GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

RAJYA SABHA
UNSTARRED QUESTION NO. 3935
ANSWERED ON 27.03.2026

STRENGTHENING OF RAIL INFRASTRUCTURE AND CONNECTIVITY

3935 SHRI S.R. SIVALINGAM:

Will the Minister of RAILWAYS be pleased to state:

(a) whether Government has implemented key initiatives in 2025 that included rapid expansion of Vande Bharat Express services, modernising train control systems, deployment of Kavach automatic protection and significant electrification progress to enhance safety, speed and network capacity;

(b) if so, the details of steps taken by Government to introduce sustainable innovations including hydrogen-powered trainsets, digital passenger-centric platforms and reforms aimed at improving travel experience and operational efficiency; and

(c) Government s plans to further strengthen rail infrastructure and connectivity in the coming years in order to support freight growth, passenger services and greener mobility?

ANSWER

MINISTER OF RAILWAYS, INFORMATION & BROADCASTING AND ELECTRONICS & INFORMATION TECHNOLOGY

(SHRI ASHWINI VAISHNAW)

(a) to (c) Indian Railways is focussed on providing affordable, good quality services to all sections of society. Railways has *inter alia* developed the Vande Bharat Chair Car services and Vande Bharat Sleeper Services. As on 22.03.2026, 81 pairs of Vande Bharat train services (Chair Car) and 01 pair of Vande Bharat Sleeper Express are operational on the Indian Railways network.

Vande Bharat services (Sleeper):

For long distance travel the Sleeper variant of Vande Bharat Express has been indigenously designed and developed. Two such trains have already been manufactured. After extensive trials, these trains have been introduced on Indian Railways (IR). The First Vande Bharat Sleeper service viz. 27575/27576 Howrah- Kamakhya Vande Bharat Sleeper Express has commenced regular operation w.e.f. 22.01.2026.

The process of development of new rolling stocks like Vande Sleeper necessitates a holistic approach, combining technological innovation, strategic planning and manufacturing to ensure a safe, reliable and comfortable travel. This involves development of prototype, extensive testing and trials followed by series production.

Broad Technological advancements and safety features provided in the Vande Bharat Sleeper Trains are as below:

- Jerk-Free Semi permanent couplers and Anti Climbers.
- Fitted with KAVACH.
- Higher acceleration with design/operating speed of 180/160 KMPH.
- Crashworthy Design of Car body complying with EN standards.
- Fire barrier doors at the end of each coach for compliance of Fire Safety standards.
- Aerosol based fire detection and suppression system in electrical cabinets and lavatories.
- Regenerative braking system for energy efficiency.
- Air conditioning units provided with indigenously developed UV-C lamp based disinfection system for deactivating 99% harmful bacteria from conditioned air to improve the hygiene standards inside the passenger area.
- Centrally controlled Automatic Plug Doors and Fully Sealed wider gangways.
- CCTVs in all coaches.
- Emergency talk-back unit for communication between Passenger and Train Manager/Loco Pilot in case of emergency.
- For Divyangjan passengers special lavatory in the driving coaches on each end.
- Centralized Coach Monitoring System for better condition monitoring of passenger amenities such as Air conditioning, Saloon Lighting etc.
- Ergonomically designed ladder for ease of climbing on to upper berths.

As on 22.03.2026, the following 01 pair of Vande Bharat Sleeper Express are being operated on the Indian Railways network, as under:-

SN	Train No. and Name
1	27575/27576 Howrah - Kamakhya Vande Bharat Sleeper Express

Vande Bharat services (Chair Car):

Indian Railways, with a view to improve travel experience of the passengers, have introduced indigenously designed and manufactured Vande Bharat trains with modern coaches, advanced safety features and passenger amenities. These Vande Bharat Chair Car Trains have following features:

- Jerk Free Semi-Permanent couplers.

