GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

LOK SABHA
UNSTARRED QUESTION NO. 630
TO BE ANSWERED ON 23.07.2025

TRAIN ACCIDENTS DUE TO SIGNAL FAILURES

630. SHRI SURESH KUMAR SHETKAR:

Will the Minister of RAILWAYS be pleased to state:

(a) the details of the number of train accidents caused by signal failures in the Country during the last five years, including the dates and locations of each incident;

(b) the causes identified for signal failures leading to train accidents and the preventive measures implemented to address them;

(c) the number of railway staff held accountable or undergone disciplinary action in connection with said accidents during the last five years;

(d) the details of technological upgrades / modernisation projects undertaken / planned to improve signaling systems and prevent said accidents; and

(e) whether the Government has set any specific targets / timelines to reduce the incidence of such train accidents, if so, the details thereof and the manner in which the progress is being monitored and reported?

ANSWER

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

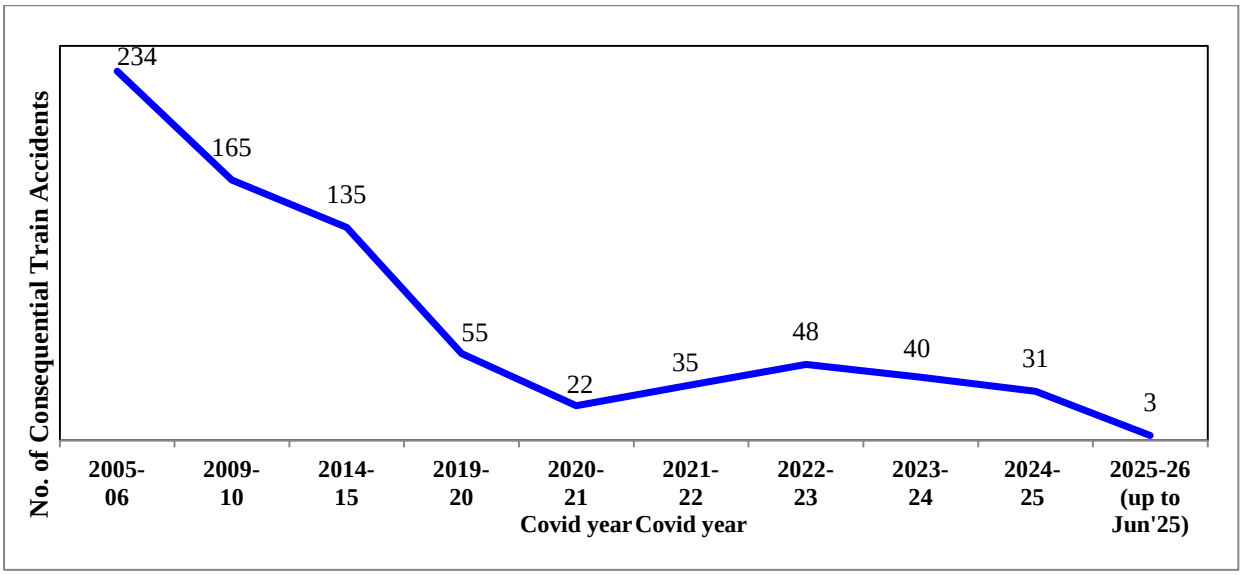
(SHRI ASHWINI VAISHNAW)

(a) to (e): 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. Consequential

Train Accidents have reduced from 135 in 2014-15 to 31 in 2024-25 as shown in the graph below.

It may be noted that the Consequential Train Accidents during the period 2004-14 was 1711 (average 171 per annum), which has declined to 31 in 2024-25 and further to 3 in 2025-26 (upto June).

Another important index showing improved safety in train operations is Accidents Per Million Train Kilometer (APMTKM) which has reduced from 0.11 in 2014-15 to 0.03 in 2024-25, indicating an improvement of approx. 73% during the said period.



Consequential Train Accidents on Indian Railways and casualties (including railway passengers and railway personnel) therein are as follows:-

Period	No. of Consequential Train Accidents	No. of Deaths	No. of Injuries
2004-05 to 2013-14	1,711	904	3,155
2014-15 to 2023-24	678	748	2,087

Each Rail accident is inquired into either by the Commission of Railway Safety, a statutory body under Ministry of Civil Aviation or by the Railway Departmental Inquiry Committees as per laid down norms.

The causes of accidents broadly include track defects, Loco / Coach defect, equipment failures including signalling, human errors, etc.

The agencies, after due deliberations, submit their findings and establish the responsibility of officers / staff leading to the rail accidents. The officers / staff held responsible are taken up under 'Railway Service (Disciplinary & Appeal) Rules' by the respective Zonal Railway.

The various safety measures taken to enhance safety in train operations including improvement of signaling systems are as under:-

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

Expenditure on Safety related activities (Rs. in Cr.)					
	2013-14 (Act.)	2022-23 (Act.)	2023-24 (Act.)	RE 2024-25	BE 2025-26
Maintenance of Permanent Way & Works	9,172	18,115	20,322	21,800	23,316
Maintenance of Motive Power and Rolling Stock	14,796	27,086	30,864	31,540	30,666
Maintenance of Machines	5,406	9,828	10,772	12,112	12,880
Road Safety LCs and ROBs/ RUBs	1,986	5,347	6,662	8,184	7,706
Track Renewals	4,985	16,326	17,850	22,669	22,800
Bridge Works	390	1,050	1,907	2,130	2,169
Signal & Telecom Works	905	2,456	3,751	6,006	6,800
Workshops Incl. PUs and Misc. expenditure on Safety	1,823	7,119	9,523	9,581	10,134
Total	39,463	87,327	1,01,651	1,14,022	1,16,470

2. **Electrical/Electronic Interlocking Systems with centralized operation of points and signals have been provided at 6,635 stations up to 30.06.2025 to reduce accident due to human failure.**
3. **Interlocking of Level Crossing (LC) Gates has been provided at 11,096 level Crossing Gates up to 30.06.2025 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 6,640 stations up to 30.06.2025.**
5. **Kavach is a highly technology intensive system, which requires safety certification of highest order. Kavach was adopted as a National ATP system in July 2020. Kavach is provided progressively in phased manner. Kavach has already been deployed on 1548 RKm on South Central Railway and North Central Railway. Presently, the work is in progress on Delhi-Mumbai and Delhi-Howrah corridors (approximately 3000 RKm). Track side works on these routes have been completed on about 2200 RKm as on 30.06.2025. Regular trials are being done on these sections.**
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	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 Nos.	34,428 Km	More than 2 times
2.	Flyovers (RoBs)/ Underpasses (RUBs)	4,148 Nos.	13,808 Nos.	More than 3 times

	(Nos.)			
3.	**Unmanned Level crossings (nos.) on BG**	**As on 31.03.14: 8948**	**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**

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