

GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS

**RAJYA SABHA**  
**UNSTARRED QUESTION NO.937**  
**ANSWERED ON 09.02.2024**

**MODERNIZATION AND UPGRADATION OF BASIC INFRASTRUCTURE, ROLLING STOCK AND SIGNALING SYSTEMS**

937 # DR. SUMER SINGH SOLANKI:

Will the Minister of RAILWAYS be pleased to state:

- (a) the steps being taken to modernize and upgrade the basic infrastructure, rolling stock and signaling systems of Indian Railways;
- (b) the manner in which Indian Railways is using Dedicated Freight Corridors (DFCs) to increase freight carrying capacity and improve overall network efficiency;
- (c) the manner in which Gati Shakti Multi-Modal Cargo Terminals contribute to increase the modal share of railways in the Cargo sector; and
- (d) key statistics related to freight loading and revenue for the last three years?

**ANSWER**

MINISTER OF RAILWAYS, COMMUNICATIONS AND  
ELECTRONICS & INFORMATION TECHNOLOGY  
(SHRI ASHWINI VAISHNAW)

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

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**STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (d) OF UNSTARRED QUESTION NO. 937 BY DR. SUMER SINGH SOLANKI ANSWERED IN RAJYA SABHA ON 09.02.2024 REGARDING MODERNIZATION AND UPGRADATION OF BASIC INFRASTRUCTURE, ROLLING STOCK AND SIGNALING SYSTEMS**

(a): Modernisation and upgradation of railway infrastructure is a need based and ongoing process subject to operational requirement, technical feasibility, commercial viability, resource availability, etc. A number of works have been taken up to modernize and upgrade railway infrastructure including rolling stock and signaling system. Some of them are as under:

1. Rashtriya Rail Sanraksha Kosh (RRSK) has been introduced in 2017-18, for replacement/renewal/upgradation of critical safety assets, with a corpus of ₹1 lakh crore for five years. From 2017-18 till 2021-22, a gross expenditure of ₹ 1.08 lakh crore was incurred on RRSK works. Currency of the Fund has been extended for another five year term beyond 2021-22 with GBS support of ₹ 45,000 Cr. The amount spent from this fund during the 2022-23 is ₹ 13894.84 Cr and an outlay of ₹ 12309.12 Cr has been provided in BE 2023-24.
2. Electrical/Electronic Interlocking Systems with centralized operation of points and signals have been provided at 6521 stations upto 31.12.2023 to eliminate accident due to human failure.
3. Interlocking of Level Crossing (LC) Gates has been provided at 11143 level Crossing Gates up to 31.12.2023 for enhancing safety at LC Gates.
4. Block Proving Axle Counters (BPACs) for automatic clearance of Block Section, are provided to ensure complete arrival of train without manual intervention before granting line clear to receive next train and to reduce human element. These systems have been provided on 6478 Block Sections up to 31.12.2023.
5. Automatic block Signalling (ABS) has been provided at 4155 Route Kms upto 31.12.2023.
6. Indian Railway has also gone for implementation of advance technology system 'Kavach' as an Automatic Train Protection (ATP) system. Kavach is indigenously developed Automatic Train Protection (ATP) system which required safety certification of highest order. Kavach has also been adopted as a National ATP system in July 2020. Kavach has so far been deployed on 1465 Route Km and 139 locomotives (including Electric Multiple Unit rakes) on South Central Railway.
7. 'Real time Train Information System' (RTIS) have been provided for automatic acquisition of train movement timings.

8. Crew Video and Voice Recording System (CVVRS) has been provided in Locomotives for post event analysis.
9. Head on Generation (HOG) scheme has been implemented in passenger locomotives for feeding electric supply to LHB coaches for train lighting and air conditioning thereby reducing carbon emission, noise level and consumption of fossil fuels.
10. Railways has taken long term plan to acquire new technology 12000 HP electric locomotives and 9000 HP electric locomotives for freight operation. As of now, 380 nos. 12000 HP new technology locomotive (till December, 2023) have been inducted into service. For manufacturing new technology based 9000 High Horse Power Electric Freight Locomotives, a manufacturing unit, having modern World class manufacturing facilities, sanctioned at Dahod.
11. With a view to increase throughput, RDSO has issued technical specification for modern wagons (Modern Open Wagon & Modern Brake Van). In the recent past, multi-purpose and higher carrying capacity wagons have been designed by RDSO. These wagons will help in better utilization of rolling assets and increased throughput per rake.
12. To capture traffic of automobile movement, Indian Railways have introduced New Modified Goods (NMG) coaches which have been converted from ICF type Non-AC coaches at the end of their codal life for passenger service.
13. Introduction of IGBT based 3-phase propulsion system with regenerative braking in Electrical Multiple Unit (EMU) trains, Mainline Electrical Multiple Unit (MEMU) trains, Kolkata Metro rakes and Electric Train Sets.
14. Provision of energy efficient LED lights in coaches for better illumination.
15. Provision of 750V external power supply at washing/sick lines for maintenance and testing of LHB coaches resulting in significant saving of diesel.
16. Laying of track structure consisting of 60 kg/90 Ultimate Tensile Strength (UTS) rails on Pre-stressed Reinforced Concrete (PSC) sleepers with 1660 sleepers per km at the time of renewals, laying of longer rails, minimizing the use of Alumino Thermic Welding and adoption of better welding technology for rails i.e. Flash Butt Welding, use of thick web switches & Weldable Cast Manganese Steel (WCMS) crossings, using improved fittings, maintenance of track with the help of track machines, etc.
17. In order to facilitate easy movement of elderly, sick, differently abled passengers and for smooth access to platforms of railway stations and for ease of movement, Lifts and Escalators are provided depending on the relative priority of stations, availability of resources and techno-economic feasibility.

(b): Dedicated Freight Corridors (DFCs) offer higher transport throughput and carrying capacity due to faster transit of freight trains, running of double stack container trains and heavy haul trains leading to reduction in overall Logistics cost and time. This improves the supply chain for the industries/logistics players located in DFC's catchment areas leading to growth of Export-Import traffic as well.

(c): Gati Shakti Cargo Terminals (GCTs) are playing a pivotal role in increasing the modal share of Railways in the freight segment through following ways -

- Construction of new GCTs significantly increases the overall cargo handling capacity of Indian Railways as it enables the railways to handle large volumes of freight, leading to increased market share.
- GCTs terminals are strategically planned nationwide, connecting major production and consumption centers and these are developed in proximity to ports and highways to enable seamless integration with sea and road traffic.
- GCTs are to be equipped with modern infrastructure like automated handling system, dedicated rail sidings etc., which would lead to faster loading and unloading of cargo reducing turnaround time and optimizing resource utilization.

(d): The key statistics regarding freight loading and revenue during the last three years, are as under:-

Year	Freight Loading (In million Tonnes)	Revenue Earning From Goods ( ₹ in Crore)
2020-2021	1230.94	117231.82
2021-2022	1415.87	141096.39
2022-2023	1509.10	162262.90

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