- Fitted with KAVACH
- Centrally controlled Automatic Plug Doors and Fully Sealed wider gangways.
- Emergency Alarm Push buttons and Talk Back Units on all Coaches.
- Improved fire safety – Aerosol based fire detection and suppression system in electrical cabinets and lavatories.
- Higher acceleration with design/operating speed of 180/160 KMPH.
- Driver-Guard communication with voice recording facility & Crash hardened memory.
- Air conditioning units provided with indigenously developed UV-C lamp based disinfection system for deactivating 99% harmful bacteria from conditioned air to improve the hygiene standards inside the passenger area.
- Better Ride Comfort.
- CCTVs in all Coaches.
- For Divyangjan passengers special lavatory in the driving coaches on each end.
- Coach condition monitoring System (CCMS) display with remote monitoring

List of the 81 pairs of Vande Bharat train services (Chair Car) presently being operated on the Indian Railways network, is as under:-

SN	Train No. and Name
1	22435/22436 New Delhi - Varanasi Vande Bharat Express
2	22439/22440 Sri Mata Vaishno Devi Katra - New Delhi Vande Bharat Express
3	20901/20902 Gandhinagar Capital - Mumbai Central Vande Bharat Express
4	22447/22448 Amb Andura - New Delhi Vande Bharat Express
5	20607/20608 Mysuru - MGR Chennai Central Vande Bharat Express
6	20825/20826 Nagpur - Bilaspur Vande Bharat Express
7	22301/22302 New Jalpaiguri - Howrah Vande Bharat Express
8	20833/20834 Secunderabad - Visakhapatnam Vande Bharat Express
9	22223/22224 Sainagar Shirdi - Chhatrapati Shivaji Maharaj (T) Vande Bharat Express
10	22225/22226 Solapur - Chhatrapati Shivaji Maharaj (T) Vande Bharat Express
11	20171/20172 Nizamuddin - Rani Kamlapati Vande Bharat Express

12	20701/20702 Tirupati - Secunderabad Vande Bharat Express
13	20643/20644 Coimbatore - Chennai Vande Bharat Express
14	20977/20978 Chandigarh - Ajmer Vande Bharat Express
15	20633/20634 Thiruvananthapuram- Kasargod Vande Bharat Express
16	22895/22896 Puri - Howrah Vande Bharat Express
17	22457/22458 Dehradun - Anand Vihar Vande Bharat Express
18	22227/22228 Guwahati - New Jalpaiguri Vande Bharat Express
19	20911/20912 Nagpur - Indore Vande Bharat Express
20	22229/22230 Madgaon - Chhatrapati Shivaji Maharaj (T) Vande Bharat Express
21	22349/22350 Ranchi - Patna Vande Bharat Express
22	20661/20662 Dharwar - Bengaluru Vande Bharat Express
23	20173/20174 Rewa - Rani Kamlapati Vande Bharat Express
24	22549/22550 Gorakhpur - Prayagraj Vande Bharat Express
25	12461/12462 Sabarmati - Jodhpur Vande Bharat Express
26	22925/22926 Okha - Ahmedabad Vande Bharat Express
27	20665/20666 Tirunelveli - Chennai Egmore Vande Bharat Express
28	20677/20678 Narsapur - Chennai Vande Bharat Express
29	20703/20704 Yesvantpur - Kacheguda Vande Bharat Express
30	20631/20632 Thiruvananthapuram- Mangaluru Vande Bharat Express
31	26963/26964 Udaipur - Asarva Vande Bharat Express
32	22347/22348 Patna - Howrah Vande Bharat Express
33	20835/20836 Puri - Rourkela Vande Bharat Express
34	20897/20898 Ranchi - Howrah Vande Bharat Express

35	22415/22416 New Delhi - Varanasi Vande Bharat Express
36	20641/20642 Coimbatore - Bengaluru Cant Vande Bharat Express
37	20645/20646 Mangaluru - Madgaon Vande Bharat Express
38	20705/20706 Chhatrapati Shivaji Maharaj (T) - Nanded Vande Bharat Express
39	22477/22478 Sri Mata Vaishno Devi Katra - New Delhi Vande Bharat Express
40	22425/22426 Anand Vihar - Ayodhya Cantt. Vande Bharat Express
41	22487/22488 Amritsar - Delhi Vande Bharat Express
42	22962/22961 Mumbai Central - Ahmedabad Vande Bharat Express
43	20707/20708 Visakhapatnam - Secunderabad Vande Bharat Express
44	20663/20664 Chennai - Mysuru Vande Bharat Express
45	22233/22234 Patna - New Jalpaiguri Vande Bharat Express
46	22470/22469 Khajuraho - Nizamuddin Vande Bharat Express
47	22231/22232 Bengaluru - Kalburagi Vande Bharat Express
48	20841/20842 Visakhapatnam - Bhubaneswar Vande Bharat Express
49	22345/22346 Gomti Nagar - Patna Vande Bharat Express
50	20887/20888 Varanasi - Ranchi Vande Bharat Express
51	22545/22546 Dehradun - Lucknow Jn Vande Bharat Express
52	22490/22489 Varanasi - Meerut City Vande Bharat Express
53	20627/20628 Nagercoil - Chennai Egmore Vande Bharat Express
54	20671/20672 Bengaluru Cantt - Madurai Vande Bharat Express
55	22500/22499 Deoghar - Varanasi Vande Bharat Express
56	22309/22310 Jamalpur - Howrah Vande Bharat Express
57	20871/20872 Rourkela - Howrah Vande Bharat Express

