

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS**

**LOK SABHA
UNSTARRED QUESTION NO. 3821
TO BE ANSWERED ON 18.12.2024**

REASONS FOR RECURRING RAIL ACCIDENTS

3821. SHRI SHRIRANG APPA CHANDU BARNE:

Will the Minister of RAILWAYS be pleased to state:

- (a) whether poor infrastructure maintenance and aging assets have led to recurring accidents, derailments and collisions;**
- (b) if so, the response of the Government thereon;**
- (c) whether experts raise serious concerns about a worrying trend of signal failures and rail fractures which are the major contributors to accidents;**
- (d) if so, the response of the Government thereon;**
- (e) whether the Government ordered a statutory inquiry of mishap with the Kanchanjunga Express in the last year;**
- (f) if so, the details of mishap involving the Kanchanjunga Express in north Bengal;**
- (g) the details of the automatic signals protocol;**
- (h) whether there is manpower shortage; and**
- (i) if so, the reasons therefor and the step taken/proposed to be taken to meet the shortage?**

ANSWER

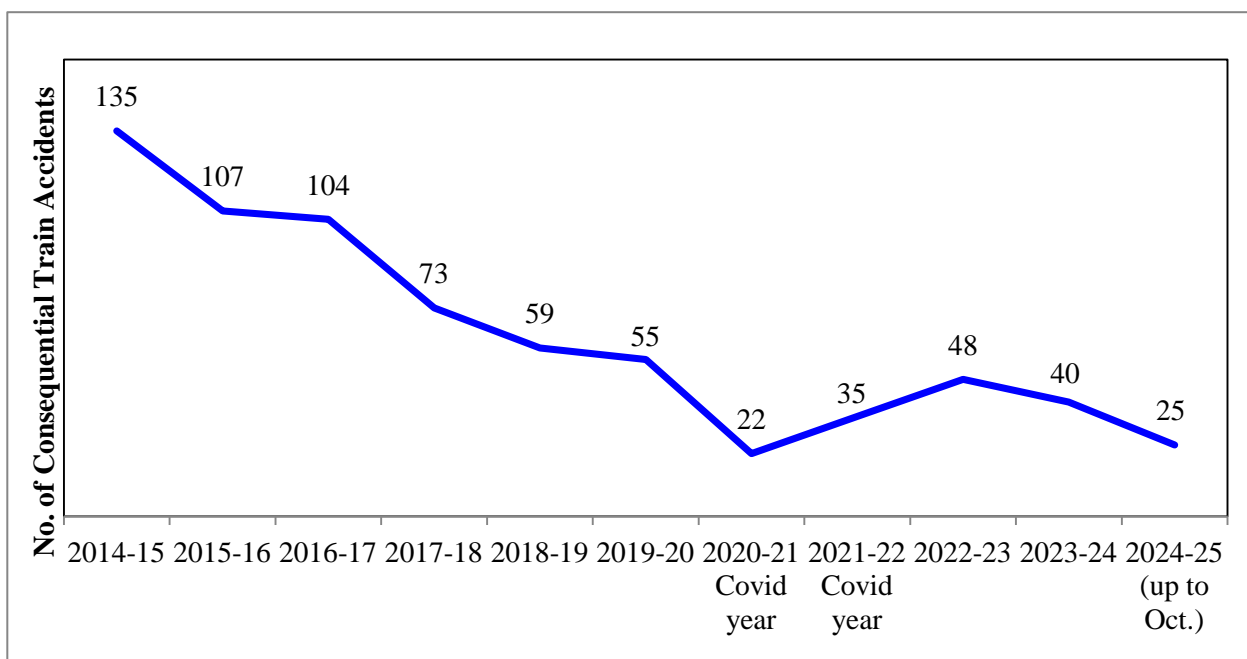
**MINISTER OF RAILWAYS, INFORMATION & BROADCASTING AND
ELECTRONICS & INFORMATION TECHNOLOGY
(SHRI ASHWINI VAISHNAW)**

(a) to (i): 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 40

in 2023-24 as shown in the graph below. The causes of these accidents broadly include track defects, loco/coach defects, equipment failures, human errors etc.

It may be noted that the consequential train accidents during the period 2004-14 was 1711 (average 171 per annum), which has declined to 678 during the period 2014-24 (average 68 per annum) i.e. a reduction of 60%.

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 2023-24, indicating an improvement of approx. 73% during the said period.



Safety is accorded the highest priority on Indian Railways. 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 on Safety related activities		(Rs. in Cr.)	
	2022-23 (Act)	2023-24(Act)	BE 2024-25
Maintenance of Permanent Way & Works	18,115	20,322	21,386
Maintenance of Motive Power and Rolling Stock	27,086	30,864	31,494
Maintenance of Machines	9,828	10,772	11,864
Road Safety LCs and ROBs/RUBs	5,347	6,662	9,980
Track Renewals	16,326	17,850	17,652
Bridge Works	1,050	1,907	2,137
Signal & Telecom Works	2,456	3,751	4,647
Workshops Incl. PUs and Misc. expenditure on Safety	7,119	9,523	9,615
Total	87,327	1,01,651	1,08,776

- 2. Electrical/Electronic Interlocking Systems with centralized operation of points and signals have been provided at 6,612 stations up to 30.11.2024 to eliminate accident due to human failure.**
- 3. Interlocking of Level Crossing (LC) Gates has been provided at 11,082 level Crossing Gates up to 30.11.2024 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 6,620 stations up to 30.11.2024.**
- 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 Route Km). Track side works on these routes have been completed on about 1969 RKm. 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, fanshaped 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 undertaken by Railways are tabulated below:-

