सत्यमेव जयते

Report of the Comptroller and Auditor General of India

for the year ended March 2019

लोकहितार्थ सत्यनिष्ठा

Dedicated to Truth in Public Interest

Union Government (Railways)

(Compliance Audit)

Report No. 5 of 2021

Report of the Comptroller and Auditor General of India

for the year ended March 2019

Laid in Lok Sabha/Rajya Sabha on _____

Union Government (Railways)

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Preface

The Report for the year ended March 2019 has been prepared for submission to the President under Article 151 of the Constitution of India.

The Report contains significant results of the compliance audit of the Ministry of Railways of the Union Government.

The instances mentioned in this Report are those, which came to notice in the course of test audit for the period 2018-19 as well as those which came to notice in earlier years, but could not be reported in the previous Audit Reports; instances relating to the period subsequent to 2018-19 have also been included, wherever necessary.

The audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

Contents

Abbreviations

Abbreviation	Full Form
AEN	Assistant Engineer
AGC	Assistant Guard's cabin
AGC	Agra Cantt
AIEHC	All India Engine Hour Cost
ATN	Action Taken Note
BDDS	Bomb Detection and Disposal Equipment's
BG	Broad Gauge
BN	Bibinagar
BRC	Vadodara
BZA	Vijayawada
C&W	Carriage and Wagon
CAO (Const)	Chief Administrative Officer (Construction)
CC	Carrying Capacity
CC apron	Cement Concrete apron
CCTV	Closed Circuit Television
CEL	Central Electronics Limited
Ch	Chainage
CHI	Chief Health Inspector
CONCOR	Container Corporation of India Limited
CPCB	Central Pollution Control Board
CPWD	Central Public Works Department
CRW/MCS	Carriage Repair Workshop at Mancheswar
CVC	Central Vigilance Commission
DDR	Dadar -Western Railway
DDU	Driver Display Unit
DFMD	Door Frame Metal Detector
DLW/BSB	Diesel Locomotive Works, Varanasi
DME	Divisional Mechanical Engineer
DMW	Diesel Loco Modernization Works
DR	Dadar-Central Railway
DRM	Divisional Railway Manager
DSL/AMV	Diesel Loco Shed, Alambagh
DSL/LKO	Diesel Loco Shed, Lucknow
Dy CME/EnHM	Dy Chief Mechanical Engineer, Environment and Health Management
E&RSA	Economic and Revenue Services Audit
ECoR	East Coast Railway
ECR	East Central Railway
EDDS	Explosive Detection and Disposal System

Abbreviation	Full Form
EI	Electronic Interlocking
EOL	Engine-on-Load
ER	Eastern Railway
ESP	Engineering Scale Plan
FIR	First Information Report
FOB	Foot Over Bridge
GAD	General Arrangement Drawing
GCC	General Conditions of Contract
GFR	General Financial Rules
GKP	Gorakhpur
GM	General Manager
GMC	Kanpur Goods Marshalling Yard
GOC	Golden Rock
GRP	Government Railway Police
GST	Goods and Service Tax
GY	Gooty
HHMD	Hand Held Metal Detectors
HI	Health Inspector
HJP	Hajipur
ICD	Inland Container Depot
ICDD	Inland Container Depot Dadri
ICDG	Inland Container Depot Kanpur Goods Marshalling
ICDM	Inland Container Depot Malanpur
ICDY	Inland Container Depot-Yamuna Bridge
IEEMA	Indian Electrical & Electronics Manufacturers' Association
IR	Indian Railways
IRCTC	Indian Railway Catering and Tourism Corporation
IRMM	Indian Railway Medical Manual
IRPSM	Indian Railway Project Sanction and Management
IRWM	Indian Railway Works Manual
ISS	Integrated Security System
IUCN	International Union for Conservation of Nature and Natural Resources
JPO	Joint Procedure Order
JRCT	Jaypee Rewa Cement Plant Siding
KI	Kondapalli
KZJ	Kazipet
LC	Level Crossing
LHS	Limited Height Subway
LOA	Letter of Acceptance

Abbreviation	Full Form
LPR	Last Purchase Rate
MEA	Minimum Essential Amenities
MGS	Mughalsarai
MLAR	Malanpur
MoEF	Ministry of Environment and Forest
MoR	Ministry of Railways
MORTH	Ministry of Road Transport & Highway
MoU	Memorandum of Understanding
MTMI	Motumarri
NCR	North Central Railway
NDKD	Nadikudi
NER	North Eastern Railway
NFR	Northeast Frontier Railway
NGT	National Green Tribunal
NH	National Highway
NHAI	National Highway Authority of India
NHS	Normal Height Subway
NLPD	Nallapadu
NPOH	Not due for POH
NR	Northern Railway
NWR	North Western Railway
NZM	Nizamuddin
OFC	Optic Fiber Cable
PAC	Public Accounts Committee
PCC	Permissible Carrying Capacity
PCCM	Principal Chief Commercial Manager
PCE	Principal Chief Engineer
PCME	Principal Chief Mechanical Engineer
PCOM	Principal Chief Operations Manager
PF	Platform
PFA	Principal Financial Adviser
PGT	Palghat
POH	Periodical Over Haul
PPE Act	Public Premises (Eviction of Unauthorized Occupants) Act, 1971
PSRS	Private Siding at Parsa
PVC	Price Variation Clause
RB	Railway Board
RBS	Rates Branch System
RCC	Reinforced Cement Concrete
RDM	Ramagundam

Abbreviation	Full Form
RDSO	Research, Designs and Standards Organization
RITES	Rail India Technical and Economic Service
ROB	Road Over Bridge
ROH	Routine Over Haul
RPF	Railway Protection Force
RPSF	Railway Protection Special Force
RRI	Route Relay Interlocking
RUB	Road Under Bridge
RYPS	Rayanpadu
S&T	Signal and Telecommunication
SCR	South Central Railway
SDAH	Sealdah
SECR	South East Central Railway
SER	South Eastern Railway
SIP	Signal Interlocking Plan
SJQ	Surajpur Road Station
SLR	Second Class Luggage Cum Parcel Van
SOR	Schedule of Rates
SR	Southern Railway
Sr. DEN	Senior Divisional Engineer
Sr. DFM	Senior Divisional Finance Manager
Sr.DCM	Senior Divisional Commercial Manager
Sr.DME	Senior Divisional Mechanical Engineer
Sr.DOM	Senior Divisional Operations Manager
SSE	Senior Section Engineer
SWR	South Western Railway
SWR	Station Working Rules
TC	Tender Committee
TM	Traction Motor
UMLCs	Unmanned Level Crossings
UVSS	Under Vehicle Surveillance System
VHF	Very High Frequency
VNUP	Vishnupuram
VPH	High Capacity Parcel Van
VPs	Parcel Vans
VPUs	Ventilated Parcel Unit
WCR	West Central Railway
WPI	Wholesale Price Index
WR	Western Railway
WWF	World Wildlife Fund

Overview

The Audit Report consists of audit findings relating to compliance issues in respect of the Ministry of Railways and its various field units. The Audit Report includes three thematic audit and 23 individual paragraphs. A brief overview of the important audit findings and conclusions is given below:

Para 2.1 Provision of Elephant Passages in Indian Railways

In order to prevent collision of trains with wild elephants, Ministry of Railways and Ministry of Environment & Forests (MoEF) had jointly issued general advisories (March 2010). Parliamentary Standing Committee on Railways constituted (January 2013), a Committee of senior officials of Ministry of Railways and MoEF (of Government of India, Government of West Bengal and Government of Odisha) to evolve an action plan for eliminating instances of elephant mortalities due to train hits. In their Report, the Committee recommended certain short-term and long-term measures to prevent train-elephant collisions. Ministry of Railways also circulated (June 2015) the recommendations of World Wildlife Fund-India (WWF) to stop elephant deaths on Railway tracks to six Zonal Railways (Northeast Frontier, Southern, South Eastern, East Coast, Northern and East Central Railways). WWF recommended imposition of speed restriction in sections of elephant passages, fencing of sections, regular co-ordination meetings and joint patrolling *etc.* Out of 194 notified elephant passages in eight Zonal Railways, 77 elephant passages were selected for joint inspection.

Although steps were taken by both the Railways and the Forest Department, elephants continue to die on track. Audit observed that:

a) In eight Zonal Railways covered in the audit, total number of elephants' death due to collision with trains were 23, 20 and 18 during the year 2016-17, 2017-18 and 2018-19 respectively.

b) More number of elephant casualties were reported in those locations which were identified as elephant passages.

c) Underpasses/overpasses were constructed for the safe passages of elephant only in respect of two Zonal Railways (East Central and Northeast Frontier Railways). After completion of those underpasses/overpasses, no elephant death was reported.

d) The advisories of Ministry of Railways for imposition of 50 kmph speed restriction in identified elephant passages were not being scrupulously followed by the Zonal Railways. The partial implementation of speed restrictions was causing death of elephants.

e) Periodical review of vegetation clearance was not being conducted by Railways and the Forest officials jointly.

f) Due to non-standardization of elephant signage boards by Railways, signage boards of different dimensions and colours having various contents were observed during joint inspection of the elephant passages which may lead to confusion among train crew.

g) Training and awareness campaigns were not being conducted frequently in many Zonal Railways where vulnerable sections of elephant passages exist.

h) Deployment of elephant trackers by Forest Departments in elephant passages and their communication with Railway Authorities was not found effective. Works of barricading/fencing along the Railway tracks to safeguard the wild elephants from collision with trains were not adequately executed in the Zonal Railways.

Audit recommendations

- ***Identification and notification of elephant passages should be reviewed periodically in consultation with the Forest Department. This will help in identifying changes in migration patterns.***
- ***Sensitising programme/ awareness workshops should be conducted for Station Masters/Train drivers/Guards to sensitise them about elephant conservation.***
- ***The signage boards to warn the drivers should be standardized w.r.t. colour, shape, height, placement, position etc.***
- ***Modern devices such as Radio-Frequency Identification (RFID) tag, Animal Detection System (transmitter collars) etc. that signal elephant presence from a safe distance could be used, as signage boards are not visible in fog/ rainy season/night time.***
- ***Honey Bee Sound Devices should be provided near all the identified elephant passages as advised by the Ministry of Railways.***

Para 2.2 Security risk due to inordinate delay in installation of "Integrated Security System"

For better security to passengers and to guard the Railway Installations, Ministry of Railways issued instructions to all Zonal Railways to implement Integrated Security System (ISS). All ISS equipment were not installed at once and the System Integration with control room as envisaged in the

contract was not achieved in East Coast Railway. Railway Administration neither took any action against the defaulting firm nor reported the progress/difficulties in installation of ISS equipment to Ministry of Railways. This resulted in security risk in East Coast Railway.

Para 2.3 Avoidable expenditure due to non-withdrawal of uneconomic/experimental stoppages

Ministry of Railways issued guidelines for provision and withdrawal of stoppages of Mail/Express trains on experimental basis from time to time. There were 171 experimental stoppages as on 31 March 2019 in North Eastern Railway. Audit analyzed data relating to details of trains, experimental stoppages, number of passengers travelled, earnings and other relevant information in respect of all 171 experimental stoppages. It was found that in 141 cases, earning was far less than the cost of stoppages. This led to an avoidable expenditure of ₹ 201.40 crore due to non-initiation of action by Ministry of Railways to review the withdrawal of uneconomic/experimental stoppages despite recommendations/requests of North Eastern Railway.

Para 2.7 Loss of revenue due to failure in fixing the reserve price according to the last accepted rate

Ministry of Railways issued (April 2014) modified policy guidelines on "Comprehensive Parcel Leasing Policy" for leasing out of parcel space of the Assistant Guard's cabin (AGC), Brake Vans (SLRs) and Parcel Vans (VPHs/VPs/VPUs)" in supersession of all previous instructions issued on the subject. Failure of the Eastern Railway Administration to fix the reserve price as per the available trend resulted in delayed award of contract and loss of opportunity to earn the required revenue. This led to loss of opportunity to earn revenue to the tune of ₹ 8.84 crore during the period August 2018 to June 2019. The loss would have worked out to ₹ 9.80 crore had the Railway Administration fixed the reserve price based on the existing contract awarded in North Western Railway in March 2018 for the same train.

Para 2.9 Non-levy of Service Tax on renting of space to vending contractors

Railway Administration was responsible to collect Service Tax from the licensees for installing vendor stalls at railway stations and its remittance to Government's exchequer. Audit observed that in four Zonal Railways (Northern, South Eastern, North Eastern and East Central), Railway Administration failed to comply with the provisions of Finance Act as well as Ministry of Railways instructions on Service Tax. This resulted in loss

of ₹ 7.88 crore to Government exchequer due to non-levy and non-recovery of Service Tax from the vendors.

