Ministry of Railways

Indian Railways Triples Safety Expenditure Over a Decade from ₹39,200 Crore in 2013-14 to ₹1,17,693 Crore in 2025-26 Prioritising Passenger Safety Amid Modernisation

Trackside Kavach Implementation Taken Up on 23,360 Rkm Covering All Golden Quadrilateral, Golden Diagonal, High Density Network and Identified Sections of Indian Railways

12,300 Coaches and 460 Locomotives Equipped with CCTV Cameras to Enhance Passenger Safety and Security Across the Network

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Safety is accorded the highest priority on Indian Railways. As a consequence of various safety measures taken over the years, there has been a steep decline in the number of accidents.

On Indian Railways, the expenditure on Safety related activities has increased over the years as under:-

Expenditure/Budget on Safety related activities (Rs. in Cr.)				
2013-14	2022-23	2023-24	2024-25	2025-26
39,200	87,336	1,01,662	1,14,022	1,17,693

Implementation of Kavach

i. Kavach is an indigenously developed Automatic Train Protection (ATP) system. Kavach is a highly technology intensive system, which requires safety certification of highest order (SIL-4).

ii. Kavach aids the Loco Pilot in running of trains within specified speed limits by automatic application of brakes in case Loco Pilot fails to do so and also helps the trains to run safely during inclement weather.

iii. The first field trials on the passenger trains were started in February 2016. Based on the experience gained and Independent Safety Assessment of the system by Independent Safety Assessor (ISA), three firms were approved in 2018-19, for supply of Kavach Ver 3.2.

iv. Kavach was adopted as National ATP system in July, 2020.

v. Implementation of Kavach System involves following Key Activities:

a. Installation of Station Kavach at each and every station, block section.
b. Installation of RFID Tags throughout the track length.
c. Installation of telecom Towers throughout the section.
d. Laying of Optical Fibre Cable along the track.
e. Provision of Loco Kavach on each and every Locomotive running on Indian Railways.

vi. Based on deployment of Kavach version 3.2 on 1465 RKm on South Central Railway and experience gained, further improvements were made. Finally, Kavach specification version 4.0 was approved by RDSO on 16.07.2024.

vii. Kavach version 4.0 covers all the major features required for the diverse railway network. This is a significant milestone in safety for Indian Railways. Within a short period, IR has developed, tested and started deploying Automatic Train Protection System.

viii. Major improvement in Version 4.0 includes increased Location Accuracy, Improved Information of Signal Aspects in bigger yards, Station to Station Kavach interface on OFC and Direct Interface to existing Electronic Interlocking System. With these improvements, Kavach Ver.4.0. is planned for large scale deployment over Indian Railways.

ix. After extensive and elaborate trials, Kavach Version 4.0 has been successfully commissioned on 1297 Route Kilometres, covering the highdensity Delhi - Mumbai and Delhi – Howrah routes. On the Delhi – Mumbai route Kavach ver 4.0 has been commissioned on Junction cabin – Palwal – Mathura – Nagda section (667 Rkm) & Ahmedabad – Vadodara – Virar section (432 Rkm) and on the Delhi – Howrah route on Gaya – Saramatanr (93 Rkm) and Bardhaman - Howrah section (105 Rkm).

x. Further, track side Kavach implementation work has been taken up on **23,360 RKM** covering all GQ,GD,HDN and identified sections of Indian Railways.

xi. Progress of key items of Kavach on High density routes including Delhi– Mumbai & Delhi– Howrah corridors are as under:

S N	Item	Progress
i	Laying of Optical Fibre Cable	8570 Km
ii	Installation of Telecom Towers	938 nos
iii	Station Data Centre	767 station
iv	Installation of Track side equipment	5672 RKm

v	Provision of Kavach in Loco	4154

xii. Tender has been finalised for equipping 6,300 Electric Locomotives with Kavach version 4.0 and another tender for equipping 2,679 Diesel Locomotives is under finalisation.

xiii. Specialized training programmes on Kavach are being conducted at centralized training institutes of Indian Railways to impart training to all concerned officials. By now more than 48,000 technicians, operators and engineers have been trained on Kavach technology. This includes about 45,000 Loco Pilots & Assistant Loco Pilots. Courses have been designed in collaboration with IRISET.

xiv. The cost for provision of Track Side including Station equipment of Kavach is approximately Rs. 50 Lakhs/Km and cost for provision of Kavach equipment on locomotives is approximately Rs. 80 Lakh/Loco.

xv. The funds utilized on Kavach works so far up to Dec'25 is Rs. 2,573.36 Crores. The allocation of funds during the year 2025-26 is Rs. 1673.19 Crores. Requisite funds are made available as per the progress of works.

Installation of CCTV Cameras in Coaches and Locomotives

Indian Railways has taken up the work of installation of CCTV cameras in coaches and locomotives with the purpose of improving safety and security of the passengers. The provision of CCTV cameras is expected to deter miscreant activities, vandalism, thefts and also assist in investigation of the incidents. Accordingly, Zonal Railways and Production Units have initiated action for procurement and installation of CCTV cameras in coaches and locomotives.

Till date, approximately 12,300 coaches (including all operational rakes of Vande Bharat & Amrit Bharat trains) & 460 locomotives, plying over IR’s network, are equipped with CCTV cameras.

This information was provided by the Union Minister for Railways, Information & Broadcasting and Electronics & Information Technology, Shri Ashwini Vaishnaw, in a reply to questions in Rajya Sabha today.

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