GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

RAJYA SABHA
UNSTARRED QUESTION NO.1552
ANSWERED ON 12.12.2025

MODERNISED RAILWAY INFRASTRUCTURE ACROSS THE COUNTRY

1552 DR. K. LAXMAN:
SHRI JOSE K. MANI:

Will the Minister of RAILWAYS be pleased to state:

(a) whether Government has taken steps to modernise railway infrastructure across the country;

(b) if so, the details thereof;

(c) whether the Government proposes to expedite the introduction of new Vande Bharat trains; and

(d) if not, the reasons therefor?

ANSWER

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

(SHRI ASHWINI VAISHNAW)

(a) to (d): Modernisation and upgradation of railway infrastructure is a continuous and ongoing process of Indian Railways. During last 11 years, Indian Railways has taken up several measures to upgrade/modernize track, Signaling system, OHE, Rolling stocks, Railway stations etc. These measures are as under:

- 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 Steel Channel/H-beam Sleepers on girder bridges are being used while carrying out track renewals/construction of new tracks.
- Thick Web Switches and Weldable CMS Crossings are used in turnout works.

- Supply of 130 m/260 m long rail panels has been increased to avoid welding of joints, thereby improving safety.
- Thick Web Switch Expansion Joints are being used in place of earlier Conventional SEJs.
- Adoption of better welding technology for rails i.e. Flash Butt Welding in place of Alumino Thermic Welding.
- Adoption of mechanized system for track maintenance using high output plain tampers and points & crossing tampers for improved maintainability & reliability of track.
- Deployment of state-of-the-art modern machines including Rail Grinding Machines to further improve asset reliability.
- Mechanisation of track laying activities through use of track machines like PQRS, TRT, T-28, etc.
- Use of advanced Phased Array technology of testing for rails and welds.
- Deployment of Integrated Track Monitoring System (ITMS) and Oscillation Monitoring System (OMS) for comprehensive health assessment to ascertain optimal maintenance requirements.
- Adoption of portable Track Measuring Trolley for continuous recording of track parameters in yards.
- To improve safety and mobility of trains, all unmanned level crossings on broad Gauge (BG) network have been eliminated. To facilitate road users & to improve safety, 13,808 no. of ROBs/RUBs have also been constructed on Indian Railways during the last 11 years. As on 01.11.2025, 4,689 no. ROBs/RUBs are sanctioned at cost of Rs. 1,11,583 Cr on Indian Railways, which are at various stages of planning and execution.
- 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. Electrical/Electronic Interlocking Systems with centralised operation of points and signals in place of old mechanical signaling have been provided at 6,656 stations up to 31.10.2025.
- Interlocking of Level Crossing Gates (LC) has been provided at 10,098 Level Crossing Gates up to 31.10.2025 for enhancing safety at LC Gates.
- 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 6,142 Block Sections up to 31.10.2025.

- Automatic Block Signalling (ABS) enhances line capacity within existing track infrastructure and has been provided at 6341 Route km upto 31.10.2025.
- Indian Railways has also gone for implementation of advance technology system "Kavach" as an Automatic Train Protection (ATP) system. Kavach is indigenously developed Automatic Train Protection (ATP) system, which required safety certification of highest order. Kavach has also been adopted as a National ATP system in July 2020.
- Electrification of railway network on Indian Railways has been taken up in mission mode. So far, about 99.2% of Broad Gauge (BG) network has been electrified. The electrification in remaining network has been taken up.
- The loco Production Units have been modernized / upgraded to enable them turn out more number of state-of-the-art three phase electric locos each year.
- All locomotives are equipped with Vigilance Control Devices (VCD) to monitor and ensure alertness of Loco Pilots.
- Head on Generation (HOG) scheme has been implemented in passenger locomotives for feeding electric supply to coaches for train lighting and air conditioning thereby reducing carbon emissions, noise and consumption of diesel.
- Real Time Train Information System (RTIS) has been provided for automatic acquisition of train movement timings.

Modernisation of Rolling stocks

The work of replacement of earlier ICF coaches with safer and more modern LHB coaches has been taken up in a phased manner. Technologically superior LHB coaches have better riding, improved aesthetics and features like Lightweight design, Anti climbing features. Air suspension (Secondary) with failure indication system, stainless steel shell and disc brake system, etc.

To improve travel experience of the passengers, Indian Railways has introduced indigenously designed and manufactured Vande Bharat trains with modern coaches, advanced

safety features and passenger amenities. Presently, 164 nos Vande Bharat services are in operation on the Indian Railway network.