Para 3.1 Price Variation in Works Contracts in Indian Railways

Price Variation Clause (PVC) was incorporated in General Conditions of Contract (GCC) to safeguard against change in prices of labour, material, fuel and other components. Ministry of Railways issued various instructions from time to time in this regard. In violation of Ministry of Railways periodic instructions on price variation, irregularities such as the incorrect adoption of base month and quarter, incorrect application of percentages of components in Price Variation formula *etc*. were noticed in the Zonal Railways. Extensions on railway's account were granted in a routine manner. Due to non-fulfillment of pre-requisites such as availability of clear sites, approved drawings and design *etc*., Railways paid significant amount towards price variation during the extended period of contract.

Certain provisions of General Financial Rules (GFR) on application of Price Variation Clause (PVC) were not adopted/incorporated in the General Conditions of Contracts (GCC) by Ministry of Railways. Cases of fraudulent payment of price variation to contractors in Northeast Frontier Railway were noticed. Monitoring mechanism for checking of price variation bills by the Executive and the Accounts Department was weak. This resulted in avoidable/excess payment of ₹ 1,172.04 crore and short payment of ₹ 8.76 crore towards price variation to the contractors in the works contracts test checked in audit.

Audit recommendations

- ***Ministry of Railways needs to revisit GCC w.r.t Works Contracts and incorporate the provisions of GFR relating to applicability of PVC in long term contracts (more than 18 months) and a ceiling on PVC amount payable to contractors.***
- ***Ministry of Railways should issue clear instructions relating to contract matters such as adoption of the Base month in case of negotiation and 'two packets system of tendering', percentage of labour to be reckoned for machine crushed ballast etc.***
- ***Ministry of Railways may direct the Zonal Railways to maintain computerized database of all the works contracts (with PVC and without PVC) to avoid incorrect inclusion of PVC in the contracts below the stipulated contract agreement value.***

Para 3.2 Unproductive expenditure on construction of Limited Height Subways

Level Crossings (LCs) facilitate smooth running of traffic in a regulated manner. Limited Height Subways (LHSs), in lieu of Unmanned Level Crossings (UMLCs), constructed on Rohtak - Panipat section of Delhi Division of Northern Railway were submerged in water and remained unutilized rendering whole expenditure of ₹ 16.19 crore unproductive. The main objectives for elimination of Level Crossings *i.e.* to prevent loss of human lives and road accidents apart from better traffic movement could not be achieved due to LHS remaining unusable.

Para 3.3 Loss due to indecision of Railway Administration in the matter of land acquisition

Ministry of Railways sanctioned the work of Hajipur - Sagauli New Line in 2003-04 with Abstract Estimate of ₹ 324.66 crore. In October 2007, Ministry of Railways sanctioned the Detailed Estimate of ₹ 528.65 crore. The Detailed Estimate contained a provision of ₹ 115.16 crore for land acquisition of 2,043.96 acre. In the meanwhile, Bihar Land Acquisition, Resettlement and Rehabilitation Act, 2007 was enacted and accordingly the State Authority/Champaran revised (March 2007) the cost of land to ₹ 98.72 crore (962.59 acre) for 49 villages. Railway Administration deposited ₹ 17 crore (31 March 2007) for land acquisition of 28 villages. District Magistrate/East Champaran submitted (January 2012) again a Revised Estimate of ₹ 350.84 crore for 49 villages. A demand of ₹ 333.84 crore (₹ 350.84 crore minus ₹ 17 crore) which included the remaining amount of ₹ 3.20 crore for 28 villages was made. In the Revised Estimate, the estimated cost of 28 villages was still ₹ 20.20 crore. The possession of these land had already been provided to Railways as per sub section 3 (a) of section 17 of Land Acquisition Act, 1894. However, despite demand of the District Magistrate/East Champaran for ₹ 3.20 crore for 28 villages which was already acquired by Railway Administration, no payment was made.

In January 2016, District Magistrate/East Champaran revised the cost of entire 49 villages w.e.f. 1 January 2014. Resultantly, the estimated cost of all 49 villages escalated to ₹ 796.28 crore (₹ 154.41 crore for 28 villages for which land acquisition was already made and ₹ 641.87 crore for remaining 21 villages). Railway Administration paid the entire amount of ₹ 796.28 crore (including ₹ 134.21 crore for the land of 28 villages). Thus, Railway Administration had to incur an avoidable additional expenditure of ₹ 134.21 crore.

Para 3.5 Avoidable extra expenditure due to faulty planning in embankment work

South Eastern Railway took up the work of embankment as part of doubling in Andul-Baltikuri section without proper planning and did not follow codal provisions as well as guidelines of Research, Designs and Standards Organisation (RDSO). This resulted in embankment failure as well as bulging /slippage at different locations with consequential extra expenditure of ₹ 14.08 crore on rehabilitation work.

Para 3.8 Change in design and location of a bridge resulted in its abandonment and consequent infructuous expenditure

Ministry of Railways instructed that all plans, drawing and estimates should be duly approved/sanctioned by the competent authority. The entire prerequisites may be completed in time before awarding of contracts.

Change in design from well foundation to pile foundation as well as location of the Bridge No. 182 between IB and Brajrajnagar station over South East Central Railway led to wasteful expenditure amounting to ₹ 6.73 crore after termination of first contract. This also resulted in abandonment of the incomplete Bridge No.182 constructed with well foundation.

Para 3.9 Non-implementation of Ministry of Railways directives resulted in non-realization of penalty from the contractors

Ministry of Railways issued a Joint Procedure Order (JPO) in December 2004 for execution of works in the vicinity of working signal and telecommunication cables. In order to minimize and control cable cuts while carrying out digging works near existing S&T and electrical cables, Ministry of Railways issued (June 2013) revised JPO. Review of records of S&T Department of South Central Railway and East Coast Railway for the period April 2013 to 2019 revealed non-implementation of Ministry of Railways directives. This resulted in non-realization of penalties from the various departments/agencies in South Central and East Coast Railways. An amount of ₹ 12.59 crore was still outstanding in 1,084 cases.

Para 4.1 Audit of Selected Stations in Indian Railways

Audit of eight selected stations in selected seven Zonal Railways (Northern, North Central, North Eastern, East Central, Eastern, Western and Central Railways) covered the aspects of Cleanliness, Sanitation, Environment Management, Safety, Security and Encroachment at Railway Stations

It was observed that 77 Platforms (PFs) were available in the eight selected stations, but Cement Concrete (CC) Washable Apron had not been

provided at 26 Platforms. Despite having facilities of mechanized cleaning in the contract at all selected stations, the facility was underutilized due to non-availability of washable apron at these 26 Platforms in seven stations. Non-availability of CC aprons also resulted in blockage of drains with ballast on the track which ultimately resulted in creating unhygienic surroundings. Indian Railway Water Policy, 2017, stipulate that recycled water was to be used for non-potable purposes. Audit, however, observed that Zonal Railway Administration were yet to install water recycling plants in these stations and groundwater is being used for all purposes.

Water taps (1316) were to be made available in the eight stations as per prescribed norms, however, the availability of water taps was 1022 only. Similarly, against the requirement of 154 water coolers as per the prescribed norm (Minimum Essential Amenities -MEA) only 63 water coolers were available.

The cleaning contracts of five stations did not have the clause for segregation of waste as bio-degradable and non-bio-degradable. This resulted in mixed waste being transported and dumped at landfills. System to monitor the noise level as required under rules 3(1) and 4 (1) of the Noise Pollution (Regulation and Controls) Rules 2000 did not exist at any of the selected stations. System for measurement of noise when passing/movement of trains did not exist at any of the selected stations. Closed Circuit Television (CCTV) footage was not integrated to the command centre at five stations and Bomb Detection and Disposal System was not available at five stations. Provision of boundary walls was not made in the circulating area at five stations. Security arrangement was also ineffective to maintain an encroachment free station premises. A total of 532 encroachments existed around the six stations premises. Audit observed that no norms were prescribed for handling the footfalls in the Foot Over Bridges (FOB).

Audit recommendations

- ***Ministry of Railways needs to frame a separate Waste Management Policy and comply to Board/NGT's instructions to overcome the shortcomings of Waste Management at the Stations.***
- ***Ministry of Railways needs to take adequate measures for planning and implementation of water management which includes availability of sufficient water, water treatment plant, water recycling plant etc.***
- ***Ministry of Railways needs to take appropriate measures to remove encroachments.***

- ***Ministry of Railways needs to provide adequate Integrated Security System as per recommendations of the High Level Committee.***

Para 4.5 Loss due to premature condemnation and replacement of Spherical Roller Bearings and non-enforcement of warranty clause thereon

Spherical Roller Bearings is a vital anti-frictional element which improves service life of rolling stock by reducing the heat produced. In terms of RDSO specification, the contractor shall replace the roller bearings failing or proving unsatisfactory within a period of 36 month or 4,00,000 km from the date of commissioning into service whichever is later. Period of warranty shall stand extended by the duration for which the roller bearings remain inoperative under exercise of this Clause. The codal life of the bearings as prescribed by RDSO is 20 years.

Wheel Shop of Carriage Repair Workshop at Mancheswar (CRW/MCS) of ECoR replaces the defective Roller Bearings during overhauling of coaches. Audit noticed that during overhauling of coaches at MCS, 71 *percent* (4,481 out of 6,332) bearings were scrapped within half of the codal life. Warranty claim was to be raised against the bearings which had failed within 36 months from the date of induction into service. Due to non-maintenance of records on date of procurement and date of commissioning of bearings, Railways forfeited the right of proper warranty claim. Thus, due to premature condemnation and replacement of Spherical Roller Bearings and non-enforcement of warranty clause thereon, Railway sustained a loss of ₹ 5.30 crore.

Para 4.6 Procurement of complete Rotor and Stator of Traction Motor at higher rates resulted in avoidable extra payment

CVC guidelines (2002) stipulate that estimates for contracts should be worked out after due consideration to prevailing market rates, last purchase prices, economic indices for raw material etc.

Chittaranjan Locomotive Works (CLW) purchased 769 Rotors and 450 Stators for assembling Traction Motor from trade during 2018-19.

At the time of evaluation, the Tender Committees (TCs) observed that there was a decreasing trend in basic price of Rotors and Stators from 2013-14 to 2016-17. However, in spite of decreasing trend of prices, the TCs finalized the procurement of Rotors at higher rates.

The procurement was made in contravention of the CVC guidelines resulting in avoidable extra payment of ₹ 15.88 crore.

Chapter 1 – Introduction

1.1 Audited Entity Profile

Indian Railways is a multi-gauge, multi-traction system with a total route length of 67,415 km (as on 31 March 2019). Some important statistics[1] regarding route/track length in Indian Railways are given below:

Table 1.1

Particulars	Broad Gauge (1,676 mm)	Metre Gauge (1,000 mm)	Narrow Gauge (762/610 mm)	Total
Route Kilometre[2]	62,891	2,839	1,685	67,415
Track Kilometre[3]	1,18,857	2,863	1,822	1,23,542
Electrified Route Kilometre	34,319	-	-	34,319

Indian Railways runs 13,523 passenger trains and 9,146 goods trains every day[4]. During 2018-19, it carried 23.12 million passengers and 3.36 million tonnes freight each day. As on 31 March 2019, Indian Railways had 12.27 lakh workforce and maintained the following infrastructural assets and rolling stock:

Table 1.2

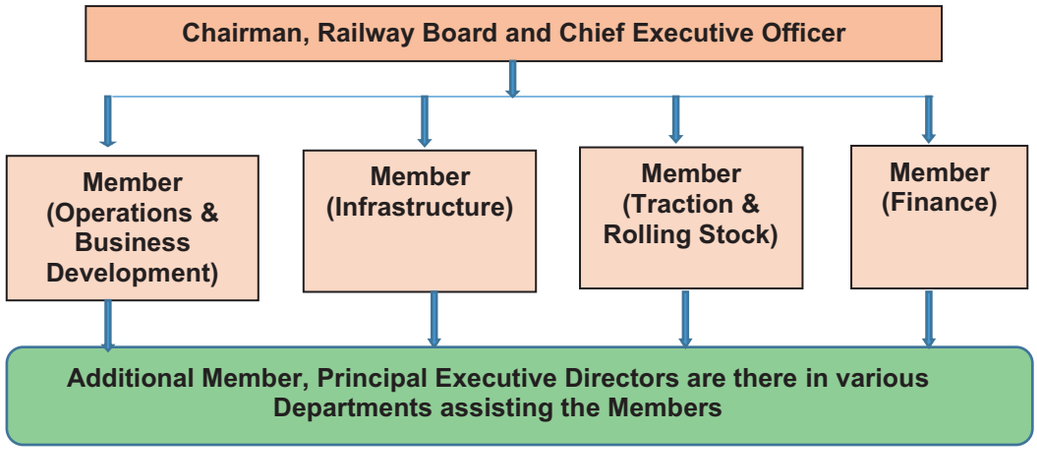
Infrastructural assets/Rolling stock	Numbers
Locomotives	12,147
Coaching Vehicles	74,003
Freight Wagons	2,89,185
Stations	7,321

