

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAJYA SABHA
UNSTARRED QUESTION NO. 3310
ANSWERED ON 20.03.2026

AGEING INFRASTRUCTURE OF RAILWAYS

3310 DR. LAXMIKANT BAJPAYEE:

Will the Minister of RAILWAYS be pleased to state:

- (a) whether it is a fact that Indian Railways is now having ageing infrastructure and much of the existing railway infrastructure, including tracks, signaling systems and rolling stock is old and needs substantial modernization to improve efficiency and safety; and
- (b) if so, the Government's plan to improve this situation, the complete details of the plan including budget provisions to be made for the purpose?

ANSWER

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

(SHRI ASHWINI VAISHNAW)

(a) & (b) : Strengthening, upgradation, modernisation and improvement of track infrastructure is a continuous and ongoing process over Indian Railways. 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	19,923	18.9
Total	79,342	100	1,05,672	100

Further, safety is accorded the highest priority on Indian Railways. Improvement/up-gradation and modernization of Tracks, Signalling Systems and Rolling Stock to enhance safety, convenience and comfort of passengers is a continuous and ongoing process 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)

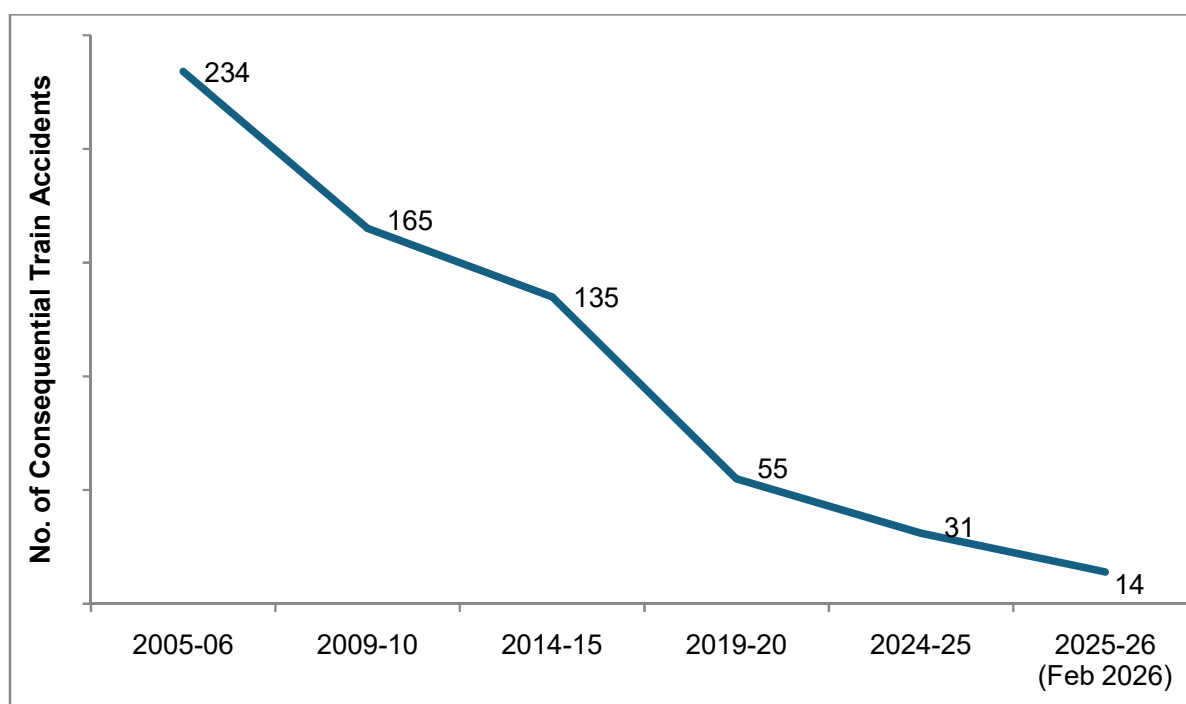
Another important index showing improvement in safety in train operations is Consequential Accident Index, the details of which are as under:-

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.

$$\text{Accident Index} = \frac{\text{No. of consequential accidents}}{\text{No. of trains X million kilometers run}}$$



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	2022-23	2023-24	2024-25	2025-26	2026-27
39,200	87,336	1,01,662	1,14,022	1,17,693	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 1,452 Route Kilometres, covering the high density Delhi - Mumbai and Delhi-Howrah routes as below:

S.N.	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

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) General Rules 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