58	20893/20894 Patna - Tatanagar Vande Bharat Express
59	20892/20891 Tatanagar - Brahmapur Vande Bharat Express
60	22303/22304 Gaya - Howrah Vande Bharat Express
61	20669/20670 Pune - Hubballi Vande Bharat Express
62	20673/20674 Pune - Chhatrapati Shahu Maharaj (T) Vande Bharat Express
63	20101/20102 Secunderabad - Nagpur Vande Bharat Express
64	20829/20830 Visakhapatnam - Durg Vande Bharat Express
65	21893/21894 Patna - Tatanagar Vande Bharat Express
66	21895/21896 Patna - Tatanagar Vande Bharat Express
67	20176/20175 Banaras - Agra Cantt. Vande Bharat Express
68	26901/26902 Veraval - Sabarmati Vande Bharat Express
69	26401/26402 Srinagar - Shri Mata Vaishno Devi Katra Vande Bharat Express
70	26403/26404 Srinagar -Shri Mata Vaishno Devi Katra Vande Bharat Express
71	26502/26501 Patliputra - Gorakhpur Vande Bharat Express
72	26751/26752 KSR Bengaluru - Belagavi Vande Bharat Express
73	26406/26405 Amritsar - Shri Mata Vaishno Devi Katra Vande Bharat Express
74	26101/26102 Pune - Ajni Vande Bharat Express
75	26302/26301 Jogbani - Danapur Vande Bharat Express
76	26481/26482 Delhi Cantt - Jodhpur Vande Bharat Express
77	26471/26472 Delhi Cantt - Bikaner Vande Bharat Express
78	26462/26461 Delhi - Firozpur Cantt. Vande Bharat Express
79	26651/26652 Ernakulam - KSR Bengaluru Vande Bharat Express

80	26506/26505 Khajuraho - Banaras Vande Bharat Express
81	26504/26503 Saharanpur - Gomtinagar Vande Bharat Express

Besides, introduction of train services, including Vande Bharat services and its variants, on any route/section, is an on-going process, which depends on various factors including:

- Capacity of that section.
- Availability of path.
- Availability of required rolling stock.
- Availability of matching infrastructure for rolling stock.
- Maintenance requirement of railway tracks and other assets.

Track upgradation:

Strengthening, upgradation, modernisation and improvement of track infrastructure is a continuous and ongoing process over Indian Railways. The following measures are being taken by Indian Railways to upgrade railway tracks:

i. Modern track structure consisting of 60kg, 90 Ultimate Tensile Strength (UTS) rails, Wider and heavier Pre-stressed Concrete Sleepers (PSC) with elastic fastening, fan-shaped layout turnout on PSC sleepers and H-beam Sleepers on girder bridges are being used while carrying out primary track renewals.

ii. The Thick Web Switches and Weldable CMS Crossings are being used in turnout renewal works.

iii. Supply of 260m long rail panels have been increased to avoid welding of joints, thereby improving safety and riding quality

iv. Thick Web Switch Expansion Joints are being used in place of earlier Conventional/Improved SEJs.

v. Adoption of better welding technology for rails i.e. Flash Butt Welding.

vi. Adoption of mechanized system for track maintenance using high output plain tampers and points & crossing tampers for improved maintainability & reliability of track.

vii. Deployment of state-of-the-art modern machines including Rail Grinding Machines to further improve asset reliability.

viii. Mechanisation of track laying activities through use of track machines like PQRS, TRT, T-28 etc.

ix. Interlocking of Level Crossing (LC) Gates for enhancing safety at LC gates.

x. Use of advanced Phased Array technology of testing of rail and welds.

xi. Deployment of Integrated Track Monitoring Systems (ITMS) and Oscillation Monitoring System (OMS) for comprehensive health assessment to ascertain optimal maintenance requirements.

xii. Adoption of portable Track Measuring Trolley for continuous recording of track parameters in yards.

xiii. Using web enabled Track Management System (TMS) for integration and data analytics of the track inspection records received through various sources to enable precise maintenance inputs.