Ministry of Railways (MoR) is headed by a Union Minister of Railways (a Cabinet Minister) and one Minister of State of Railways. Railway Board which is the apex body of Indian Railways, reports to the Minister of Railways. The Board is headed by Chairman, Railway Board & Chief Executive Officer (CRB-CEO) and has four Members viz. Member (Operations & Business Development), Member (Infrastructure), Member (Traction & Rolling Stock) and Member (Finance)[5]. The Board lays down

[1] Source: Indian Railways Year Book 2018-19
[2] The distance between two points on the Railway irrespective of the number of lines connecting them, whether single line, double line *etc.*
[3] Length of all running tracks and tracks in sidings, yards *etc.*
[4] Source: Indian Railways Year Book 2018-19
[5] Revised Organizational Structure of Railway Board issued vide MoR's Office Order No.64 of 2020 dated 8 September 2020

policies on operation and maintenance of train services, acquisition, construction and maintenance of assets. It monitors implementation of policies and instructions across Zonal Railways. Railway Board also regulates pricing of both passenger fares and freight tariffs. The Functional Directorates under each Member assist and aid in decision-making and monitoring of railway operations.

The organizational structure[6] of Railway Board is as follows:



Member (Operations & Business Development) looks after Traffic Transportation, Coaching, Tourism & Catering, Commercial, Non-Fare Revenue, Marketing & Business Development and Information Technology.

Member (Infrastructure) looks after Works, Civil Engineering, Bridges, Signal & Telecommunication, Land & Amenities, Station Development and Railway Electrification.

Member (Traction & Rolling Stock) looks after Production Units, Mechanical Workshops, Coaches, Locomotives, Train sets, Environment and House Keeping, Electrical Maintenance of Coaching Stock, Traction Distribution, Power Supply, Renewable Energy and Material Management.

Member (Finance) is responsible for Accounts, Finance, Budget, Revenue and Statistics & Economics.

In addition, Human Resources, Safety, Security, Health, Planning, Infrastructure, Vigilance, Efficiency & Research, Public Relations, Heritage, Transformation Cell, Corporate Co-ordination are the Directorates that report directly to the Chairman, Railway Board & Chief

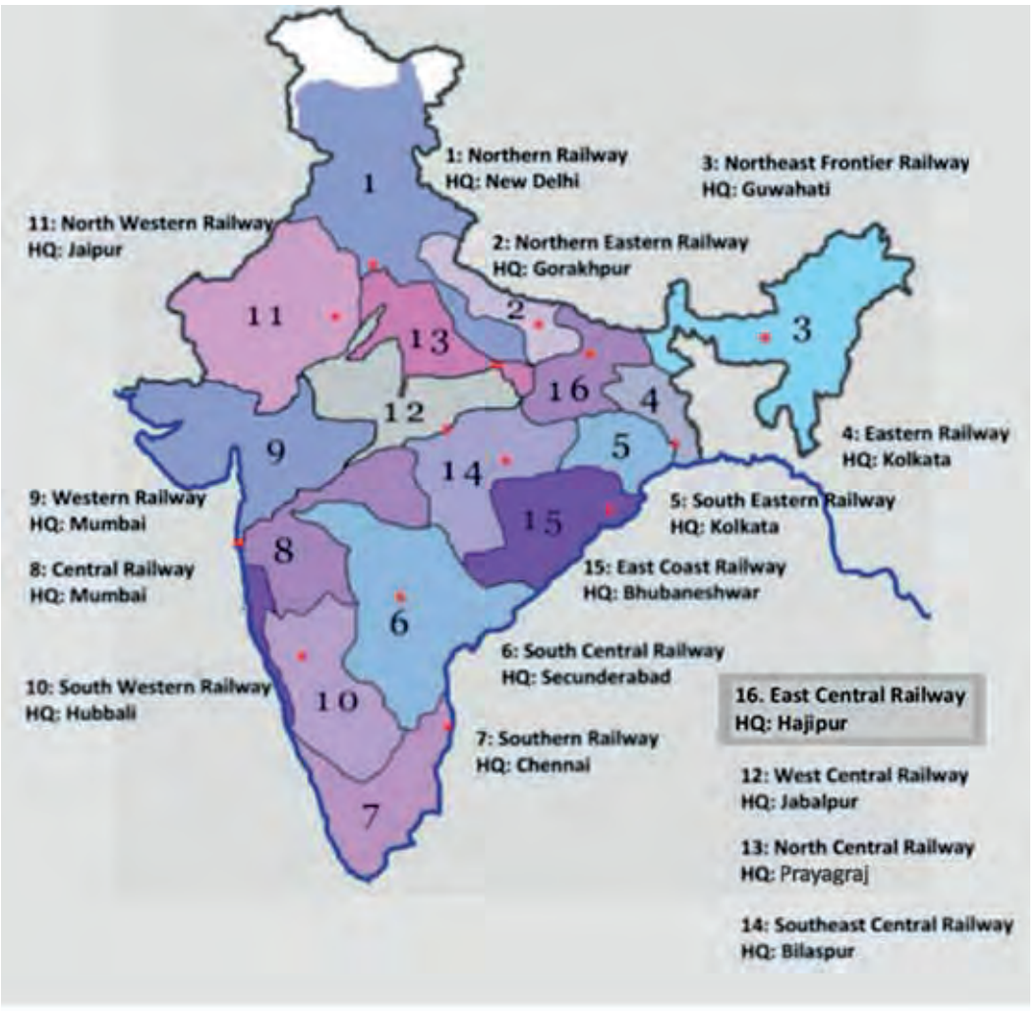
[6] Ministry of Railways' Office Order No.64 of 2020 dated 8 September 2020

Executive Officer. These Directorates are headed by Additional Member and Principal Executive Directors.

At the field level, there are 17 Zonal Railways including Metro Railway /Kolkata. In addition, there are specialized organizations viz.

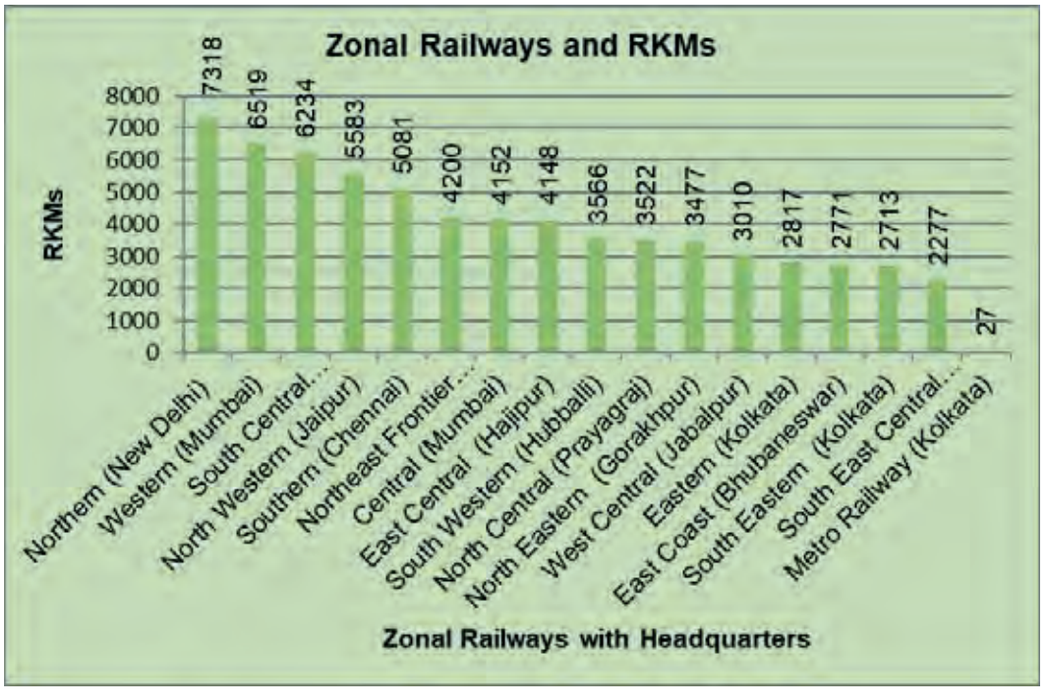
- Research, Designs and Standards Organization (RDSO), Lucknow for research and standardization:
- Central Organization for Modernization of Workshops (COFMOW) for procurement of specialized machinery:
- Locomotive manufacturing units, Banaras Locomotive Works[7] at Varanasi, Chittaranjan Locomotive Works at Chittaranjan and Diesel Loco Modernization Works at Patiala:
- Coach factories at Kapurthala, Raebareli and Perambur, Rail Wheel Factory at Yelahanka and Rail Wheel Plant at Bela.

Zonal Railways and their Headquarters as on 31 March 2019 is shown in the diagram below:



[7] Diesel Locomotive Works, Varanasi renamed as Banaras Locomotive Works vide Gazette Notification No.2020/Elect (TRS)/225/2 dated 27 October 2020.

Zonal Railways wise Route Kilometers (RKMs) as on 31 March 2019 were as under:



Each Zonal Railway is headed by a General Manager who is assisted by Principal Heads of Departments. These include Operating, Commercial, Engineering, Electrical, Mechanical, Stores, Accounts, Signal & Telecommunication, Personnel, Safety, Medical Departments *etc*. Besides the above, there are 40 Public Sector Units and two Autonomous Bodies (Rail Land Development Authority and Centre for Railway Information Systems) under control of MoR.

A fully integrated financial advice and control system exists at Railway Board headed by the Member (Finance). At Zonal level, finance functions are headed by Principal Financial Adviser (PFA). He is assisted by Financial Adviser and Chief Accounts Officers (FA&CAOs). They are responsible for rendering advice and scrutinizing all proposals involving expenditure from the public exchequer.

1.2 Authority for audit

The authority for our audit is derived from Articles 149 and 151 of the Constitution of India and the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) (DPC) Act, 1971. Audit of expenditure and receipts of MoR and its Autonomous Bodies is conducted under Section 13, Section 16 and Section 20 (1) of the CAG's (DPC) Act respectively.

1.3 Audit Planning

Selection of the units for audit of the Railways is planned on the basis of a risk assessment. The risk is assessed based on the level of budgets

planned, resources allocated and deployed, extent of compliance with internal controls, scope of delegation of powers, sensitivity and criticality of function/activity, external environment factors *etc.* Previous audit findings, Public Accounts Committee (PAC)'s recommendation and action taken by the MoR, media reports, where relevant, are also considered. Based on such risk assessment, test audit of 6,119 entities/units of the Railways was conducted during 2018-19.

The Audit Plan focused on selected issues of significant nature in terms of policy and its implementation. These included freight traffic, earnings, infrastructure development, passenger amenities, asset management, material management and safety works. Each study brings out important audit findings and conclusions followed by audit recommendations to help improve systems and strengthen internal control mechanism in Railways.

1.4 Reporting

Audits of selected topics were conducted across the Zonal Railways. Relevant records and documents of the field units as well as that of Railway Board were reviewed. Appropriate samples from the population were selected so as to adequately cover the issues under study. The audit findings were issued to the respective Zonal Managements for their response. Audit findings were either settled or further action for compliance was advised depending upon the action taken. Important audit observations, not having been complied with, were followed up through Draft Paragraphs addressed to the General Managers of Zonal Railways. Copies of Draft Paragraphs were endorsed to the PFAs and Heads of the Departments for reply within the prescribed period. Selected issues were taken up as Provisional Paragraphs and issued to the MoR for eliciting their reply before inclusion in Audit Report.

1.5 Structure of the Report

This Audit Report comprises results of scrutiny of transactions relating to expenditure, receipts, assets and liabilities of the units under the control of MoR. This includes examination of the adequacy, legality, transparency and effectiveness of the relevant rules to maintain and ensure control mechanism over public expenditure. The effectiveness of the rules to safeguard against misuse, waste and losses was also examined.