SN	Item	2004-05 to 2013-14	2014-15 to 2023-24	2014-24 Vs. 2004-14
	Track Maintenance			
1.	Expenditure on Track Renewal (Rs. in Cr.)	47,038	1,09,577	2.33 times
2.	Rail Renewal Primary (Track Km)	32,260	43,335	1.34 times
3.	Use of high-quality rails (60 Kg) (Km)	57,450	1,23,717	2.15 times
4.	Longer Rail Panels (260m) (Km)	9,917	68,233	6.88 times

5.	USFD (Ultra Sonic Flaw detection) Testing of Rails (Track km)	20,19,630	26,52,291	1.31 times
6.	USFD (Ultra Sonic Flaw detection) Testing of Welds (Nos.)	79,43,940	1,73,06,046	2.17 times
7.	New Track KM added (Track km)	14,985	31,180	2.08 times
8.	Weld failures (Nos.)	In 2013-14: 3699	In 2023-24: 481	87% reduction
9.	Rail fractures (Nos.)	In 2013-14: 2548	In 2023-24: 383	85% reduction
10	Thick Web Switches (Nos.)	Nil	21,127	
11	Track Machines (Nos.)	As on 31.03.14 = 748	As on 31.03.24 = 1,661	122% increase
Level Crossing Gate Elimination				
1.	Elimination of Unmanned Level Crossing Gates (Nos.)	As on 31.03.14: 8948	As on 31.03.24: Nil (All eliminated by 31.01.19)	100% reduction
2.	Elimination of Manned Level Crossing Gates (Nos.)	1,137	7,075	6.21 Times
3.	Road over Bridges (RoBs)/ Road under Bridges (RUBs) (Nos.)	4,148	11,945	2.88 Times
4.	Expenditure on LC Elimination (LC+ROB+RUB)	8,825	41,957	4.75 Times
Bridge Rehabilitation				
1.	Expenditure on Bridge Rehabilitation (Rs. in Cr.)	3,924	8,255	2.10 Times
Signalling Works				

1.	Electronic Interlocking (Stations)	837	2,964	3.52 times
2.	Automatic Block Signaling (Km)	1,486	2,497	1.67 times
3.	Fog Pass Safety Devices (Nos.)	As on 31.03.14: 90	As on 31.03.24: 19,742	219 times
	Rolling Stock			
1.	Manufacture of LHB Coaches (Nos.)	2,337	36,933	15.80 times
2.	Provision of Fire and Smoke Detection System in AC coaches (Nos. of Coaches)	0	19,271	
3.	Provision of Fire Detection and Suppression System in Pantry and Power Cars (Nos. of Coaches)	0	2,991	
4.	Provision of Fire Extinguishers in Non - AC coaches (Nos. of Coaches)	0	66,840	

The rear end collision between Train No. 13174 DN (Kanchenjunga Express) and DN GFCJ Container took place on 17.06.2024 at 08.50 Hrs in Rangapani - Chatterhat Block section of Katihar Division of Northeast Frontier Railway. This is a Broad Gauge, Double Line, Electrified section provided with Automatic Signalling.

This accident has been inquired into by the statutory body, Chief Commissioner of Railway Safety (CCRS) under Ministry of Civil Aviation. According to this Inquiry Report, the accident has been classified under the category of “error in train working”.

The details of the protocols for automatic signals are provisioned in General & Subsidiary Rules (G&SR) of Indian Railways. It contains the general provisions of Automatic Signaling, working of Automatic Signaling, regular maintenance of signaling equipment, adherence to safety protocols, and efficient handling of emergency situations to avoid delays and ensure smooth train operations.

Occurrence and filling up of vacancies is a continuous process on Indian Railways considering its size, spatial distribution and criticality of operation. Adequate and suitable manpower is provided to cater to the regular operations, changes in technology, mechanizations and innovative practices. The vacancies are filled up primarily by placement of indents by Railways with Recruitment agencies as per operational and technological requirements.

After easing of restrictions imposed on account of COVID 19, two major examinations involving more than 2.37 crore candidates have been conducted successfully.

Exam	Candidates	Cities	Centres	Days	Shifts
L2 - L6	1.26 cr	211	726	68	133
L-1	1.1 cr	191	551	33	99

Based on these exams, 1,30,581 candidates have been recruited in railways.

The RRB examinations are quite technical in nature entailing large scale mobilization of men and resources and training of manpower. Railway overcame all these challenges and successfully conducted the recruitment in a transparent manner following all laid down guidelines. No instance of paper leakage or similar malpractice has occurred during the entire process.

Recruitment done in Indian Railways during 2004-2014 vis-a-vis during 2014 – 2024 is given as under.

Period	Recruitments
2004-14	4.11 lakh
2014-24	5.02 lakh

Further, as system improvement, the Ministry of Railways has introduced a system of publishing annual calendar from 2024 for recruitment to various categories of Group ‘C’ posts. The introduction of annual calendar will benefit the aspirants in the following manner:

- **More opportunities for candidates;**
- **Opportunities to those becoming eligible every year;**
- **Certainty of exams;**
- **Faster Recruitment process, Training and Appointments**

Accordingly, eight Centralized Employment Notifications (CENs) for 58,642 vacancies have been notified during January to October 2024 for filling up of posts of Assistant Loco Pilots, Technicians, Sub-Inspectors & Constables in Railway Protection Force (RPF), Junior Engineers/Depot Material Superintendents/Chemical & Metallurgical Assistants, Paramedical Categories, Non-Technical Popular Categories (Graduates) & Non-Technical Popular Categories (Under-Graduates). The Computer Based Test has started from 25.11.2024.