As a result of above measures, there has been significant increase in speed potential of the tracks. The details of speed potential of railway tracks during 2014 vis-a-vis 2026 are as under:

Sectional Speed (kmph)	2014		2026 (up to Feb'26)	
	Track Km	%	Track Km	%
130 & above	5,036	6.3	23,713	22.4
110 - 130	26,409	33.3	62,036	58.7
< 110	47,897	60.4	19,922	18.9
Total	79,342	100	1,05,671	100

Passenger's Safety:

Safety is accorded the highest priority on Indian Railways. As a consequence of various safety measures taken over the years, there has been a steep decline in the number of accidents.

Number of Consequential Train Accidents has reduced as shown in the table below:-

Year	**Consequential Accidents**
2014-15	135
2025-26 (upto 28.02.2026)	14 (90% lesser)

Another important index showing improvement in safety in train operations is Consequential Accident Index, the details of which are as under:-

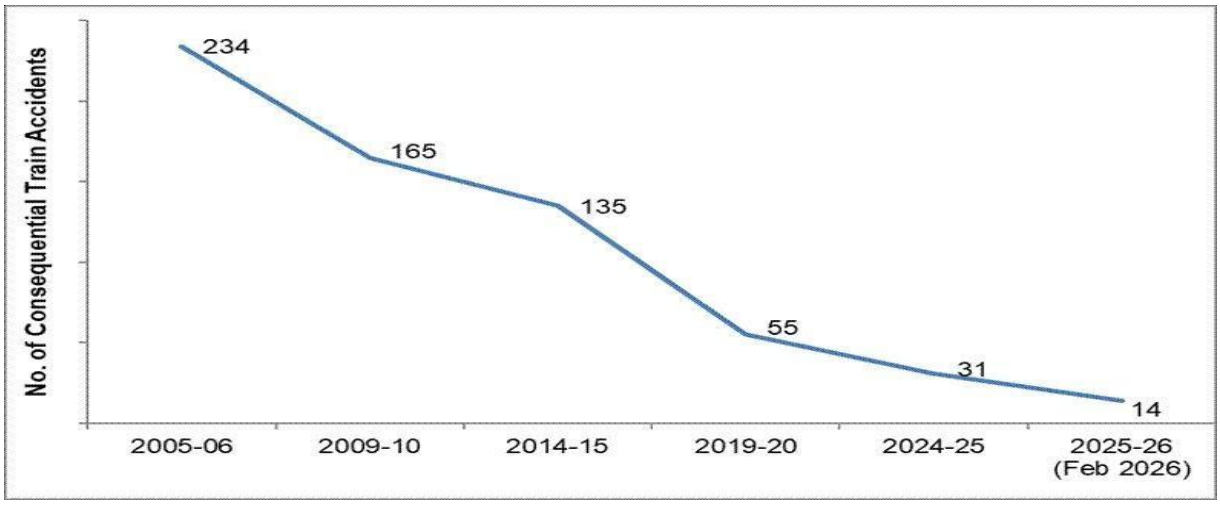
Consequential Accident Index:-

Year	**Accident Index**
2014-15	0.11
2024-25	0.03 (73% lesser)

This index measures number of consequential accidents as a ratio of total running kilometers of all trains.

Accident Index = No. of consequential accidents

No. of trains X million kilometers run



The various safety measures taken to enhance safety in train operations are as under:-

1. On Indian Railways, the expenditure on Safety related activities has increased over the years as under:-

Expenditure/Budget on Safety related activities (Rs. in Cr.)	
2013-14	39,200
2022-23	87,336
2023-24	1,01,662
2024-25	1,14,022
2025-26	1,17,693
2026-27	1,20,389

2. Electrical/Electronic Interlocking Systems with centralized operation of points and signals have been provided at 6,665 stations up to 28.02.2026 to reduce accidents due to human failure.

3. Interlocking of Level Crossing (LC) Gates has been provided at 10,153 Level Crossing Gates up to 28.02.2026 for enhancing safety at LC Gates.

4. Complete Track Circuiting of stations to enhance safety by verification of track occupancy by electrical means has been provided at 6,669 stations up to 28.02.2026.