These new Vande Bharat Trains have following features:

I. Fitted with KAVACH.
II. Jerk Free Semi-Permanent couplers.
III. Centrally controlled Automatic Plug Doors and Fully Sealed wider gangways.
IV. Emergency Alarm Push buttons and Talk Back Units on all Coaches.
V. Improved fire safety – Aerosol based fire detection and suppression system in electrical cabinets and lavatories.
VI. Higher acceleration with design/operating speed of 180/160 KMPH.
VII. Driver-Guard communication with voice recording facility & Crash hardened memory.
VIII. Air conditioning units with indigenously developed UV-C lamp based disinfection system.
IX. Better Ride Comfort.
X. CCTVs in all Coaches.
XI. For Divyangjan passengers special lavatory in the driving coaches on each end.
XII. Coach condition monitoring System (CCMS) display with remote monitoring.

Railways have developed fully non-AC modern train named as Amrit Bharat Express. Already 30 services are in operation. Presently, these modern trains comprise of 11 General Class coaches, 8 Sleeper Class coaches, 01 Pantry car and 02 Luggage cum Divyangjan coaches.

These trains have following enhanced features and amenities:

I. Better aesthetics of seat and berths with enhanced look & feel on the lines of Vande Bharat Sleeper.
II. Jerk Free Semi-Automatic Couplers.
III. Improved Crashworthiness in coaches by provision of crash tube.
IV. Provision of CCTV system in all coaches and Luggage room.
V. Improved designs of toilets.
VI. Improved design of Ladder for ease of climbing on to the berth.

VII. Improved LED Light fitting & Charging Sockets.
VIII. Provision of EP assisted braking system.
IX. Aerosol based fire suppression system in toilets and electrical cubicles.
X. USB Type-A and Type-C mobile charging sockets.
XI. Emergency Talk Back system for two-way communication between Passenger and Guard/Train Manager.
XII. Non-AC pantry with enhanced heating capacity.
XIII. Fully sealed gangways with quick release mechanism for easy attachment and detachment.

Namo Bharat Rapid Rail has been introduced to enhance the travelling experience of suburban and regional commuters for inter-city short distance movement by harnessing the features of Vande Bharat Trains. Presently, 4 Namo Bharat Rapid Rail services are in operation on the Indian Railway network.

The prominent features of Namo Bharat Rapid Rail are as follows:

I. Centrally controlled Double Leaf Automatic Sliding Doors.
II. CCTVs for safety and passenger surveillance.
III. Modular interior with Cushioned Seats and Sealed Flexible Gangway.
IV. Emergency Talk System.
V. Continuous LED lighting with Energy Efficient Lighting system.
VI. FRP Modular Toilets with vacuum evacuation.
VII. Fully Air-Conditioned trains with Driver cab AC.

Introduction of new train services, including Vande Bharat Express services, is an ongoing process on Indian Railways which depends on various factors which include :

I. Capacity of that section
II. Availability of path
III. Availability of required rolling stock
IV. Availability of matching infrastructure for rolling stock
V. Maintenance requirement of railway tracks and other assets

- The details of the various modernization/upgradation/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

- To improve travel experience of the passengers & comfort, Ministry of Railways has launched Amrit Bharat Station Scheme for redevelopment of stations with a long-term approach. The scheme involves preparation of master plans and their implementation in phases to improve the stations. The master planning includes:
    I. Improvement of access to station and circulating areas
    II. Integration of station with both sides of city
    III. Improvement of station building
    IV. Improvement of waiting halls, toilets, sitting arrangement, water booths
    V. Provision of wider foot over bridge/air concourse commensurate with passenger traffic
    VI. Provision of lift/escalators/ramp
    VII. Improvement /Provision of platform surface and cover over platforms
    VIII. Provision of kiosks for local products through schemes like 'One Station One Product'
    IX. Parking areas, Multimodal integration
    X. Amenities for Divyangjans
    XI. Better passenger information systems
    XII. Provision of executive lounges, nominated spaces for business meetings, landscaping, etc. keeping in view the necessity at each station.
- Amrit Bharat Station Scheme also envisages sustainable and environment friendly solutions, provision of ballastless tracks etc. as per necessity, phasing and feasibility and creation of city centre at the station in the long term.
- So far 1337 stations have been identified under Amrit Bharat Station Scheme and till now works of 155 stations have been completed.
- Development / Upgradation / Modernisation of stations including under Amrit Bharat Station Scheme is generally funded under Plan Head-53 'Customer Amenities'. The details of allocation and expenditure under Plan Head-53 are maintained Zonal Railway-wise and not work-wise, or station wise or state-wise. The fund allocation of ₹ 12,118 crore has been made for the financial year 2025-26 under Plan Head-53 for all zonal railways and expenditure (up to October 2025) of ₹ 7,253 crore has been incurred so far.

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