

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

RAJYA SABHA
UNSTARRED QUESTION NO. 1587
ANSWERED ON 15.12.2023

SAFETY IN RAILWAYS

1587 MS. KAVITA PATIDAR:

Will the Minister of RAILWAYS be pleased to state:

- (a) the details of specific initiatives or programs implemented to improve safety standards across the Railways network; and
- (b) the manner in which Railways has implemented and utilized advanced technologies such as Train Protection and Warning System (TPWS) and Automatic Train Protection System (ATP) to enhance safety?

ANSWER

MINISTER OF RAILWAYS, COMMUNICATIONS AND
ELECTRONICS & INFORMATION TECHNOLOGY

(SHRI ASHWINI VAISHNAW)

(a) & (b): A Statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) AND (b) OF UNSTARRED QUESTION NO. 1587 BY MS. KAVITA PATIDAR ANSWERED IN RAJYA SABHA ON 15.12.2023 REGARDING SAFETY IN RAILWAYS

(a) & (b): The following measures have been taken by the Government to improve safety standards across the Railways network:

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, Gross expenditure of Rs. 1.08 lakh crore was incurred on RRSK works. In 2022-23, the Govt. extended the currency of RRSK for another period of five years with Gross Budgetary Support (GBS) of Rs. 45,000 crores.
2. Electrical/Electronic Interlocking Systems with centralized operation of points and signals have been provided at 6498 stations upto 31.10.2023 to eliminate accident due to human failure.
3. Interlocking of Level Crossing (LC) Gates has been provided at 11137 level Crossing Gates up to 31.10.2023 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 6548 stations upto 31.10.2023.
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 in Indian Railways (Open Lines) General Rules vide Gazette notification dated 30.11.2023, wherein work of maintenance/repair/replacement is planned for 52 weeks in advance on rolling basis and executed as per plan.

Indian Railways has implemented an advanced technology system, “Kavach”, as an Automatic Train Protection (ATP) system, which has the following features :

- i. Kavach is an indigenously developed Automatic Train Protection (ATP) system. It is a highly technology intensive system, which requires safety certification of the highest order.
- ii. Kavach aids the loco pilot in train running within specified speed limits by automatic application of brakes, in case the Loco Pilot fails to do so, and also helps the train to run safely during inclement weather.
- iii. Kavach has so far been deployed on 1465 Route km and 139 locomotives (including Electric Multiple Unit rakes) on South Central Railway.
- iv. Kavach tenders have been awarded for Delhi – Mumbai & Delhi – Howrah corridors (approximately 3000 Route km).
