Zafar Marg, I.T.O., New Delhi - 110 002, India. Phone: + 91 11 4320 2200/01

Work: 29/10, 29/10/1, 29/10/2, D-II Block, MIDC, Chinchwad, Pune - 411 019, India. Phone: + 91 20 6634 3900

www.hytengineering.com I info@hytengineering.com

ISBN 0019-6274

DL(ND)-11/6028/2021-22-2023
RNI Regd. No. 04563/1957
Published on : 3-4, Posted on : 6-7

AAL®
Autometers Alliance Ltd

Energy & Efficiency / Safety & Reliability

POWERING THE
RAIL TRANSPORT
EFFICIENTLY AND
INTELLIGENTLY



DATA ACQUISITION & CONTROL DEVICE

Onboard Measurement Devices



Tachograph System for Electric, Diesel Locomotives, EMU, MEMU & DMU



Active Speed Sensor for Electric Locomotives



Opto Electronic Pulse Generator for Electric, Diesel Locomotives, EMU, MEMU & DMU



Hotel Load Current Sensor for Electric Locomotives



Primary Current Sensor for Electric Locomotives



Aspiration Smoke Detector for Coaches

Onboard Control Devices



Driver Display Unit LCD Displays for Electric Locomotives



Vigilance Control Device for Electric Locomotives



Fire Detector Equipment for Electric Locomotives



Diagnostics Terminal LCD Displays for Electric Locomotives



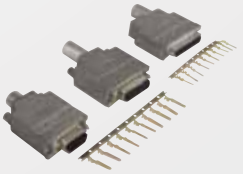
Event Recorder for Electric, Diesel Locomotives & EMUs

Electrical Connectors





Circular Connectors for Onboard & Stationary Traction



D Type Connectors for Onboard & Stationary Traction

mktre@autometers.com | C-63, Sector-57, Noida - 201 307 (U.P.) India

ISO 9001:2015 I ISO 14001:2015 I ISO 45001:2018

Printed & Published by **Lalit Kumar Dhankar** on behalf of Ministry of Railways (Railway Board) from Room No. 310, Rail Bhawan, New Delhi-1 and printed at J.K. Offset Graphics Pvt. Ltd., B-278, Phase I, Okhla Industrial Area, New Delhi-110020. Editor : **Yogesh Avasthi**