

**GOVERNMENT OF INDIA  
RAILWAYS  
LOK SABHA**

UNSTARRED QUESTION NO:3644  
ANSWERED ON:13.02.2014  
RESEARCH AND DEVELOPMENT  
Hegde Shri. K. Jayaprakash

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

- (a) the details of objectives and responsibilities assigned to the Research, Design and Standards Organization(RDSO) under the Railways;
- (b) whether the RDSO has been meeting the said objectives and responsibilities and if so, the details thereof for the last three years and if not, the reasons therefor;
- (c) the details of major achievements made by the RDSO during the last three years, year-wise;
- (d) the details of funds allocated and spent on Research and Development(R&D) by the Railways during the said period, year-wise; and
- (e) the steps taken/being taken by the Railways to promote R&D activities?

**Answer**

MINISTER OF THE STATE IN THE MINISTRY OF RAILWAYS (SHRI ADHIR RANJAN CHOWDHURY)

(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.3644 BY SHRI K. JAYAPRAKASH HEGDE TO BE ANSWERED IN LOK SABHA ON 13.02.2014 REGARDING RESEARCH AND DEVELOPMENT

(a) Research, Designs and Standards Organization(RDSO) is the sole Research and Development(R&D) organisation of Indian Railways and functions as the technical advisor to Railway Board and Zonal Railways. The main objectives and responsibilities assigned to RDSO include the following:

- # Development of new and improved designs of systems and equipments
- # Development, adoption and absorption of new technology for use on Indian Railways
- # Development of overall system standards
- # Development of specifications for equipment, components & materials
- # Testing and Recommending authority for Statutory clearances(including Metro system)
- # Assistance in technical investigations
- # Quality Assurance of delegated items

(b) & (c) Yes, Madam. Some of the important achievements of RDSO, fulfilling the objectives and responsibilities assigned to it, during the past three years, year-wise, are listed below:

Year 2010-11

- (i) Development of Head-on-generation (HOG) power supply system for coaches
- (ii) Development of Electronics Interlocking for big yards
- (iii) Indigenous design development of WDG5 loco wheel.
- (iv) Development of 6670 Kilo Volt Ampere(KVA) transformer with finalisation of specification for 9000 Horse Power(HP) and 12000 HP freight locomotives.

- (v) Development of Wireless Coach Display Information System(WCDIS) on Satellite Imaging for Rail Navigation (SIMRAN) platform
  - (vi) Fatigue testing of composite sleepers for 2.0 million cycles of loading
  - (vii) Reinforced Earth Design of Embankment and Cuts in Railways with Indian Institute of Technology(IIT)/Kanpur
- Year 2011-12

- (i) Finalisation of specification for 9000 HP and 12000 HP freight locomotives.
- (ii) Design of Bi level auto car wagon BCACBM
- (iii) Mobile & Laptop charging facility
- (iv) Provision of toilets in Mainline Electric Multiple Units(MEMUs)
- (v) New state-of-the-art air-conditioned rakes for Kolkata Metro
- (vi) Development of Crashworthy Design of LHB Coaches in accordance with latest norms.
- (vii) Development of corrosion resistant rails
- (viii) Development of Bio-Toilet
- (ix) Guidelines for Design & Construction of Tunnels

Year 2012-13

- (i) Design of Concrete Bridges for Dedicated Freight Corridor(DFC) loading
  - (ii) Procedure for safety certification & technical clearance of Metro System
  - (iii) International Union of Railways (UIC)-Asia Energy Conservation Project
  - (iv) Development of Double Decker Coach Design
  - (v) Design and Development of IGBT inverter based 4500 HP diesel locomotive with hotel load capability
- (d) The details of funds allocated and spent for R&D under Plan-head Railway Research, during the last three years is given below.:

(Rs. in Crores)

Financial year allotment	Revised Budget	Expenditure
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2010-11	40.60	43.91
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2011-12	38.42	38.92
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2012-13	51.19	52.44
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(e) Some of the important steps taken/being taken by RDSO to promote R&D are as under:-

- (i) Setting up of Centre for Railway Research in IIT/Kharagpur for research in selected areas
- (i) Professorial Chairs at IIT/Kanpur and IIT/Roorkee for Research in identified areas
- (ii) Joint projects with UIC.
- (iii) Memorandums of Understanding with National Institute of Design, Ahmedabad etc.

(iv) Collaborations with other Research & Development institutions like Structural Engineering Research Centre(SERC), Central Electrochemical Research Institute(CECRI) and Defence Research & Development Establishment(DRDE) for R&D in identified

areas.