The Report contains four Chapters. Chapter 1 is introductory in nature and covers issues of cross-cutting nature. The other three Chapters relate to the core functional areas of the three Railway Board Members (Operations & Business Development, Infrastructure, Traction & Rolling Stock. The Report presents audit findings of significant materiality which are intended to aid the Executive in taking corrective actions for better

performance and financial management. Detailed findings pertaining to the Zonal Railways on the following subjects are presented in this Report:

(i) Provision of Elephant Passages in Indian Railways

(ii) Price Variation in Works Contracts in Indian Railways

(iii) Audit of Selected Stations in Indian Railways

In addition, 23 individual paragraphs covering audit findings of respective Zonal Railways are presented in Chapters 2 to 4 of this Report.

1.6 Response of the Ministry/Department to Provisional Paragraphs

A total of 40 Provisional Paragraphs were issued to MoR[8] between 11 November 2019 and 12 October 2020 and a time of six weeks was provided for furnishing a response to the same. As at the end of February 2021, MoR's replies were received in respect of 13 Provisional Paragraphs. Replies received were duly considered and suitably incorporated in the Audit Report. The response in respect of other Provisional Paragraphs (27 nos.) was awaited from MoR. In this Report, 26 Provisional Paragraphs have been included.

1.7 Recoveries at the instance of Audit

Audit had pointed out the cases of undercharges/overpayments of ₹ 132.51 crore in the various Zonal Railways during the year 2018-19. This included undercharges in realization of freight and other earnings, over payments to staff and other agencies, non-recovery of dues of the Railways *etc*. During the past six years, ₹ 777.78 crore had been recovered by the Railways at the instance of Audit, as detailed in Table 1.3.

Table 1.3 – Amount recovered at the instance of Audit during 2013-14 to 2018-19

Year	Amount Recovered/accepted for recovery (₹ in crore)
2013-14	107.70
2014-15	101.26
2015-16	80.27
2016-17	162.91
2017-18	193.13
2018-19	132.51
Total	**777.78**

During 2018-19, an amount of ₹ 132.51 crore was accepted for recovery by various Zonal Railways and other field units. Of this, ₹ 104.07 crore

[8] CRB & CEO, Members concerned and Member (Finance)

was recovered and ₹ 28.44 crore was agreed to be recovered by the Zonal Railways. Four Zonal Railways accounted for recoveries exceeding ₹ 10 crore each[9]. Out of ₹ 132.51 crore, ₹ 66.71 crore pertained to transactions already checked by Railways' Accounts Department and ₹ 65.68 crore pertained to other than those checked by Accounts Department. As a result of further review carried out by Accounts Department, another ₹ 0.12 crore was recovered/agreed to be recovered by the Zonal Railways.

1.8 Remedial action on Audit Paragraphs included in the Audit Reports

As per the Public Accounts Committee (PAC) recommendations[10], Ministry/Departments of the Government of India should furnish corrective/remedial Action Taken Note (ATN) on all paragraphs raised in the Audit Reports within four months after laying of the Report in the Parliament.

On the Audit Paragraphs selected by PAC, discussions/oral evidence is taken by PAC. After the oral evidence, PAC issue Reports containing their observations/recommendations on which action is to be taken by the Ministry. The Action Taken Reports (ATRs) on the PAC Reports are submitted by the Ministry to the PAC after audit vetting.

The status of pending ATNs and ATRs as on 30 September 2020 has been given in **Annexure 1.1**.

Some of the important cases, where MoR had made appropriate changes and issued instructions during 2018-19 for streamlining their internal process are illustrated in Table 1.4.

[9] NER (₹ 10.72 crore), NR (₹ 20.93 crore), NFR (₹ 24.34 crore) and ECR (₹ 24.67 crore)
[10] Ninth Report (Eleventh Lok Sabha) presented to the Parliament on 22 April 1997

Table 1.4		
Para No./ Report No.	**Audit Observations /Recommendations**	**Action taken by Railways**
Chapter 2- Management of Works Contract in Indian Railway of Report No. 48 of 2015 - Performance Audit on Status of On-going Projects	Railways should take immediate steps for implementation of complete E-tendering in respect of works contracts.	System of e-tendering In Works Tenders had been implemented over Indian Railways w.e.f 1 April 2016.
	General Conditions of Contract (GCC) (Clause 8-Part-I) require that Contract Agreement should be executed by the contractor within seven days of receipt of Letter of Acceptance (LOA). As per Clause 16 (4) of GCC, the successful bidder is required to submit a Performance Guarantee (PG) within 30 days from the date of issue of LOA and on payment of penal interest beyond 30 days up to 60 days. Contract Agreement should be signed only after deposit of PG by the tenderer. Thus, a contradiction exists in policy instructions.	Provisions of Para of GCC were modified in accordance with Cause 16 (4) of GCC related to Performance Guarantee.
	Many contracts were terminated after incurring heavy expenditure. The average time taken for re-tendering was very high and extra expenditure incurred due to higher	Instructions were issued (19 June 2015) to all the Zonal Railways and Production Units to ensure that the contracts terminated on contractor's account

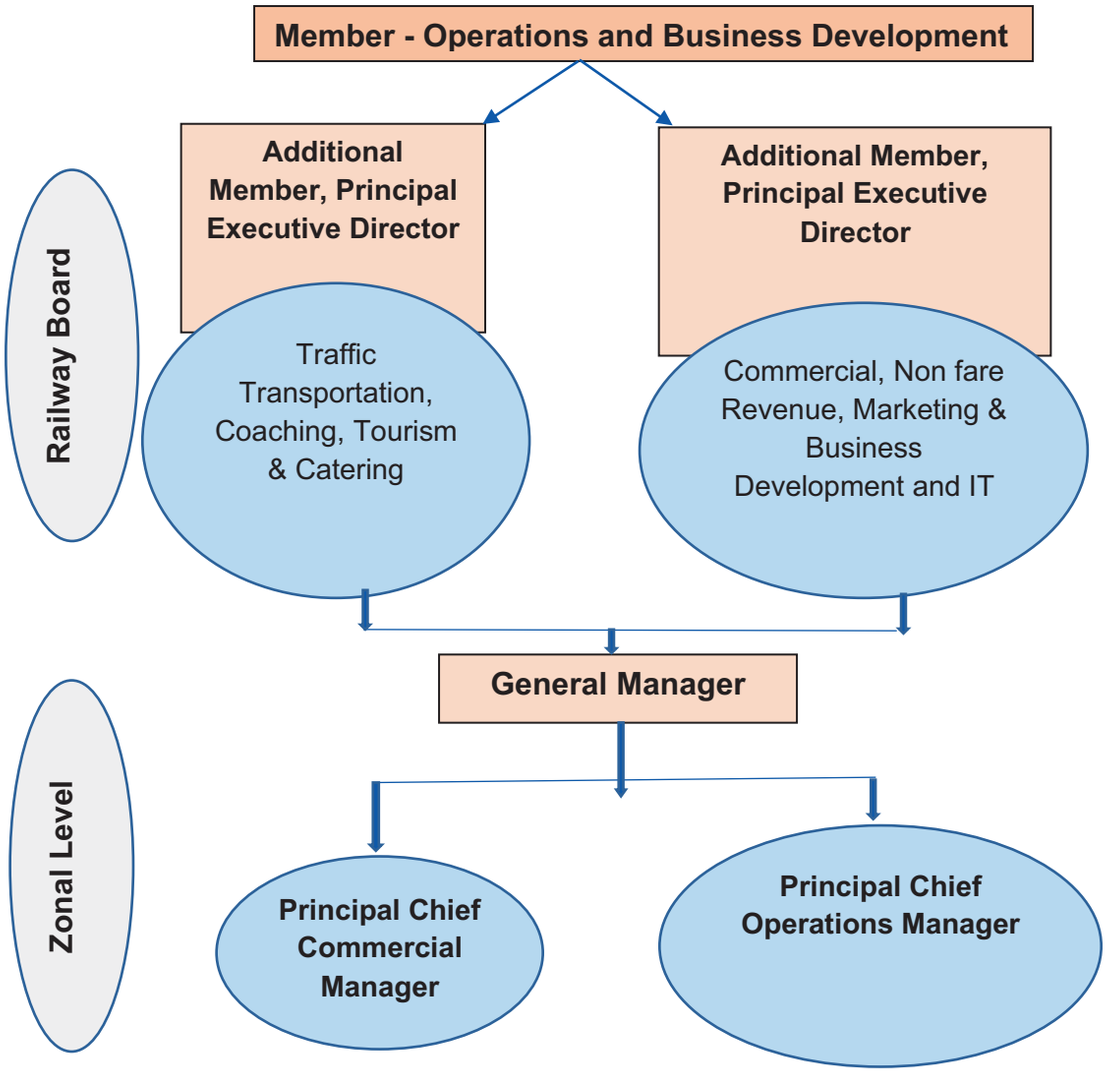
Table 1.4

Para No./ Report No.	Audit Observations /Recommendations	Action taken by Railways
	rates accepted in re-tendering resulting in increasing the cost of works.	should be re-tendered at the earliest possible date.
Para 5.9 of Report No.13 of 2016 - Short realization of maintenance charges due to non-revaluation of cost of Defence siding in NFR	Non-revaluation by the Railway of the cost of their portion of a Defence Siding after every five years resulted in non-revision of maintenance charges and consequent short realization of ₹ 7.56 crore from Defence siding.	NFR Administration raised (September 2016) a bill for recovery of ₹ 7.91 crore from Defence authorities.
Para 5.12 of Report No.13 of 2016- Irregular expenditure of ₹ 6.55 crore on Road Over Bridge (ROB) over a line leased to Bharuch-Dahej Railway Company Limited (BDRCL)	MoR had clarified (July 2012) that all the infrastructure augmentation cost on the line belonging to Special Purpose Vehicle (SPV) has to be borne by SPV. Western Railway Administration booked ₹ 6.55 crore to its Safety Fund towards construction of ROB in lieu of a Level Crossing. This was in contravention of the clauses of lease agreement signed with BDRCL.	MoR had decided (September 2017) that cost of elimination of Unmanned Level Crossings on SPV lines will be borne by the Railways. Accordingly, instructions, in supersession of MoR's letter dated 2 November 2015, were issued vide letter No.2015/Infra/18/6 dated 23 November 2017.
Para 2.10 of Report No.14 of 2017 - Non-revision of interest and maintenance	Delay in processing the proposal for revision of interest and maintenance charges in respect of six private sidings at various	Zonal Railway raised the bills of ₹ 7.82 crore. Out of this, ₹ 0.74 crore was realized. Efforts were being made to recover

Table 1.4		
Para No./ Report No.	**Audit Observations /Recommendations**	**Action taken by Railways**
charges of private sidings	level (Division and Zonal Headquarters) of NCR Administration resulted in non-billing of charges at revised rates and consequential short recovery of interest and maintenance charges of ₹ 7.82 crore.	the balance amount from the siding owners through regular follow up by the Divisional authorities.
Para 2.13 of Report No. 5 of 2018 - Loss due to non-realization of engine hire charges from the siding owner	Despite detention of Railway's Engine in the siding beyond permissible period under Terminal Incentive cum Engine on Load Scheme (TIELS) and clear instructions of MoR on realization of engine hire charges on this account, SECR Administration did not realize the engine hire charges of ₹ 28.23 crore from the siding owner.	MoR agreed with the audit's contention for levy of engine hire charges beyond free time. Out of ₹ 28.23 crore, ₹ 20.96 crore was recovered/adjusted and efforts were being made to realize the remaining amount.