5. Indian Railways has gone for implementation of indigenously developed Automatic Train Protection (ATP) system, which required safety certification of highest order (SIL 4). Kavach has been adopted as a National ATP system in July 2020. Based on deployment of Kavach version 3.2 on 1465 RKm on South Central Railway and experience gained, further improvements were made. Finally, Kavach specification version 4.0 was approved by RDSO on 16.07.2024. After extensive and elaborate trials,

Kavach Version 4.0 has been successfully commissioned on 1638 Route Kilometres, covering the high density Delhi- Mumbai and Delhi-Howrah routes as below:

SN	Section	Progress (Route Km)
(1)	**Delhi-Mumbai route:**	
i	Junction cabin – Palwal – Mathura –Nagda section	667
ii	Vadodara – Ahmedabad section	96
iii	Vadodara – Virar section	336
(2)	**Delhi – Howrah route:**	
i	Gaya Sarmatanr section	93
ii	Chota Ambana - Bardhaman – Howrah section	260
iii	Subedarganj-Kanpur	186

Further, track side Kavach implementation work has been taken up on 24,427 RKM covering all GQ, GD, HDN and identified sections of Indian Railways.

6. 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.

7. System of disconnection and reconnection for S&T equipment as per protocol has been re-emphasized.

8. All locomotives are equipped with Vigilance Control Devices (VCD) to improve alertness of Loco Pilots.

9. Retro-reflective sigma boards are provided on the mast which is located two OHE masts prior to the signals in electrified territories to alert the crew about the signal ahead when visibility is low due to foggy weather.

10. 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.

11. Modern track structure consisting of 60kg, 90 Ultimate Tensile Strength (UTS) rails, Prestressed Concrete Sleeper (PSC) Normal/Wide base sleepers with elastic fastening, fan shaped layout turnout on PSC sleepers, Steel Channel/H-beam Sleepers on girder bridges is used while carrying out primary track renewals.

12. Mechanisation of track laying activity through use of track machines like PQRS, TRT, T-28 etc. to reduce human errors.

13. Maximizing supply of 130m/260m long rail panels for increasing progress of rail renewal and avoiding welding of joints, thereby improving safety.

14. Ultrasonic Flaw Detection (USFD) testing of rails to detect flaws and timely removal of defective rails.

15. Laying of longer rails, minimizing the use of Alumino Thermic Welding and adoption of better welding technology for rails i.e., Flash Butt Welding.

16. Monitoring of track geometry by OMS (Oscillation Monitoring System) and TRC (Track Recording Cars).

17. Patrolling of railway tracks to look out for weld/rail fractures.

18. The use of Thick Web Switches and Weldable CMS Crossing in turnout renewal works.

19. Inspections at regular intervals are carried out to monitor and educate staff for observance of safe practices.

20. Web based online monitoring system of track assets viz. Track database and decision support system has been adopted to decide rationalized maintenance requirement and optimize inputs.

21. Detailed instructions on issues related with safety of Track, e.g. integrated block, corridor block, worksite safety, monsoon precautions, etc. have been issued.

22. Preventive maintenance of railway assets (Coaches & Wagons) is undertaken to ensure safe train operations.

23. Replacement of conventional ICF design coaches with LHB design coaches is being done.

24. All unmanned level crossings (UMLCs) on Broad Gauge (BG) route have been eliminated by January 2019.

25. 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.

26. Indian Railways has displayed Statutory “Fire Notices” for widespread passenger information in all coaches. Fire posters are provided in every coach so as to educate 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.

27. Production Units are providing Fire detection and suppression system in newly manufactured Power Cars and Pantry Cars, 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.

28. Regular counselling and training of staff is undertaken.

29. Concept of Rolling Block introduced in Indian Railways (Open Lines) GeneralRules vide Gazette notification dated 30.11.2023, wherein work of integrated maintenance/repair/replacement of assets is planned up to 52 weeks in advance on rolling basis and executed as per plan.

The details of the Safety related works related to better maintenance practices, Technological improvements, better infrastructure and rolling stock etc. undertaken by Railways are tabulated below:-

