

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS**

**LOK SABHA
UNSTARRED QUESTION NO. 356
TO BE ANSWERED ON 24.07.2024**

IMPLEMENTATION OF KAVACH ON RAILWAY TRACKS

356. SHRI PRADYUT BORDOLOI:

Will the Minister of RAILWAYS be pleased to state:

- (a) the deadline for the implementation of the KAVACH system on railway tracks;**
- (b) whether there have been any delays in installation and if so, the reasons for the delay;**
- (c) any changes in ticket prices anticipated after the installation of the KAVACH system;**
- (d) the details of special training programme initiated for railway personnel to familiarize them with the new system, including specifics, if available, if not, the reasons for not conducting such programme; and**
- (e) whether the Government has conducted research on running hours, rest intervals between shifts and proper screening of locomotive drivers, if so, the details thereof and if not, the reasons therefor?**

ANSWER

**MINISTER OF RAILWAYS, INFORMATION & BROADCASTING 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. 356 BY SHRI PRADYUT BORDOLOI TO BE ANSWERED IN LOK SABHA ON 24.07.2024 REGARDING IMPLEMENTATION OF KAVACH ON RAILWAY TRACKS

(a) to (e): Kavach is an indigenously developed Automatic Train Protection (ATP) system. Kavach is a highly technology intensive system, which requires safety certification of highest order.

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

Implementation of Kavach involves execution of many activities, such as:

- a. Installation of Station Kavach at each and every station.**
- 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.**

Kavach has so far been deployed on 1465 Route km and 144 locomotives on South Central Railway.

Presently, the progress of main items related to Kavach on Delhi–Mumbai & Delhi– Howrah corridors (approximately 3000 Route km) is as under:

- (i) Laying of Optical Fibre Cable: 4275 Km**
- (ii) Installation of Telecom Towers: 364 Nos.**
- (iii) Provision of equipment at Stations: 285 Nos.**
- (iv) Provision of equipment in Loco: 319 Locos**

(v) Installation of Track side equipments: 1384 RKm.

Indian Railways has also prepared Detailed Project Report (DPR) and Detailed Estimate on another 6000 RKm.

On 16.07.2024, Kavach 4.0 specification has been approved by RDSO. This version 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.

Kavach is provided progressively in phased manner.

Special training programmes on Kavach are conducted at centralised training institute and also in Zonal Railways to familiarize Officers and Staff with new system.

KAVACH system is not related to ticket prices.

Railway servants (Hours of Work & Period of Rest) Rules 2005 formulated under the Railways Act, 1989, lays down provisions relating to classification of the railway servants and also for their duty hours and periods of rest which are followed in preparation of duty rosters. Duty hours, numbers of night duties, facility for out-station rest, number and hours of rest at headquarter are well defined and monitored closely.

Several steps have been taken for improvement of working condition of loco running crew and initiatives taken for improvement in safety of train operation which are as follows:

(1) Improvement in locomotives for the comfort and for easing out duties of loco running staff :

Considering the tough duties of loco running staff, number of steps have been initiated and executed which are as under:

- a. Production of three phase locos, having ergonomic crew friendly design features like better seat and drivers desk for better comfort of loco and assistance loco pilot, has been increased in past 10 years i.e. since 2014, 7,286 three phase locos have been manufactured as against 719 prior to 2014.**
- b. All new locos manufactured are provided with air-conditioned cabs since 2017-18. So far more than 7,000 locos have been provided with air conditioners.**
- c. All new locos being manufactured are provided with Vigilance Control Devices (VCD) as a technological aid to monitor and warn Loco Pilots in case of loss of alertness while driving. Since 2014, VCD has been provided in more than 12,000 (10,521 Electric +1,873 Diesel) locos.**
- d. A portable GPS based Fog safe Device (FSD) is being provided to Loco Pilots as a technical aid for displaying and announcing the name and distance of approaching signals and important landmarks. Since 2014, 21,742 nos. FSDs have been provided in IR.**
- e. Retro-reflective strip in sigma shape have been provided two masts prior to stop signals on all the Zonal Railways for easy identification of stop signal during foggy weather as an aid and for reducing stress on loco pilots.**

(2) Improvement in quality of rest of running staff at Running Rooms :

A number of steps have been taken in the last 10 years to improve the quality of rest of the running staff which are as under :

- a. All 558 running rooms have been air-conditioned.**
- b. Running staff are also provided with Yoga and meditation room, reading room with newspaper and magazines for relaxing in accordance with their requirements.**
- c. Provision for good quality subsidized meal in running rooms.**
- d. Availability of RO water filters in running rooms.**
- e. Separate room for female crew.**
- f. Loco pilots have to keep a continuous watch on track and signals involving long hours of standing in cab. Based on CAMTECH report, facilities like foot massager etc. are made available in running rooms for giving loco pilots proper rest.**

(3) Other technological aids for improving safety in train operation:

- a. Simulator based training for improving the driving skills and the reaction time of Loco Pilots is being emphasized and simulator training facility is increased significantly.**
- b. Mobile Application named 'Chalak Dal' has been developed for the facilitation of crew. The App has been modified in 2023, to enable crew to access all his details related to running duties, sign on / sign off, loco trouble shooting directory and other documents required during train operation which otherwise were required to be carried in hard copy.**

(4) Other measures for improving safety in train operation :

- a. Various safety drives & special counseling programs are regularly organized for checking the alertness and safety awareness among the running staff. Special safety seminars & meetings are also organized for interaction with family members of running staff for educating on role of quality rest in life of running staff.**
- b. Special drives are launched regularly to counsel running staff to boost their morale and confidence.**