Chapter 2 – Operations and Business Development

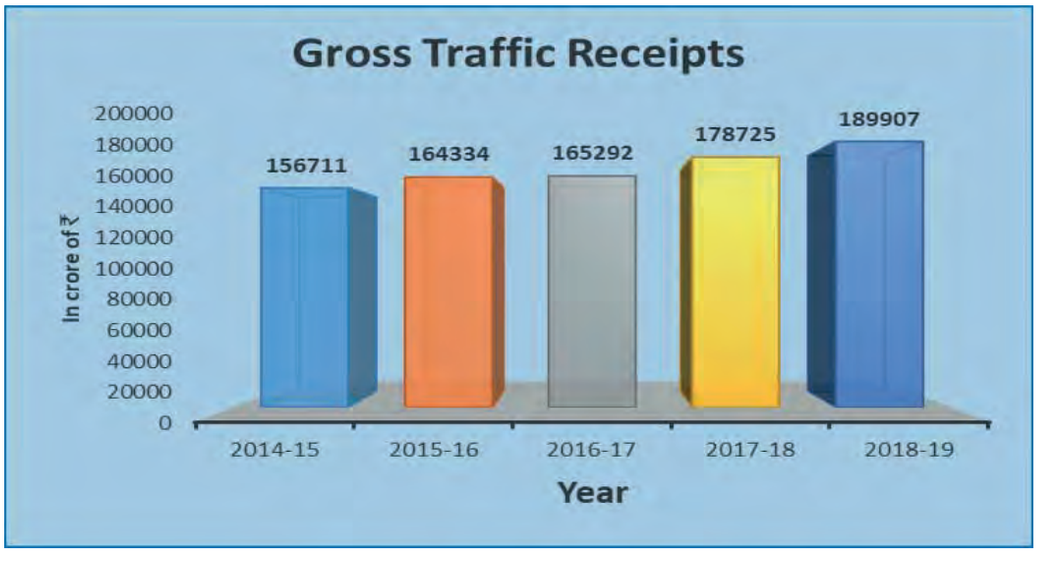
Member (Operations and Business Development) at Railway Board is responsible for Traffic Transportation, Coaching, Tourism & Catering, Commercial, Non Fare Revenue, Marketing & Business Development and Information Technology. He is assisted by Additional Members/Principal Executive Directors for fulfilling his responsibilities.



At the Zonal level, the Traffic Department has two departments, viz. Operating and Commercial. These are headed by Principal Chief Operations Manager (PCOM) and Principal Chief Commercial Manager (PCCM) respectively, who work under the overall supervision of General Manager of the Zonal Railway. At the divisional level, the Operating and Commercial Departments are headed by Senior Divisional Operations Manager (Sr.DOM) and Senior Divisional Commercial Manager (Sr.DCM)

respectively, who report to Divisional Railway Manager (DRM) of the concerned Division.

The total traffic operating expenses during the year 2018-19 was ₹ 27,273.29 crore[11]. Total gross traffic receipt during the year was ₹ 1,89,906.58 crore[12]. A comparative graph of Gross Traffic Receipts for the last five years is shown below:



During 2018-19, the annual growth rate of passenger originating improved by 1.85 *per cent*[13] over the previous year. Passenger earnings in 2018-19 increased by 4.98 *per cent*[14]. In 2018-19, freight loading increased by 5.34 *per cent*[15]. The freight earnings increased by 8.87 *per cent* as compared to the previous year. Sundry earnings in 2018-19 decreased by 19.47 *per cent* from ₹ 8,688.18 crore to ₹ 6,996.23 crore when compared to the previous year.

During the year, apart from regular audit of vouchers, tenders *etc*., 980 offices of the Commercial and Operating departments were audited.

This Chapter includes a Pan India Paragraph on 'Provision of Elephant Passages' in Indian Railways. In addition, this chapter also includes eight individual paragraphs. These paragraphs highlight compliance issues in

[11] Sub Major Head 3002-3003 (07)-Operating Expenses - Traffic in 2018-19
[12] Includes Passenger Earnings ₹ 51,066.65 crore, Freight Earnings ₹ 1,27,432.72 crore, Other Coaching Earnings ₹ 4,474.46 crore and Sundry Earnings ₹ 6,996.23 crore, Clearance for Traffic Outstading (Suspense) ₹ (-) 63.48 crore
[13] Indian Railways carried 8,439.06 million passgengers during 2018-19 as against 8,285.77 million passengers in the previous year
[14] ₹ 48,643.14 crore in 2017-18 and ₹ 51,066.65 crore in 2018-19
[15] 1,159.55 million tonne in 2017-18 to 1,221.48 million tonne in 2018-19

the implementation of rules and regulations on Passenger and Freight Business in Indian Railways.

2.1 *Provision of Elephant Passages in Indian Railways: East Coast, Northeast Frontier, South Eastern, Southern, South Western, Northern, East Central and North Eastern Railways*

Ministry of Railways circulated (June 2015) the recommendations of World Wildlife Fund-India (WWF) to stop elephant deaths on Railway tracks to six Railway Zones (NFR, SR, SER, ECoR, NR and ECR).

Despite steps taken by both the Railways and the Forest Department, Elephants continue to die on track. It was observed that in the eight Zonal Railways total number of elephants' death due to collision with trains were 23, 20 and 18 during the period 2016-17 to 2018-19 respectively.

Audit analysis of identified passages and elephant deaths on track during the period of review revealed that more number of elephant casualties were reported in those locations which were identified as elephant passages.

The proposals for construction of overpass/underpass were long pending. Construction of underpass/ overpass for safe passage of elephants was not being given priority by the Forest Departments as well as by the Railways. Periodical review of vegetation clearance was not conducted by Railway and Forest officials.

Due to non-standardization of elephant signage boards by Railways, signage boards of different dimensions and colours having various contents were seen during joint inspection of the elephant passages.

2.1.1 Introduction

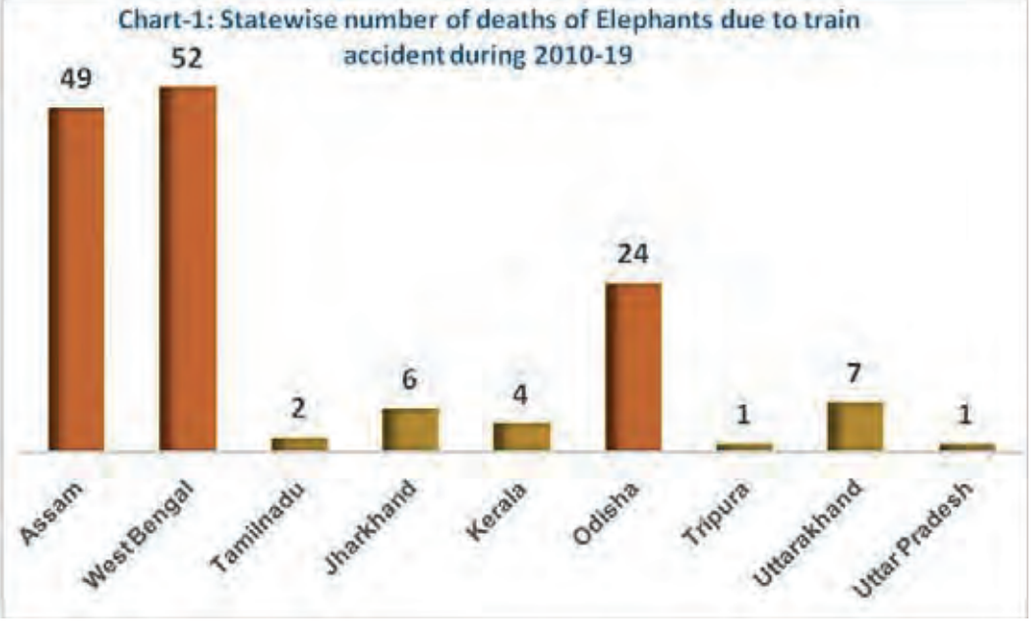
Indian elephant has been listed as an endangered species[16] since 1986 by International Union for Conservation of Nature and Natural Resources (IUCN). During the period 2012-17, the elephant population in India registered a 11 *per cent* decrease i.e. from 30,711 to 27,312[17]. In order to provide maximum legal protection, Elephant has also been included as a Schedule-I animal under the Wildlife Protection Act, 1972. Further, Project

[16] An endangered species is a species which has been categorized as very likely to become extinct.
[17] As per the Ministry of Environment & Forest (MoEF) census reports

Elephant was launched (1992) by the Government of India to protect elephants, their habitat and corridors.

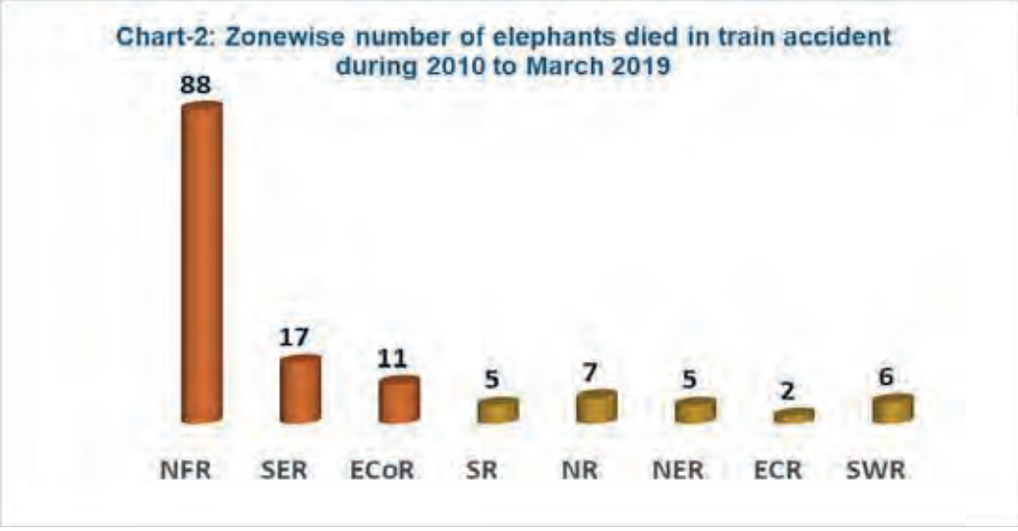
In India, elephants are distributed in four population units *viz.* North Western (Uttarakhand and Uttar Pradesh); North Bengal and North East; East Central (Jharkhand and Odisha) and South (Tamil Nadu, Kerala and Karnataka). In these regions, Ministry of Environment and Forests (MoEF) identified 138 State, 28 Interstate and 17 International corridors. Many stretches of these corridors also pass through Railway tracks. These corridors were identified as Elephant Passages by the MoEF followed by notification by various Zonal Railways.

Despite identification and notification of elephant passages, death of elephants due to train accidents account for the second largest[18] reason for unnatural deaths of elephants. State-wise and Railway Zone-wise statistics of such elephant deaths is indicated in Chart 1 and Chart 2 respectively.



Source: Reply of Rajya Sabha Question No. 1511 dated 1 January 2018, Lok Sabha Starred Question No. 125 dated 8 December 2015 and information collected from Forest Department.

[18] As per Lok Sabha Unstarred Question No. 1083 dated 8 February 2019



Source: Ministry of Railways (MoR) letter (January 2013) to Parliamentary Standing Committee on Railways on evolving Action Plan for eliminating elephant mortalities due to train hits,12th Report of Standing Committee on Railways 2016-17, Reply of Rajya Sabha Question No. 3336 dated 23 March 2018 and data collected during the present audit.

In order to prevent collision of trains with wild elephants, Ministry of Railways (MoR) and MoEF had jointly issued general advisories[19] in March 2010. The General Advisories *inter alia* included measures like clearance of vegetation alongside the tracks; fixing of signage boards to warn the driver of the train; sensitizing programmes for train drivers/guards; keeping the track free from food waste and construction of underpasses/overpasses.