S.N.	Item	2004-05 to 2013-14	2014-15 to 2024-25	2014-25 Vs. 2004-14
	Technological Improvements			
1.	Use of high-quality rails (60 Kg) (Km)	57,450 Km	1.43 Lakh Km	More than 2 times
2.	Longer Rail Panels (260m) (Km)	9,917 Km	77,522 Km	Nearly 8 times
3.	Electronic Interlocking (Stations)	837 Stations	3,691 Stations	More than 4 times
4.	Fog Pass Safety Devices (Nos.)	As on 31.03.14: 90 Nos.	As on 31.03.25: 25,939 Nos.	288 times
5.	Thick Web Switches (Nos.)	Nil	28,301 Nos.	
	Better Maintenance Practices			
1.	Primary Rail Renewal (Track Km)	32,260 Km	49,941 Km	1.5 times
2.	USFD (Ultra Sonic Flaw detection) Testing of Welds (Nos.)	79.43 Lakh	2 Crore	More than 2 times
3.	Weld failures (Nos.)	In 2013-14: 3699 Nos.	In 2024-25: 370 Nos.	90% reduction
4.	Rail fractures (Nos.)	In 2013-14: 2548 Nos.	In 2024-25: 289 Nos.	More than 88% reduction
	Better Infrastructure and Rolling Stock			
1.	New Track KM added (Track Km)	14,985 Km	34,428 Km	More than 2 times
2.	Flyovers (RoBs)/Underpasses (RUBs) (Nos.)	4,148 Nos.	13,808 Nos.	More than 3 times
3.	Unmanned Level crossings (Nos.) on BG	As on 31.03.14: 8,948	As on 31.03.24:Nil (All eliminated by 31.01.19)	Removed
4.	Manufacture of LHB Coaches (Nos.)	2,337 Nos.	42,677	More than 18 times

Kavach:

Indian Railway is continuously modernizing current infrastructure of its signalling system as under:

1. Electrical/Electronic Interlocking Systems with centralized operation points and signals in place of old mechanical signalling have been provided at 6665 stations as on 28.02.2026, out of which Electronic Interlocking have been provided at 3870 stations.
2. Interlocking of Level Crossing Gates (LC) has been provided at 10153 Level Crossing Gates upto 28.02.2026 for enhancing safety at LC Gate.
3. Complete Track Circuiting of stations to enhance safety by verification of track occupancy by electrical means has been provided at 6,665 stations up to 28.02.2026.
4. Axle counters for automatic clearance of Block Section, BPAC (Block Proving Axle Counter) are provided to ensure complete arrival of train without manual intervention before granting line clear to receive next train and to reduce human element. These systems have been provided on 6149 Block Sections up to 28.02.2026.
5. Automatic Block Signalling (ABS) that enhances line capacity within existing track infrastructure has been provided at 6897 Route km upto 28.02.2026.
6. 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.
7. System of disconnection and reconnection for S&T equipment as per protocol has been re-emphasized.
8. Rolling block system for maintenance of assets has been introduced to increase their reliability.
9. Regular inspection and maintenance of all railway signalling assets is carried out as per laid down norms to ensure safe operation of trains. These are regularly monitored through designated officials in divisions across zonal railways. Staff are regularly counselled and trained.
10. Indian Railways has gone for implementation of indigenously developed Automatic Train Protection (ATP) system, which required safety certification of highest order (SIL 4). Kavach has been adopted as a National ATP system in July 2020.
11. After extensive and elaborate trials, Kavach Version 4.0 has been successfully commissioned on 1638 Route Kilometres, covering the high density Delhi- Mumbai and Delhi-Howrah routes as below:

SN	Section	Progress (Route Km)
(1)	**Delhi-Mumbai route:**	
i	Junction cabin – Palwal – Mathura –Nagda section	667

ii	Vadodara - Ahmedabad section	96
iii	Vadodara - Virar section	336
(2)	**Delhi – Howrah route:**	
i	Gaya Sarmatanr section	93
ii	Chota Ambana - Bardhaman – Howrah section	260
iii	Subedarganj - Kanpur	186

12. Track side Kavach implementation work has been taken up on 24,427 RKM covering all GQ, GD, HDN and identified sections of Indian Railways.

Hydrogen Train-set:

Indian Railways has taken up a state-of-the-art project for running of its first hydrogen train, on pilot basis, as per specifications framed by the Research, Design & Standards Organization (RDSO) to demonstrate the use of hydrogen powered train technology in Railways.

Manufacturing of Hydrogen Train-set has been completed. For providing hydrogen for use in this train-set, a hydrogen plant has been set up at Jind. In this plant, hydrogen is being produced using electrolysis process which is key element of green hydrogen generation.

Prominent features of Hydrogen Train-set are as below:

- Designed and Developed in India demonstrating Indian Railways' commitment to Atmanirbhar Bharat.
- Presently, it is the world's longest (10 coaches) and most powerful (2400 kW) Hydrogen Train-set on Broad Gauge platform.
- The train-set comprises of two Driving Power Cars (DPCs) of 1200 kW each, totalling 2400 kW along with eight passenger cars.
- Zero CO2 emissions; only emission is water vapour.
- Major step in development of next generation fuel technology in Railways.

