

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS**

**LOK SABHA
UNSTARRED QUESTION NO. 3302
TO BE ANSWERED ON 09.08.2023**

SAFETY MEASURES IN RAILWAYS

**3302. SHRI MANOJ KOTAK:
SHRIMATI RAKSHA NIKHIL KHADSE:**

Will the Minister of RAILWAYS be pleased to state:

- (a) whether safety audits at all levels are being conducted in Railways with a view to prevent accidents;**
- (b) if so, the details thereof;**
- (c) whether any road-map and comprehensive safety plan is prepared to improve safety technique, inspection, monitoring and periodical review of safety measures;**
- (d) if so, the details thereof; and**
- (e) whether hi-end technology are being used to ensure safety of the train/passengers, if so, the details thereof?**

ANSWER

**MINISTER OF RAILWAYS, COMMUNICATIONS AND
ELECTRONICS & INFORMATION TECHNOLOGY**

(SHRI ASHWINI VAISHNAW)

(a) to (e): A Statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (e) OF UNSTARRED QUESTION NO. 3302 BY SHRI MANOJ KOTAK AND SHRIMATI RAKSHA NIKHIL KHADSE TO BE ANSWERED IN LOK SABHA ON 09.08.2023 REGARDING SAFETY MEASURES IN RAILWAYS.

(a) & (b): Two types of Safety Audits are being conducted by Railways regularly, viz.:

(i) Bi-monthly safety audit by the individual Zonal Railway of its own divisions; and

(ii) An inter- zonal railway safety audit conducted twice a year, in blocks of January to June and July to December, by a multi-disciplinary team of Railway officers.

The basic purpose of such audits is to identify weak areas in asset maintenance, safety procedures & systemic defects and to provide ways and means to prevent accidents.

(c) to (e): The safety measures, including those using hi-end technology, taken to avoid train accidents include the following:

- 1. Rashtriya Rail Sanraksha Kosh (RRSK) has been introduced in 2017-18 for replacement/renewal/upgradation of critical safety assets, with a corpus of Rs. 1 lakh crore for five years. From 2017-18 till 2021-22 a gross expenditure of Rs. 1.08 lakh crore was incurred on RRSK works.**
- 2. Electrical/Electronic Interlocking Systems with centralized operation of points and signals have been provided at 6427 stations upto 31.05.2023 to eliminate accident due to human failure.**
- 3. Interlocking of Level Crossing (LC) Gates has been provided at 11093 level Crossing Gates up to 31.05.2023 for enhancing safety at LC gates.**
- 4. Complete Track Circuiting of stations to enhance safety for verification of track occupancy by electrical means has been provided at 6377 stations upto 31.05.2023.**
- 5. 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.**
- 6. System of disconnection and reconnection for S&T equipment as per protocol has been re-emphasized.**

- 7. All locomotives are equipped with Vigilance Control Devices (VCD) to ensure alertness of Loco Pilots.**
- 8. Retro-reflective sigma boards are provided on the mast which is located two OHE masts prior to the signals in electrified territories to warn the crew about the signal ahead when visibility is low due to foggy weather.**
- 9. 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.**
- 10. 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.**
- 11. Mechanisation of track laying activity through use of track machines like PQRS, TRT, T-28 etc to reduce human errors.**
- 12. Maximizing supply of 130m/260m long rail panels for increasing progress of rail renewal and avoiding welding of joints, thereby ensuring safety.**
- 13. Laying of longer rails, minimizing the use of Alumino Thermic Welding and adoption of better welding technology for rails i.e. Flash Butt Welding.**
- 14. Monitoring of track geometry by OMS (Oscillation Monitoring System) and TRC (Track Recording Cars).**
- 15. Patrolling of railway tracks to look out for weld/rail fractures.**
- 16. The use of Thick Web Switches and Weldable CMS Crossing in turnout renewal works.**
- 17. Inspections at regular intervals are carried out to monitor and educate staff for observance of safe practices.**
- 18. 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.**
- 19. Detailed instructions on issues related with safety of track e.g. integrated block, corridor block, worksite safety, monsoon precautions etc. have been issued.**
- 20. Preventive maintenance of railway assets (Coaches & Wagons) is undertaken to ensure safe train operations and to keep a check on rail accidents across the country.**

- 21. Replacement of conventional ICF design coaches with LHB design coaches is being done.**
- 22. All unmanned level crossings (UMLCs) on Broad Gauge (BG) route have been eliminated by January 2019.**
- 23. 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.**
- 24. Indian Railways has displayed statutory “Fire Notices” for widespread passenger information in all coaches. Fire posters are provided in every coach so as to inform 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.**
- 25. Production Units are providing fire detection and suppression system in newly manufactured power cars and pantry cars and 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.**
- 26. Regular counselling and training of staff is undertaken.**
- 27. Concept of Rolling Block system has been introduced wherein work of maintenance/repair/replacement is planned for 2 weeks in advance on rolling basis and executed as per plan.**
- 28. Axle counters for automatic clearance of Block Section and BPAC (Block Proving Axle Counter) are provided to ensure complete arrival of train without manual intervention. These systems have been provided on 6397 Block Sections up to 31.05.2023.**
- 29. Indigenously developed automatic train protection system “KAVACH” has been adopted as an aid to the loco pilot in train running within specified speed limits, as also during inclement weather.**

In recent times, there has been an increasing focus on works related to safety, as summarised below:

SN	Item	Unit	During FY 2004-05 to 2013-14		During FY 2014-15 to 2022-23		Comparison of the period 2014-23 with the
			Cumulative for 10 years	Average Per Year	Cumulative for 9 years	Average Per Year	

							period 2004- 14
A.	Track Maintenance						
1.	Expenditure on Track Renewal	Rs. In Cr.	47,018	4,702	91,809	10,201	2.2 Times
2.	Rail Renewal Primary	TKM	32,260	3,226	37,284	4,143	1.3 Times
3.	Use of high quality rails (60 Kg)	KM	57,450	5,745	1,23,717	13,746	2.4 Times
4.	Longer Rail Panels (260m)	KM	9,917	992	68,233	7,581	7.7 Times
5.	USFD (Ultra Sonic Flaw detection) Testing of Rails	TKM	20,19,630	2,01,963	26,52,291	2,94,699	1.5 Times
6.	USFD (Ultra Sonic Flaw detection) Testing of Welds	Nos.	79,43,940	7,94,394	1,73,06,046	19,22,894	2.4 Times
7.	Track KM added	TKM	14,985	1,499	25,871	2,875	1.9 Times
8.	Weld failures	Nos.	In 2013-14 : 3699		In 2022-23: 724		80% Reducti on
9.	Rail fractures	Nos.	In 2013-14 : 2548		In 2022-23: 531		79% Reducti on
10	Thick Web Switches	Nos.	Nil	Nil	15,146	1,683	
11	Track Machines	Nos.	As on 31.03.14 = 748		As on 31.03.23 = 1548		2.1 Times
B.	Level Crossing Gate Elimination						
1.	Elimination of Unmanned Level Crossing Gates	Nos.	As on 31.03.2014: 8948		As on 31.03.2023: Nil (All eliminated by 31.01.19)		100% Reducti on

2.	Elimination of Manned Level Crossing Gates	Nos.	1,137	114	6,291	699	6.2 Times
3.	Construction of Road over Bridges (i.e. Flyovers)/ Road under Bridges (i.e. Underpasses)	Nos.	4,148	415	10,867	1,207	2.9 Times
4.	Expenditure on LC Elimination	Rs. In Cr.	5,726	573	30,602	3,400	5.9 Times
C.	Bridge Rehabilitation						
1.	Expenditure on Bridge Rehabilitation	Rs. In Cr.	3,919	392	6,380	709	1.8 Times
D.	Signalling Works						
1.	Electronic Interlocking	Stations	837	84	2,521	280	3.3 Times
2.	Automatic Block Signaling	Km	1,486	148.6	1,915	212.8	1.4 Times
3.	Fog Pass Safety Devices	Nos.	As on 31.03.14 : 90		As on 31.03.23 : 19,742		219 Times
E	Rolling Stock						
1.	Manufacture of LHB Coaches	No.	2,337	234	31,956	3,551	15.2 Times
2.	Provision of Fire and Smoke Detection System in coaches	Nos. of Coaches	0	0	12,711	1,412	
3.	Provision of Fire Detection and Suppression System in Pantry and Power Cars	Nos. of Coaches	0	0	2,635	293	

4.	Provision of Fire Extinguishers in Non –AC coaches	Nos. of Coaches	0	0	39,819	4,424	
F.	Gross Budgetary Support for Railway Investment (GBS FY 23-24 : Rs 2.4 Lakhs Cr.)	Rs. In Cr.	1,56,739	15,674	8,25,967 (Incl. of BE 23-24)	82,597	5.3 Times
G.	Expenditure on safety related works	Rs. In Cr.	70,273	7,027	1,78,012 (Incl. of BE 23-24)	17,801	2.5 Times

Regular safety reviews are held at all the levels of Railways.

Security Measures:-

The following steps are being taken by Railways for security and safety of passengers in trains:-

- 1. On vulnerable and identified routes/sections, trains are escorted daily by Railway Protection Force in addition to trains escorted by Government Railway Police of different States.**
- 2. For immediate assistance, passengers can lodge complaint on Rail Madad Portal directly or through Helpline Number 139 (integrated with National Emergency No. 112).**
- 3. Railway are in regular touch with passengers through various social media platforms viz. twitter, facebook, koo etc. to address their security concerns.**
- 4. Frequent announcements are made through the Public Address System to educate passengers to take precautions against theft, snatching, drugging etc.**
- 5. Surveillance is kept through CCTV cameras provided in 7264 coaches in trains and 866 Railway stations for enhanced security of passengers.**
- 6. Under 'Meri Saheli' initiative, focused attention has been provided for safety and security of lady passengers travelling alone by long distance trains for their entire journey i.e. from originating station to destination station.**

- 7. Zonal railways have been instructed for deployment of proper combined strength of male & female RPF/RPSF personnel in train escort parties, to the extent possible.**
- 8. State Level Security Committee of Railways (SLSCR) have been constituted for all State/Union Territories under the Chairmanship of respective Director General of Police of States/Union Territories for regular monitoring and review of security arrangements of the Railways.**
- 9. In addition to the above, 266 Baggage Scanners, 77 Under Vehicle Scanning System (UVSS) and 292 Bomb Detection & Disposal items, 1041 Door Frame Metal Detectors (DFMD), 5981 Hand Held Metal Detectors (HHMD) and 1255 Body worn camera have also been provided to ensure safety and security of passengers.**