Further, the Parliamentary Standing Committee on Railways constituted (January 2013) a Committee of senior officials of MoR and MoEF (of Government of India, Government of West Bengal and Government of Odisha) to evolve an action plan for eliminating instances of elephant mortalities due to train hits. In their Report, the Committee recommended following short-term and long-term measures to prevent train-elephant collisions:

[19] MoR's letter No. 2007/TT-IV/9/8 dated 30 March 2010

Short term measures	Long term measures
Formation of permanent co-ordination committee between Railways and Forest official at Zonal/Divisional levels **Conducting** periodic review of the agreed actions between Railways and Forest officials **Imposition** of speed restriction **Cleaning** of vegetation **Deployment** of elephant trackers *etc.*	**Construction** of grade separators **Construction** of overpasses/underpasses, girder type bridge **Development** of electronic intelligence surveillance **Lighting** along the Railway track *etc.*

The MoR also circulated[20] (June 2015) the recommendations of World Wildlife Fund-India (WWF) to stop elephant deaths on Railway tracks to six Zonal Railway[21]. WWF recommended imposition of speed restriction in sections of elephant passages, embankments which hinders safe passages of elephant be levelled, fencing of sections, regular co-ordination meetings and joint patrolling *etc.*

Despite steps taken by both the Railways and the Forest Department, Elephant death on track continued. Some photographs of train collision and resultant death are shown below:

Figure 2.1: ECoR: Elephant death after collision with train near Kaunriapal, Dhenkanal on 20 June 2019

Figure 2.2: ECoR: Elephant death after collision with train in Basantpur-Naranpur section on 21 November 2018

[20] MoR's letter No. 2015/TT-IV/13/5 dated 4 June 2015
[21] NFR, SR, SER, ECoR, NR and ECR

Figure 2.3: NFR: Elephant death in Azara on 16 January 2017

Figure 2.4:NFR: Elephant death in Azara on 16 January 2017

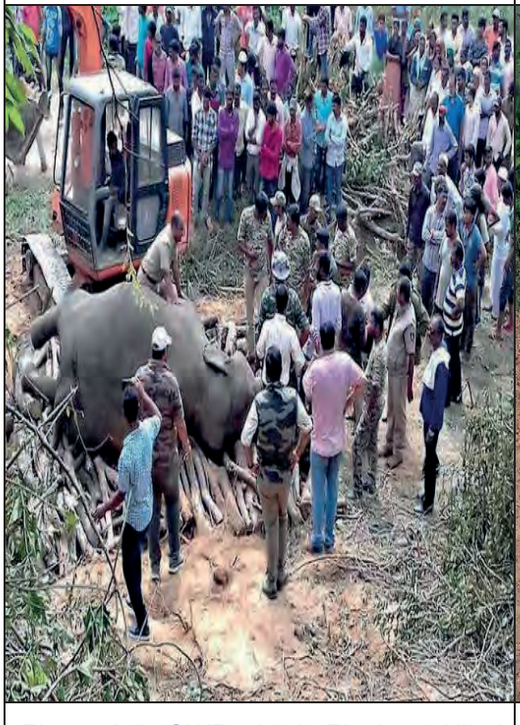


Figure 2.5: SWR: Adult Elephant killed on 9 December 2018 between Sakaleshpur and Ballupet Stations over Mysore Division

Figure 2.6: SWR: Elephant killed between Alnawar and Tavaragatti Stations over Hubballi Division on 9 October 2017

Figure 2.7: SER: Three Elephants died after collision with train near Gidhni Station of SER on 7 August 2018

Figure 2.8: SER: Four Elephants died after collision with train near Bagdihi Station on 16 April 2018

Figure 2.9: SWR: Two Elephant calves killed on 3 June 2018 between Srivagilu-Yedakumari Stations over Mysore Division

Photo source: Newspaper reports regarding the mishaps

2.1.2 Audit Objectives

The audit was conducted to assess whether the action plan (short term/ long term measures) devised by MoR and MoEF jointly to prevent train accidents involving elephants was being strictly implemented in Zonal Railways. It was also to be examined, whether the efforts made by

Railways were effective in preventing elephant mortality due to train accidents.

2.1.3 Audit Criteria

Criteria for conducting this study were derived from the following sources:

i) General advisories issued by MoR and MoEF.
ii) Letters/Circulars/orders regarding elephant death due to train accident issued by MoR and Zonal Headquarters.

2.1.4 Audit Scope and Methodology

Audit was conducted in the eight Zonal Railways (NFR, SER, ECoR, SR, NR, SWR, ECR and NER) where death of elephants due to collision with trains was mentioned in MoR's letters (January 2013, December 2016 and March 2018)[22]. Audit examined the instances of elephant deaths on track during the period from 2016-17 to 2018-19 and the steps taken by Railways for elephant passages. Audit methodology included the examination of records in Zonal headquarters, divisions and joint inspection in selected elephant passages and adjacent stations thereof. Information was also collected from the concerned State Forest Department through Accountant General (E&RSA) offices. This included issues like elephant mortality on tracks, provision of elephant corridors in Railway premises and co-ordination between Forest Department and Railway authorities.

2.1.5 Sample Size

Out of the total 194 notified elephant passages[23] in eight Zonal Railways **(Annexure 2.1)**, 77 elephant passages[24] were selected for joint inspection by officials of Audit and Engineering Departments. Sample size was subject to selection of minimum of 10 and maximum of 15 passages per Zonal Railways. The following criteria were adopted for the selection of passages in Audit.

i) locations at which death/ injuries of elephants due to collision with train were reported in the past;
ii) locations at which honey bee sound devices were installed/ proposed to be installed to ward off wild elephants from track;

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[22] MoR's letter to Parliamentary Standing Committee on Railways on evolving action plan for eliminating elephant mortalities due to train hits (January 2013), 12th Parliamentary Standing Committee on Railways (2016-17), Reply of Rajya Sabha Question No. 3336 dated 23 March 2018
[23] ECoR-34,ECR-2,NER-10,NFR-68,NR- 11,SER-52,SR-07,SWR-10
[24] ECoR-10,ECR-2,NER-10,NFR-15,NR-10,SER-13,SR-07,SWR-10

iii) locations at which construction of overpass/ underpass across the Railway tracks were completed/ proposed for construction by the Forest Department; and

iv) locations where barricading/ solar fencing of tracks were done/ proposed.

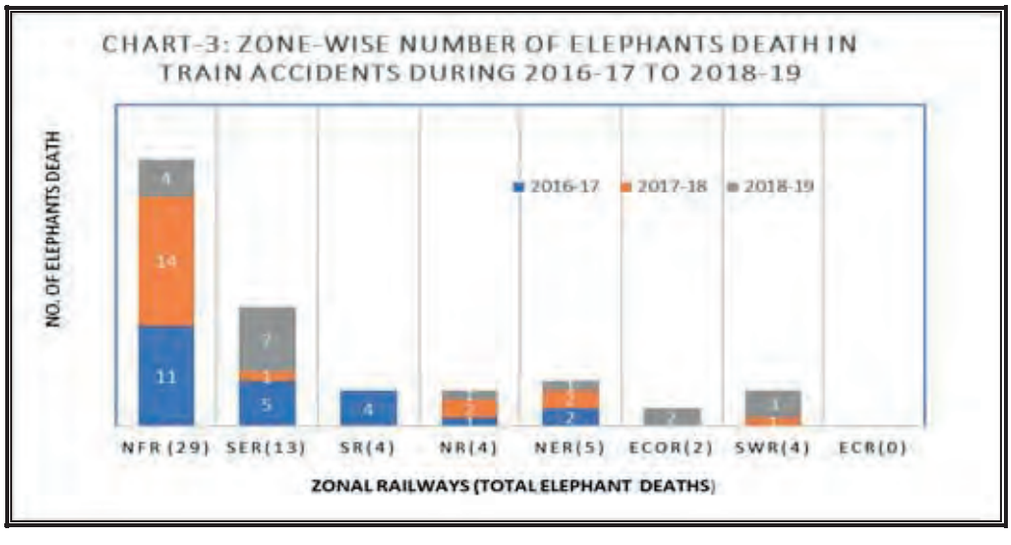
2.1.6 Audit Findings

Audit observations from the study conducted in eight Zonal Railways are as follows.

(i) Identification of Elephant Passages in Railways

The vulnerable sections of Railway track where the elephant herds normally cross are identified by the State Forest Department. The list of such locations/ sections is sent to Railway Administration for notification as elephant passages and taking precautionary measures.

In the eight Zonal Railways covered in the audit, it was seen that in the years 2016-17, 2017-18 and 2018-19, total number of elephants' death due to collision with trains were 23, 20 and 18 respectively. Railway Zone-wise and year-wise breakup of these 61 elephant deaths in three years are shown in the **Chart-3** below.



The above chart shows that NFR accounted for the maximum number of elephant deaths (29 deaths) due to train hit followed by SER (13 deaths). During the review, it was noticed that 194 locations/stretches of Railway track were identified by the eight Zonal Railways covering 769 route km. **(Annexure 2.1)**. Audit analysis of identified passages and elephant deaths on track during the period of review[25] revealed that more number

[25] 2016-17 to 2018-19

of elephant casualties were reported in those locations which were identified as elephant passages. Thirty seven deaths occurred in the identified passages and 24 deaths occurred in the un-identified passages.

NR had notified 11 locations as elephant passages. However, the Forest Department of Uttrakhand and Uttar Pradesh have notified 28 locations of NR as elephant passages. Similarly, one location at Km. 28/1-30/0 in Tinsukia-Ledo section of NFR has been identified as elephant passage by the Forest Department, but the same section has not been notified by NFR as elephant passage. This indicated lack of co-ordination between Forest Department and Railway Administration.

(ii) Construction of underpasses/overpasses across the Railway tracks to allow elephants to pass

MoR in March 2010 mentioned that MoEF would provide a list of selected locations for underpasses/ overpasses. The cost would be borne by the MoEF and the Railways would execute the work on deposit terms. During the review, it was noticed that underpasses/ overpasses were constructed for the safe passages of elephant only in respect of two Zonal Railways (ECR and NFR). The details of the works executed are as follows:

- In ECR, Road Over Bridges were constructed at two locations[26] at a cost of ₹ 9.70 crore for safe passage of elephant, which were completed in April 2014. The cost of the work was fully borne by Railway and no financial assistance was received from the Forest Department.

Figure 2.10: ECR: Overpass constructed over Railway track between Khurhagora and Kathautia stations for safe passage of elephants

[26] at Km. 45.900 and Km 47.475 between Khurhagora and Kathautia station of KQR-HZBN Section

- In NFR, construction of 20 metre width passes at five locations between Chalsa-Nagarkata and three number of ramps between Madarihat-Hasimar were completed in May 2012 at a cost of ₹ 0.27 crore. Construction of girder bridge and Rail fencing work between Gulma-Sevok was completed in January 2013 at a cost of ₹ 1.53 crore. Both these works were funded by Forest Department.

After completion of those underpass/overpasses, no elephant death was reported near those passes/ramps/girder bridge constructed in ECR and NFR. Apart from these two Zones, no such underpass/overpass was constructed in other Zonal Railways.

Thus, construction of underpass/overpass for safe passage of elephants was not given priority by the Forest Departments as well as the Railways.

(iii) Implementation of Advisories issued to prevent death of elephants on track

MoR in consultation with the MoEF have devised certain policy and circulated them to the Zonal Railways for implementation to prevent elephant casualties. Implementations of specific recommendations/ advisories are mentioned below:

a) Imposition of Speed restriction at identified elephant habitats/passages

Standing Committee on Railways (2013), recommended for restricting the speed of the train at vulnerable locations. This would reduce the chance of elephant hits by train. Therefore, as an immediate measure, a speed restriction of 50 kmph at vulnerable locations was agreed by both Railways and Forest Department.

Implementation of the recommendation was examined at 77 selected passages **(Annexure 2.2)** and the following observations are made:

- Caution order/Speed restriction of 50 Kmph or less than 50 kmph were being imposed for whole day in 37 passages[27]; however, in 18 passages[28], it was followed for night time only. In one selected passage of NFR (Rangjuli-Amjanga section) caution order of 60 kmph was being imposed. In one selected passage of ECR (Koderma Jn-Hazaribag Town), imposition of speed restriction was stated to be not required due to construction of overpasses.

[27] ECR-1,NER-10,NFR-14,NR-2,SER-9,SWR-1
[28] ECoR-3,NR-8,SR-7

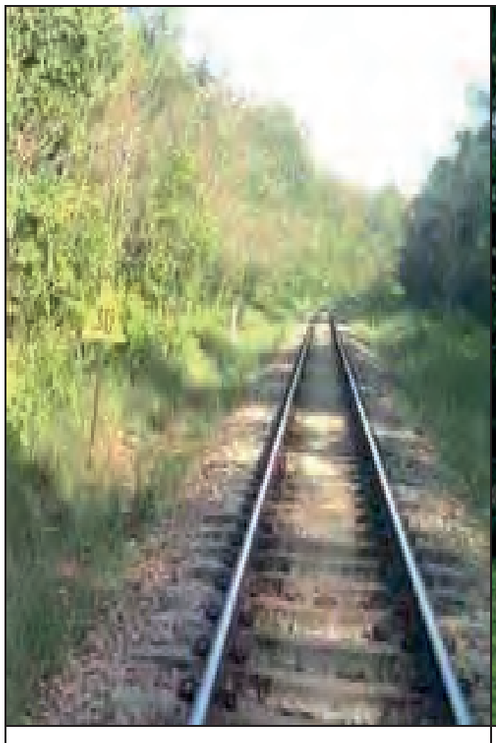


Figure 2.11: NER: Permanent speed restriction of 30 kmph imposed in elephant passage at KM 121/0-123/0 of Mihinpurwa-Murtha section

Figure 2.12: ECR: Permanent speed restrictions of 25 kmph imposed in elephant passage between Chhipadohar and Hehegara station

- In seven other selected elephant passages of ECoR, instead of 50 kmph speed restriction, a caution advice of 'Blow Long Whistle, sharp look out and stop dead if required' have been implemented.
- In the remaining 13 elephant passages[29], no speed restriction or caution advice was imposed by the Railway Administration despite notification of the same as elephant passages.

