

**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS**

**LOK SABHA  
UNSTARRED QUESTION NO. 2166  
TO BE ANSWERED ON 02.08.2023**

**IMPLEMENTATION OF TRAIN COLLISION AVOIDANCE SYSTEM**

**2166. DR. KALANIDHI VEERASWAMY:**

**Will the Minister of RAILWAYS be pleased to state:**

- (a) whether the Government has recognised the need for proper implementation of the Train Collision Avoidance system in locomotives to prevent accidents;**
- (b) if so, the elaborate measures taken to implement the technology and status of its development in the last four years; and**
- (c) the reasons for the increasing number of train accidents in the recent times?**

**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.**

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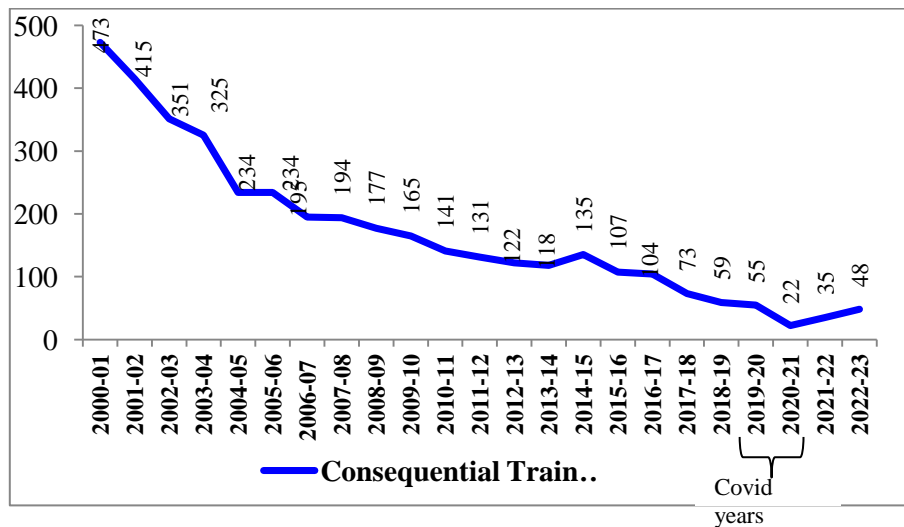
**STATEMENT REFERED TO IN REPLY TO PARTS (a) TO (c) OF UNSTARRED QUESTION NO. 2166 BY DR. KALANIDHI VEERASWAMY TO BE ANSWERED IN LOK SABHA ON 02.08.2023 REGARDING IMPLEMENTATION OF TRAIN COLLISION AVOIDANCE SYSTEM**

**(a) and (b) Regarding installation and safety features of Kavach, the details are:**

- 1. Kavach is indigenously developed Automatic Train Protection (ATP) system. Kavach is a highly technology intensive system, which requires safety certification of highest order.**
- 2. 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 help the train safely run during inclement weather.**
- 3. The first field trials on the passenger trains were started in February 2016. Based on the experience so gained and Independent Safety Assessment of the system by a 3rd party (Independent Safety Assessor: ISA) three firms were approved in 2018-19, for supply of Kavach.**
- 4. Subsequently Kavach was adopted as a National ATP system in July 2020.**
- 5. Kavach has so far been deployed on 1465 Route km and 121 locomotives (including Electric Multiple Unit rakes) on South Central Railway.**
- 6. Kavach tenders have been awarded for Delhi – Mumbai & Delhi – Howrah corridors (approximately 3000 Route km) and work is in progress on these routes.**
- 7. Indian Railways is preparing Detailed Project Report (DPR) and detailed estimate for another 6000 RKm.**

8. **The amount spent so far on Kavach implementation is ₹ 351.91 Crores. The Cost for provision of Track side including Station equipment of Kavach is approximately ₹ 50 Lakhs/Km and cost for provision of Kavach equipment on loco is approximately ₹ 70 lakh/ loco.**
9. **Presently there are three Indian OEMs who are approved for Kavach. Efforts are being made to develop more vendors to enhance the capacity and scale up the implementation of Kavach.**

**(c) The details of number of consequential train accidents from 2000-01 to 2022-23 are given below:-**



**As is evident from the graph above, there is a steep decline in the number of consequential train accidents from 473 in 2000-01 to 48 in 2022-23.**

**It may be noted that 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 declined to 71 per annum.**