

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

RAJYA SABHA
STARRED QUESTION NO. 5
ANSWERED ON 02.02.2024

INSTALLATION OF KAVACH SAFETY SYSTEM

*5. SHRI MOHAMMED NADIMUL HAQUE:

Will the Minister of RAILWAYS be pleased to state:

- (a) whether Government has achieved its target of installing 637 km railways lines with Kavach safety system till October 31, 2023 and the details of new lines commissioned with Kavach system in 2023;
- (b) the total number of railways accidents in the last three years; and
- (c) whether derailments due to improper maintenance are a major cause of railway accidents, if so, the steps taken by Government to fully mechanize track maintenance activities?

ANSWER

MINISTER OF RAILWAYS, COMMUNICATIONS AND
ELECTRONICS & INFORMATION TECHNOLOGY

(SHRI ASHWINI VAISHNAW)

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

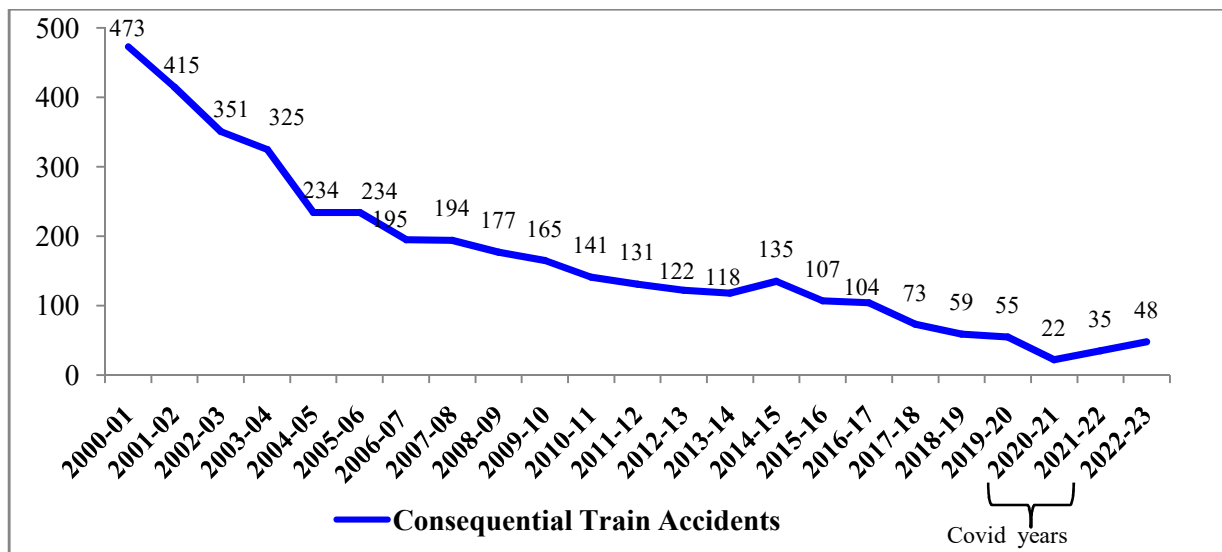
STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (c) OF STARRED QUESTION NO. 5 BY SHRI MOHAMMED NADIMUL HAQUE ANSWERED IN RAJYA SABHA ON 02.02.2024 REGARDING INSTALLATION OF KAVACH SAFETY SYSTEM.

(a) Presently, Kavach has so far been deployed on 1465 Route Km and 139 Locomotives including (Electric Multiple Unit rakes) on South Central Railway.

Kavach tenders have been awarded for Delhi-Mumbai and Delhi-Howrah corridors (approximately 3000 Route Km) and work is in progress on these routes. The progress of main items related to Kavach is as under:

- (i) Laying of Optical Fibre Cable : 3040 Km
- (ii) Installation of Telecom Towers : 269 Nos.
- (iii) Provision of equipment at Stations : 186 Nos.
- (iv) Provision of equipment in Loco : 170 Locos
- (v) Installation of Track side equipments : 827 Route Km.

(b) During the last 03 years i.e. from 2020-21 to 2022-23, total 105 consequential train accidents took place over Indian Railways. There has been a significant improvement in the safety performance of Indian Railways over the years, as shown below.



(c) The major causes of Consequential Train Accidents broadly include asset failure, environmental factors, human errors etc. Indian Railway have taken a number of steps to enhance the level of safety, some of which are given below:

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. In 2022-23, the Government extended the currency of RRSK for another period of five years with Gross Budgetary Support (GBS) of Rs. 45,000 crores.

2. 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.
3. Mechanisation of track laying activity through use of track machines like PQRS, TRT, T-28 etc to reduce human errors.
4. Maximizing supply of 130m/260m long rail panels for increasing progress of rail renewal and avoiding welding of joints, thereby ensuring safety.
5. Laying of longer rails, minimizing the use of Alumino Thermic Welding and adoption of better welding technology for rails i.e. Flash Butt Welding.
6. Monitoring of track geometry by OMS (Oscillation Monitoring System) and TRC (Track Recording Cars).
7. Patrolling of railway tracks to look out for weld/rail fractures.
8. The use of Thick Web Switches and Weldable Cast Manganese Steel (CMS) Crossing in turnout renewal works.
9. Inspections at regular intervals are carried out to monitor and educate staff for observance of safe practices.
10. 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.
11. Detailed instructions on issues related with safety of Track e.g. integrated block, corridor block, worksite safety, monsoon precautions etc. have been issued.
12. 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.
13. Replacement of conventional Integral Coach Factory (ICF) design coaches with Linke Hofmann Busch (LHB) design coaches is being done.
14. All unmanned level crossings (UMLCs) on Broad Gauge (BG) route have been eliminated by January 2019.
15. 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.

16. 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.
17. 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.
18. Electrical/Electronic Interlocking Systems with centralized operation of points and signals have been provided at 6521 stations upto 31.12.2023.
19. Interlocking of Level Crossing (LC) Gates has been provided at 11143 level Crossing Gates upto 31.12.2023.
20. Complete Track Circuiting of stations to enhance safety for verification of track occupancy by electrical means has been provided at 6558 stations upto 31.12.2023.
21. Locomotives are equipped with Vigilance Control Devices (VCD) to ensure alertness of Loco Pilots.
22. Retro-reflective sigma boards are provided on the mast which is located between 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.
23. A Global Positioning System (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.
24. Concept of Rolling Block introduced in Indian Railways (Open Lines) General Rules vide Gazette notification dtd. 30.11.2023, wherein work of maintenance/repair/replacement is planned in advance on rolling basis and executed as per plan.