It was evident from the above instances that the advisories of MoR for imposition of 50 kmph speed restriction in identified elephant passages were not being scrupulously followed by the Zonal Railways. The partial implementation of speed restriction was causing elephant deaths in the notified passages. The details are tabulated in **Annexure 2.2.**

b) Clearance of vegetation on the sides of track

As per the MoEF recommendations circulated by MoR in September 2017, heavy vegetation growth along Railway tracks often prove detrimental to elephants in two ways. One, they create a form of pseudo refuge for elephants beside Railway track, and two; they reduce visibility

[29] SWR-9 and SER-4

for train drivers who were unable to detect the presence of elephant. Thick vegetation at blind curve also reduces visibility for elephants, and reduces the time within which they were able to detect on coming trains. It was, therefore, important that all the identified section of elephant corridor or vulnerable areas identified by Forest Department were cleared of vegetation on regular interval to improve visibility. Crop cultivation on Railway land along the Railway track of identified section should be restricted. MoR in March 2010 stipulated that Zonal Railways in consultation with Forest Department will identify the vulnerable areas. Zonal Railways will arrange need based clearing of vegetation on the sides of the Railway track within Railway land.

Implementation of this advisory was test checked at 77 selected locations through joint inspection by Audit and Engineering Department and the following observations are made:

- During the joint inspection, vegetation along the track was found to be cleared in 64 out of the 77 selected locations. In the remaining locations heavy/partial vegetation was noticed.

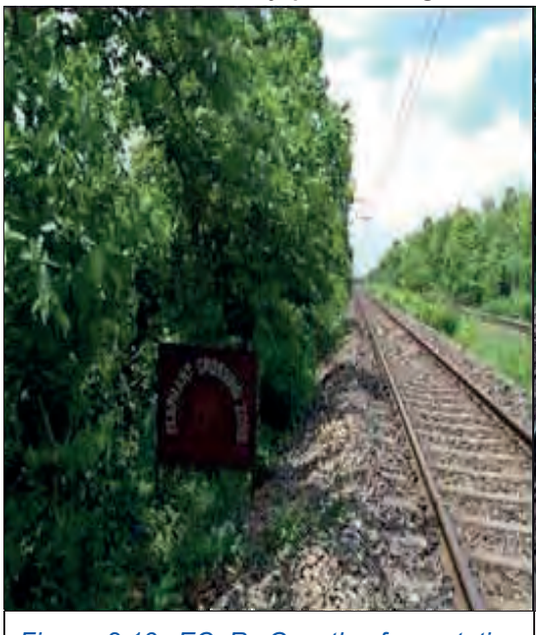


Figure 2.13: ECoR: Growth of vegetation seen during joint inspection in the notified elephant passage location between Rajathgarh-Ghantikhal Nidhipur stations

Figure 2.14: NFR: Vegetation along the track in section RVK-APDJ section

Thus, periodical review of vegetation clearance needs to be conducted by Railway officials.

c) Provision of Signage boards to warn the Train Drivers

As per the MoEF recommendations circulated by MoR in September 2017, signage is an important component of long-term mitigation measures to forewarn the driver about elephant corridor. Placing appropriate signage with adequate visibility at key points along Railway tracks is extremely useful, as they at a glance convey the messages to train drivers. Signage are especially required to be placed at crucial points of elephant crossing/ movement zones for attention of driver that the train will be passing through the vulnerable section and also for reducing the speed. Hence signage should be provided at suitable location on both sides of the track in identified locations to warn the driver. This was also circulated vide the joint advisories issued in the month of March 2010. Implementation of this advisory was test checked at the selected locations through joint inspection and the following were noticed:

(i) Indian Railways Permanent Way Manual (IRPWM) prescribes[30] the dimension, colour and contents of various Engineering Indicators/caution signs for dead stop and non-stop restrictions outside station limits. But the manual was silent about the shape, size, colour, height and content of the elephant signage boards to be installed at/ before the elephant passages. Due to non-standardization of elephant signage boards by Railways, signage boards of different dimensions and colours having various contents were seen during joint inspection of the elephant passages.

[30] Annexure 8/3- Para 807 and 808 of Chapter VIII of IRPWM

Various types of Elephant signage boards seen during joint inspection

Figure 2.15: ECoR: Retro reflective signage board in Kendujhar Garh - Basantapur section

Figure 2.16: ECoR: Salagaon - Charbatia section (Down line)

Figure 2.17: ECoR: Rajathagarh - Ghantikhal Nidhipur section

Figure 2.18: NFR: Signage Board in Elephant passage at Km. 94/2

Figure 2.19: NFR: Signage Board in Elephant passage in RNY-RPAN Section

Figure 2.20: NFR: Signage Board in Elephant passage at Km 152/7.

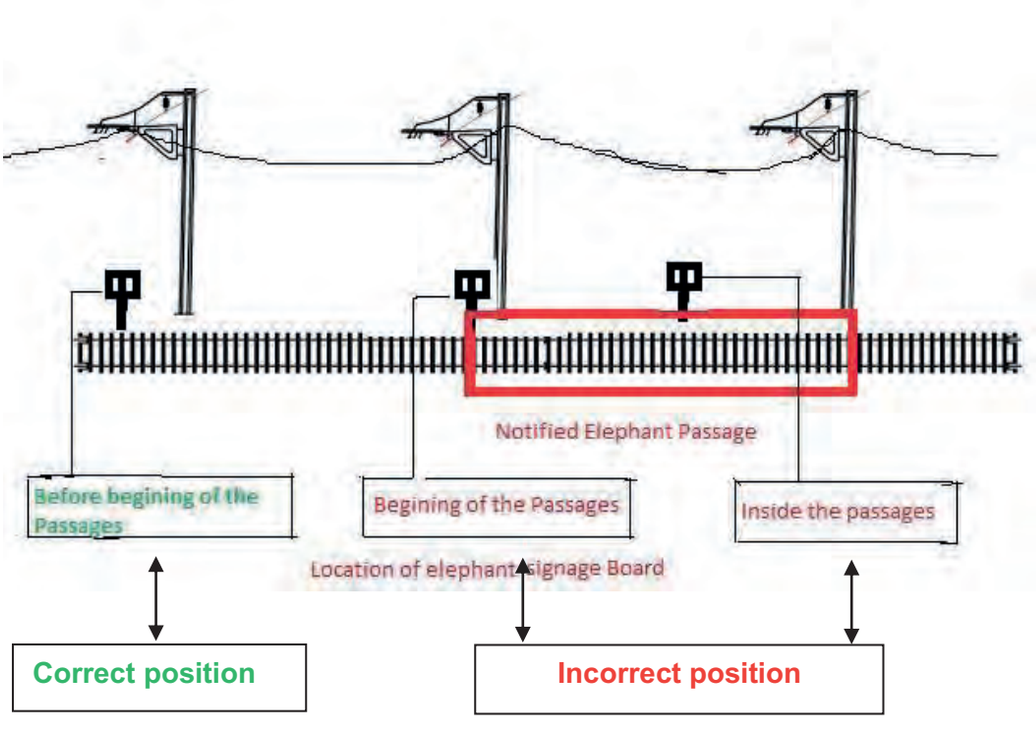
The above pictures show that there was no uniformity in dimension, height, colour and content of the elephant signage boards in Indian Railways. Within each zone many types of signage boards were being placed.

(ii) It was also noticed by Audit that:

a) Out of the 77 selected passages, Signage boards were not provided in 23 passages[31] of five Zonal Railways.

b) Retro reflective signage boards were fitted in 30 passages[32] of five Zonal Railways and hand painted signage in various colours were provided in 24 passages[33] in five Zonal Railways.

c) In eight selected passages[34] of four Zonal Railways, the signage boards were placed inside the notified elephant passages. In other 31 passages[35] of six Zonal Railways, the boards were provided at the beginning of the passages. Signage Boards were correctly provided before the beginning of 15 passages[36] of three Zonal Railways. The details are tabulated in **Annexure 2.2.**



Difference between 'At the beginning of passage' and 'Before the beginning of passage' is shown above.

Placement of signage boards somewhere inside the passages or outside the stretch of other passages would create confusion among the train crew. The signage board was meant to *FOREWARN* the train driver;

[31] NFR-7,NER-5,NR-4,SER-6 and SWR-1
[32] ECoR-4, ECR-2, NFR-6,NR-6,NER-1,SER-3, SR-7 and SWR-1
[33] ECoR-6,NER-4,NFR-2,SER-4 and SWR-8
[34] ECoR-2, SER-3, NER-2 and NFR-1
[35] ECoR-2, NER-3, NR-6, SER-4, SR-7 and SWR-9
[36] ECoR-6, ECR-2 and NFR-7

hence it should be placed sufficiently before the notified elephant passages.

d) Sensitising programmes for Train Drivers/Guards/Station Masters

As per advisories (30 March 2010 and 12 September 2017), Train Drivers/ Guards/ Station Masters will be sensitized on wild life conservation/ protection during periodical refresher courses. Awareness programme should focus on laying out clear directives that can be followed by train drivers, such as travelling at relatively slow speed within vulnerable sections. The workshop would involve Railway staff like Train Drivers, Guards, Station Masters as well as staff of the Forest Department.

During review, audit collected information on conduct of training on wild life conservation/protection or sensitising programme/awareness workshop in the eight Zonal Railways and noticed the following:

- In six Zonal Railways (ECoR, ECR, NER, SER, SR, SWR) no such programmes or awareness workshop on wild life protection and conservation was organized in the Zonal Railway Training Institute.
- In NFR, 17 sensitizing/awareness programme were organised at Zonal Railway Training Institute, Alipurduar during 2016-17 to 2018-19. Total 1,576 Railway staff viz. 936 Train Drivers/ Assistant Train Drivers, 238 Guards, 159 Station Masters, 20 track staff and 223 other Railway staff had attended such training.
- In NR at Divisional System Training Centre/Moradabad, training on 'possible risk of elephant mortality due to train hits' were being imparted to the Railway staff. Total 973 Railway employees such as 630 Train Drivers/ Assistant Train Drivers, 313 Guards and 30 Station Masters/Assistant Station Masters had attended such training during 2016-17 to 2018-19.
- In response to Audit query, ECoR and ECR Administration stated that awareness programmes were being conducted to sensitize the Train Drivers about elephant movement and their protection. However, no detailed record of date and place of such programmes was available. SR Administration stated that to sensitise the train drivers for protecting the wild elephants, two sessions were held in August 2016 and March 2017 respectively at the Running Room of Palakkad.

Thus, training and awareness campaigns were not being conducted frequently in many Zonal Railways where vulnerable sections of elephant

passages existed. There was scope of improvement in sensitizing the Train Drivers about elephant movements and precautions to be taken to safeguard the wildlife.

e) Engagement of Elephant trackers and Communication with Station Masters

The advisory (30 March 2010) for protection of elephants from trains also stated that MoEF would engage elephant trackers equipped with mobile phone/walkie talkies to receive/pass on information regarding presence of elephant herds around Railway track. Further, separate wireless communication facility would be provided at the stations falling within the vulnerable areas identified by the MoEF. On receipt of information, Station master would give "Look out advice" to the train crew.

A Meeting of Permanent Coordination Committee was held on 12 September 2018 between MoR and MoEF[37]. It was decided to post the forest official in the divisional control room for quick transmission of information regarding crossing of elephant herd and imposition of speed restriction immediately.

During the joint inspection of selected elephant passages and their adjacent stations and review of records, audit observed the following:

- Forest Departments had posted elephant trackers at field. They had also posted their staff in the divisional control office in two zones (ECoR and NFR) to co-ordinate with Railway on real time basis. Information from the field (elephant trackers) about movement of elephant near the tracks was transmitted to stations through section controller and speed restrictions were being imposed accordingly. However, no such arrangement was made in other six Zonal Railways.
- In SR, Divisional Railway Manager, PGT complained to the Chief Conservator of Forest/ Coimbatore about instances (July 2016, July 2018, August 2018 and December 2018) of roaming of elephant near the Railway track. These were noticed by the Railway authorities. The elephant trackers were supposed to pass on the information regarding movement of elephants near the track to the Railway Authorities. However, no such information was passed on to Railways by the trackers. The Railway officials on their own proactively intervened and imposed speed restriction to prevent any unusual incident.