This project involved designing from first stages, prototype manufacturing and first-time development of hydrogen traction technology in Indian Railways. The project establishes the commitment of Indian Railways towards advancements in alternative energy-powered train travel thereby ensuring a cleaner and greener future for the country's transportation sector.

Electrification of Railway Network:

Electrification of railway network on Indian Railways has been taken up in mission mode. So far, about 99.4% of Broad Guage (BG) network has been electrified. The electrification in remaining network has been taken up. Electrification carried out during 2014-2025 and before 2014 is as under:-

Period	Route Kilometer
Before 2014 (about 60 years)	21,801
2014-2025	46,900

Reservation facilities:

With a view to prevent misuse of reservation facilities and to ensure transparency, tickets under Tatkal Scheme can be booked through the website of Indian Railway Catering and Tourism Corporation (IRCTC)/its app only by Aadhaar authenticated users and agents are barred from booking opening day Tatkal tickets during the first 30 minutes of opening of Tatkal booking.

Further, during the opening day of general reservation of ARP, the reserved general tickets can be booked through the website of IRCTC or its app only by Aadhar authenticated users.

RailOne App

Indian Railway has launched RailOne App on 01.07.2025, which enables passengers to book reserved as well as unreserved tickets on mobile phone.

The App combines all the public facing services of Indian railways like reserved ticketing. unreserved ticketing, platform ticketing, train enquiry, PNR enquiry, Railmadad etc. into a single platform. The user can avail all these services in integrated manner through single login. This, in effect, brings pubic facing services of Indian railways to passenger's palm.

Rail Connect App

The facility of ticket booking is also available through Rail Connect App. This App allows users to search for trains, inquire about train routes, and check seat availability without needing to log in.

In addition, the reserved tickets can also be booked online on www.irctc.co.in. The share of e-ticketing has reached to more than 87% of the total reserved tickets booked on Indian Railways.

Gati Shakti Multi-Modal Cargo Terminal (GCT):

In order to boost investment from industry in development of additional terminals for handling rail cargos, 'Gati Shakti Multi-Modal Cargo Terminal (GCT)' policy has been launched. The Gati Shakti

Cargo Terminals (GCTs) are being developed by private players, and can be developed on non-Railway land or fully/partially on Railway land. The location of GCTs is being decided on the basis of demand from industry and potential of Cargo traffic. So far, 128 GCTs have been commissioned and further, In-principle approval (IPAs) for 292 more GCT locations have already been approved.

DFC Project

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 the Western Dedicated Freight Corridor (WDFC) from Jawaharlal Nehru Port Terminal (JNPT) to Dadri (1506 Km).

The work on EDFC has been completed and commissioned. In WDFC, 1404 RKm out of total 1506 RKm has been completed and commissioned. The balance work on WDFC from Vaitarna-JNPT section (102 Rkm) has been taken up.

A New Dedicated Freight Corridor i.e., Dankuni - Surat, has been announced by the Govt. of Bharat in the Budget 2026. The work of preparation/updation of DPR for the DFC has been assigned to DFCCIL. Alignment and Financing model are under finalisation.

High-Speed Project

Presently, Mumbai - Ahmedabad High Speed Rail (MAHSR) Project (508 kms) passing through Maharashtra and Gujarat is under execution.

The Mumbai-Ahmedabad High Speed Rail (MAHSR) Project (508 km) is passing through the States of Gujarat, Maharashtra and Union Territory of Dadra & Nagar Haveli with 12 stations planned at Mumbai, Thane, Virar, Boisar, Vapi, Billimora, Surat, Bharuch, Vadodara, Anand, Ahmedabad and Sabarmati.

Entire land (1389.5 Ha.) for MAHSR project has been acquired. All Statutory Clearances have been obtained. All 1651 utilities have been shifted. The delay in land acquisition in the State of Maharashtra has impacted the project till 2021. The land acquisition picked up in 2022 in Maharashtra.
The progress of various major items so far is as under:

Item	**Progress**
Piers	430 kms.
Girder	341 kms.
Track Bed	174 kms.
OHE Masts	153 kms.

