

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

RAJYA SABHA
STARRED QUESTION NO. 103
ANSWERED ON 28.07.2023

BALASORE TRAIN ACCIDENT

*103. SHRI M. SHANMUGAM:

Will the Minister of RAILWAYS be pleased to state:

- (a) whether any preliminary report is available regarding the cause of Balasore multi-train accident in which more than 290 passengers died;
- (b) if so, the details thereof;
- (c) whether the accident took place due to poor maintenance of track and signalling system or due to shortage of manpower in the field and deploying of untrained contract workers for the highly skilled job;
- (d) whether any internal study has been made to improve the overall system and to avoid such type of horrific accidents in future; and
- (e) 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 STARRED QUESTION NO.103 BY SHRI M. SHANMUGAM ANSWERED IN RAJYA SABHA ON 28.07.2023 REGARDING BALASORE TRAIN ACCIDENT.

(a) to (c): The Commissioner of Railway Safety has submitted its Inquiry Report and cause of the accident has been established as:

The rear-collision was due to the lapses in the signalling- circuit-alteration carried out at the North Signal Goomty (of the station) in the past, and during the execution of the signalling work related to replacement of Electric Lifting Barrier for level crossing gate no. 94 at the Station. These lapses resulted in wrong signalling to the Train No. 12841 wherein the UP Home Signal indicated Green aspect for run-through movement on the UP main line of the station, but the crossover connecting the UP main line to the UP loop line (crossover 17 A/B) was set to the UP loop line; the wrong signalling resulted in the Train No. 12841 traversing on the UP loop line, and eventual rear-collision with the Goods train (No. N/DDIP) standing there.

(d) &(e): Safety performance is regularly analysed and Indian Railways have taken the following measures over the years to improve safety of train operations:

1. Rashtriya Rail Sanraksha Kosh (RRSK) has been introduced in 2017-18 for replacement/renewal/upgradation of critical safety assets, with a corpus of ₹1 lakh crore for five years. From 2017-18 till 2021-22, a Gross expenditure of ₹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, 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 introduced wherein work of maintenance/repair/replacement is planned for 2 weeks in advance on rolling basis and executed as per plan.

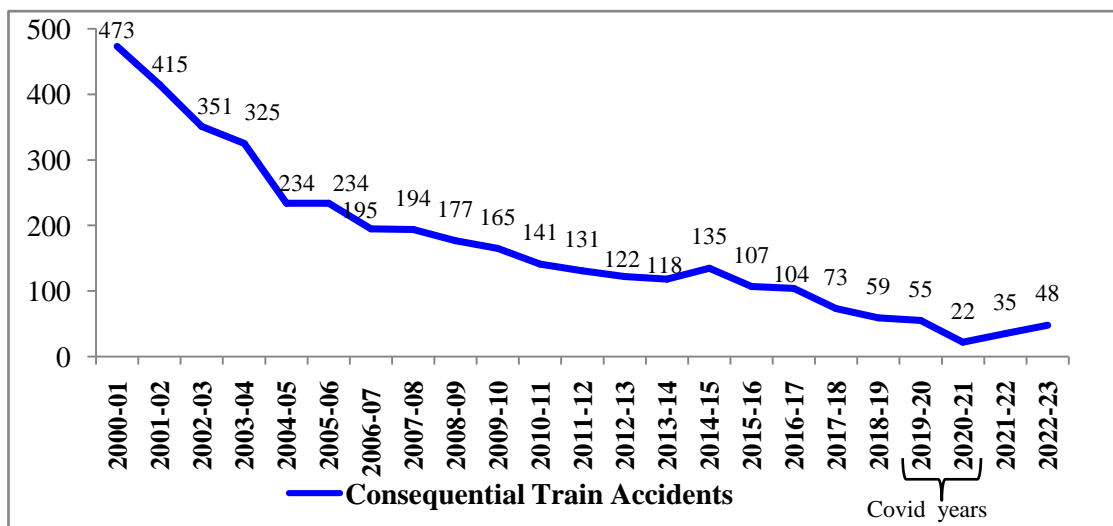
In recent times, there has been an increasing focus on works related to safety, as summarised below:

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 period 2004-14
			Cumulative for 10 years	Average Per Year	Cumulative for 9 years	Average Per Year	
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% Reduction
9.	Rail fractures	Nos.	In 2013-14 : 2548		In 2022-23: 531		79% Reduction
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% Reduction
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	Km	1,486	148.6	1,915	212.8	1.4 Times

	Signaling						
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

Owing to these steps, there has been a significant improvement in the safety performance of Indian Railways over the years, as shown below:

The trend of consequential train accidents from 2000-01 to 2022-23:



It may be noted from the graph above, that there is a steep decline in the number of consequential train accidents from 473 in 2000-01 to 48 in 2022-23.

The average number of consequential train accidents during the period, 2004-14 was 171 per annum, while the average number of consequential train accidents during the period, 2014-23 has declined to 71 per annum.