The progress of stations is given below:-

S.No.	Station	Status
1	Sabarmati	Foundation works completed, Platform slab & roof structural works and finishing works are in progress.
2	Ahmedabad	Structural works completed and finishing works have been taken up.
3	Anand/Nadiad	
4	Vadodara	Foundation work completed, structural works and finishing works have been taken up.
5	Bharuch	Structural works completed and finishing works have been taken up.
6	Surat	
7	Bilimora	
8	Vapi	
9	Boisar	Foundation works have been taken up and in advanced stage. Structural works have been taken up.
10	Virar	
11	Thane	
12	BKC (Mumbai)	This is an underground station. Foundation works almost completed and Base Slab has been taken up.

The progress on the River Bridges is as under:-

S. No.	River Name	Status
1	Sabarmati River (480m)	Sub-Structure work completed, Superstructure work has been taken up.
2	Meshwa River (120m)	Bridge construction completed.
3	Vatrak River (280m)	
4	Mohar (Shedhi) River (160m)	
5	Mahi River (720m)	11 out of 12 wells completed;5 spans launched
6	Vishwamitri River (80m)	Bridge construction completed.
7	Dhadhar River (120m)	
8	Narmada River (1366m)	21 out of 25 wells completed; 4 spans launched
9	Kim River (120m)	Bridge construction completed.

10	Tapi River (720m)	Foundation work has been taken up, 10 out of 12 wells completed
11	Mindhola River (240m)	Bridge construction completed.
12	Purna River (360m)	
13	Ambika River (200m)	
14	Venganiya River (200m)	
15	Kaveri River (120m)	
16	Kharera River (120m)	
17	Auranga River (320m)	
18	Par River (320m)	
19	Kolak River (160m)	
20	Daman Ganga River (360m)	
21	Darotha River (80m)	
22	Jagani River (360m)	Foundation works have been completed
23	Vaitarna River (2320m)	12 Pile Cap and 11 Pier (out of 58) completed.
24	Ulhas River Branch (120m)	Temporary Access Bridge (TAB) completed to start the foundation work.
25	Desai Khadi River Bridge (400m)	Geo-technical Investigation (GTI) has been completed and Design work has been taken up.

The work of the under-sea tunnel (approximately 21 km) has commenced, out of which 4.8 km of tunnel between Ghansoli and Shilphata in Maharashtra has been completed.

Further, to strengthen the national transport infrastructure and provide a fillip to regional economic growth, the Government has announced the development of following seven new High-Speed Rail (HSR) corridors in the Union Budget 2026-27:-

(i) Mumbai-Pune

(ii) Pune-Hyderabad

(iii) Hyderabad-Bengaluru

(iv) Hyderabad-Chennai

(v) Chennai-Bengaluru

(vi) Delhi-Varanasi

(vii) Varanasi-Siliguri

Being highly capital intensive, the decision to sanction any HSR Corridor/Project depends on many factors such as outcome of DPR, techno-economic feasibility studies and availability of resources such as financing options etc.

Capacity enhancement of railway network

Capacity enhancement of railway network has been taken up by Indian Railways in a big way during last 11 years. The details of commissioning/laying of new track across Indian Railways is given below:-

Period	New track Commissioned	Average commissioning of new tracks
2009-14	7,599 Km	4.2 Km/day
2014-25	34,428 Km	8.6 Km/day (more than 2 times)

Railway infrastructure projects

As on 01.04.2025, across Indian Railways, 431 Railway infrastructure projects including port-connectivity (154 New Line, 33 Gauge Conversion and 244 Doubling) of total length 35,966 Km, costing approx. Rs. 6.75 lakh crore are sanctioned. The summary is as under:-

Category	No of Projects	Total Length NL/GC/DL (km)	Length Commissioned till Mar'25 (Km)	Total Exp upto Mar'25 (Rs. in Cr)
New Lines	154	16,142	3,036	1,45,318
Gauge Conversion	33	4,180	2,997	22,753
Doubling / Multitracking	244	15,644	6,736	1,22,858
Total	**431**	**35,966**	**12,769**	**2,90,929**

Zone-wise/year-wise details of all Railway projects are made available in public domain on Indian Railway's website.

Completion of Railway project/s depends on various factors which include the following:

- Land acquisition by State Government
- Forest clearance
- Shifting of infringing utilities
- Statutory clearances from various authorities
- Geological and topographical conditions of area
- Law and order situation in the area of project site
- Number of working months in a year for particular project site etc.

All these factors affect the completion time and cost of the project/s.

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