[37] Circulated to all Zonal Railways vide letter No. 2011/TT-IV/13/5-Part-II dated 21 December 2018

- Separate VHF set/Pairing of VHF with Forest officials should have been done with the stations adjacent to all the notified 77 elephant passages. However, during joint inspection, it was noticed that in respect of 64 elephant passages, no such provision was made.
- In four Railways (ECoR, NFR, SER and SWR), Whatsapp groups were formed by the official of Forest Department and Railway officials for sharing of information on movement of elephants near the track. In the remaining four Zonal Railways (SR, NR, ECR, NER), no such arrangement was made.

Thus, the deployment of elephant trackers by Forest Departments in elephant passages of Indian Railways and their communication with Railway Authorities was not effective.

f) Keeping Railway Track free from food waste that attract elephants

The MoR, in its circular, advised (30 March 2010) IRCTC/pantry car staff not to throw the edible waste in the vulnerable area. Announcement will be made at the stations located near vulnerable locations advising the passengers not to throw food waste.

The implementation of the above advisories was test checked in the selected passages/Zonal Railways and the following observations are made:

- Three Zonal Railways (ECoR, SR and NR) advised IRCTC/Pantry staff to keep Railway tracks free from food waste that attracts wild animals to tracks. No such advisory was issued in the remaining five Zonal Railways.
- In NFR, during joint inspection, banner/poster for awareness of passengers not to throw edible items on tracks in vulnerable sections was found. However, during joint inspection, food waste items were found thrown near the track at elephant corridors near Alipurduar Junction and Siliguri Junction stations from where many trains originate. In other seven Zonal Railways, no banners/posters for awareness of passengers were found.

Thus, the steps taken to keep the track free from food waste were not effective.

g) Installation of Honey Bee Sound Device

Railways have taken an initiative to install device near the Railway tracks for sounding the buzz of swarming honey bees. These are audible from a distance of 700 metre in order to keep elephants at a distance from the Railway track. Therefore, elephants present within a distance of 700-800

metre can easily hear the sound of this device. This prevents them from coming near the Railway tracks and being killed.

The aspect and effectiveness of installation of the Honey Bee Sound Device in the selected elephant passages was examined. It was noticed that Honey Bee Sound Devices were installed at 51 locations[38] of five Zonal Railways. The system of installation of Honey Bee Sound Device has not been adopted till date by three Zonal Railways (ECR, NER, SER).

Figure 2.21: ECoR: Honey Bee Sound Device installed at LC No. CT-44 in Dhenkanal-Sadashibpur section

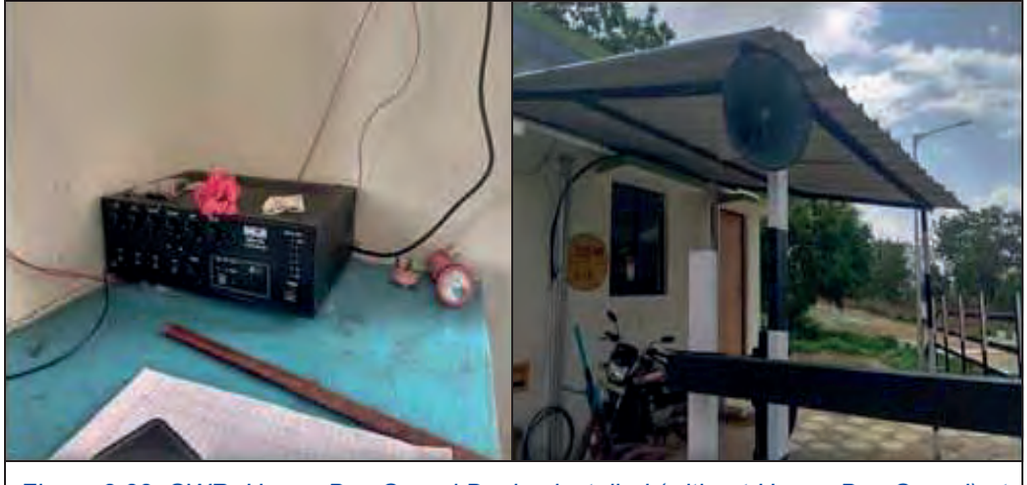


Figure 2.22: SWR: Honey Bee Sound Device installed (without Honey Bee Sound) at L.C. Gate location Km.529/4 in Hubballi-Londa Section

[38] NFR-43, SWR-3, NR-3, ECoR-1 and SR-1

Figure 2.23: SR: Honey Bee Sound Device equipment installed at LC No. 154 (A line) between Walayar and Kanjikode

Out of 51 installed Honey Bee Sound Devices, the effectiveness of the devices installed at 28 locations[39] was examined by Audit and the following observations are made:

- In NFR, out of the 43 installed Honey Bee Sound Devices, 20 Devices in selected elephant passages were test checked in Audit. It was observed that seven Devices were functioning with direct power supply with no battery backup. Seven Devices were running with power supply and battery backup and two Devices were running only with battery. Three Devices were lying unused due to want of power supply and one Device was not found in the allotted place Level Crossing (LC) Gate No. RM 107.
- In ECoR, as a Pilot measure Honey Bee Sound Device was provided at LC No. CT-44 between Dhenkanal - Sadashibpur stations of Khurda Road division. During joint inspection of LC No. CT-44, it was found that the Device was not functioning.
- In SR, out of six LCs in identified passage section, Honey Bee Sound Device was installed only in one LC (LC No. 154, Chullimada Gate) in the Line A between Walayar and Kanjikkod.
- In SWR, the Devices were installed at three locations over Hubballi-Londa and Londa-Miraj Sections. However, the Devices were

[39] 20 Devices in NFR and all Devices in ECoR, SR, SWR and NR

ineffective as the mp3 file (software producing the Honey Bee Sound) was not provided for the Devices.

- In NR, out of 16 locations, as a pilot measure Honey Bee Sound Device was provided in only three locations at Kansrao, Raiwala Jn. (both gates-19/AC and 20) and Motichur Stations in October 2018. In the remaining 13 locations, Honey Bee Sound Devices were not provided.

Thus, the purpose of procurement and installation of Honey Bee Sound Device did not yield the desired results.

h) Barricading/Solar Fencing Lighting along the Railway Track

Creating barricades using old rails and solar fence lighting along Railway tracks were also mentioned as short term measures to obstruct elephants from coming to tracks. Barricades may also help to direct the elephants or channelize their movement towards an underpass/overpass or less accident prone stretch. Lighting along the Railway track on vulnerable stretches with the lights directed at right angles away from the track were also recommended to deter the elephants from approaching the Railway track at night.

This aspect was test checked in the selected elephant passages and it was observed that:

- Barricading along Railway tracks was made only in one location between Sonua-Manoharpur of Chakradharpur Division of SER. During the joint inspection, it was noticed that a portion of the same was broken. In respect of the two Road Over Bridges constructed in Koderma-Garwa Road section of ECR, barricading had not been done alongside the Railway tracks to channelize the movement of wild animals including elephants across the Railway tracks.

Figure 2.24: SER: Broken Rail barricades at SWR-MOU section of Chakradharpur Division

- Solar fencing was installed in four locations (NER-1, SER-1 and SR-2). ECoR Administration intimated that Solar fencing was installed by the Forest Department along Railway tracks between Rambha and Humma stations of Khurda Road Division. However, during joint inspection, it was noticed that the solar fence along with battery and solar panel had been removed from the site by the Forest Department.
- Lighting along the Railway track on vulnerable stretches was provided in four locations between Walayar and Kanjikkode section of SR.
- In ECoR, Forest Department of Odisha had sought permission in January 2019 from ECoR for installation of solar fencing in three stretches along Railway track in Dhenkanal Forest Division. However, the same was not finalised.
- In NFR, Railway Administration had submitted two proposals[40] to the Conservator of Forest, Sonitpur and Chief Conservator of Forest, West Bengal for rail fencing in December 2018 and April 2017, respectively. This was to channelize the elephant movement. No further action was taken either from Railway or from State Government till date.
- In NR, an estimate of a fencing work[41] along the track was prepared by the Divisional Railway Manager/Moradabad for ₹ 22.60 crore. The proposal was forwarded (March 2017) to Director of Rajaji Tiger Reserve Forest, Dehradun to provide funds for execution. However, the forest officials were yet to accept the proposal.
- In SR, two estimates[42] were prepared by Railway for provision of rail fencing in the section of Walayar-Kanjikode and Madukkarai-Walayar stations. These were submitted to State Forest Department of Kerala (November 2017) and Tamilnadu (November 2012) respectively. However, no progress was noticed in this regard either from Railway or from the Forest Department.
- In SWR, a proposal of ₹ 24.67 crore for fencing on both sides of identified locations over three Divisions was sent to MoR in June 2018.

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[40] between KM 101/0-132/0 in RNY- RPAN section and Rail fencing at Level Crossing No. SK/171 at Km 69/3-4 to Bridge No. 158 (River Jaldhaka) at Km 72/8 on both sides of the track

[41] Providing fencing around Railway track in between MOTC-DWO on DDN-RWL section

[42] (i) Rail fencing for a length of 20 km in the A&B line for ₹ 18.15 crore on deposit terms. Out of 20 Kms, construction of rail fencing along the B line for a length of 5.35 Km for ₹ 8 crore was sanctioned by the Government of Kerala and SR had agreed (November 2017) to waive the supervision charges (12.5 *per cent*) for the deposit work. (ii) Provision rail fencing and widening cutting between Madukkarai-Walayar stations (A-B lines) to Chief Conservator of Forest, Tamilnadu for ₹ 25.08 crore on deposit terms

However, no response from MoR/further pursuance from SWR Administration were noticed.

Thus, works of barricading/fencing along the Railway tracks to safeguard the wild elephants from collision with trains were not adequately executed in the Zonal Railways.

2.1.7 Coordination between Railways and Forest Department Officials

The Committee to evolve action plan for eliminating elephant mortalities due to train hits recommended to form co-ordination committee between State/District level forest officials and Zonal/Divisional Railway officials. This would ensure better co-operation and exchange of information between Railways and Forest officials, and prevent elephant casualties. The Committee would conduct periodic review of the agreed actions between Railways and Forest officials about the vulnerable locations and length of speed restrictions. They should also plan site specific short and long term mitigation measures. During the review, audit noticed the following:

- In ECoR and NFR, regular meetings with forest official at various levels were conducted. During the period under review, total 40 meetings (eight at Zonal level and 32 at Divisional level) were conducted between Forest and Railway officials of ECoR. Similarly, total 26 meetings (one at Zonal level and 25 at Divisional level) were conducted in NFR. In SER, regular meetings were held only in 2018-19.
- In respect of other five Zonal Railways viz. ECR, NER, NR, SR and SWR, co-ordination meetings with forest officials were not conducted/ seldom conducted.

Exchange of information is essential for these Zonal Railways for reducing elephant mortality on tracks.

2.1.8 Conclusion

The MoR and MoEF had jointly initiated measures to prevent train accidents involving elephants. Short and long term measures were formulated to prevent elephant mortality. However, elephants continued to die on tracks. During 2016-17 to 2018-19, train collision resulted in death of 61 elephants. Precautionary measures like speed restriction were not being enforced in the notified elephant passages. Forest Department and Railways have not given priority to construction of underpass/ overpass across Railway tracks. Signage boards placed in notified elephant passages to warn the drivers were not standardized.

Honey bee sound devices were not installed in three Zonal Railways (ECR, NER and SER). The works of barricading/fencing along Railway tracks were not taken up. Co-ordination meeting between Forest and Railway officials was not a regular feature.

2.1.9 Recommendations

- ***Identification and notification of elephant passages should be reviewed periodically in consultation with the Forest Department. This will help in identifying changes in migration patterns.***
- ***Sensitising programme/ awareness workshops should be conducted for Station Masters/Train drivers/Guards to sensitise them about elephant conservation.***
- ***The signage boards to warn the drivers should be standardized w.r.t. colour, shape, height, placement, position etc.***
- ***Modern devices such as Radio-Frequency Identification (RFID) tag, Animal Detection System (transmitter collars) etc. that signal elephant presence from a safe distance could be used, as signage boards are not visible in fog/ rainy season/night time.***
- ***Honey Bee Sound Devices should be provided near all the identified elephant passages as advised by the Ministry of Railways.***

The matter was taken up with MoR in September 2020; no reply was received (February 2021).

2.2 *Security risk due to inordinate delay in installation of "Integrated* Security *System": East Coast Railway*

All components of 'Integrated Security System' (ISS) were not installed and the System Integration with control room as envisaged in the contract was not achieved. East Coast Railway neither took any action against the defaulting firm nor reported the progress/difficulties in installation of ISS equipment to Ministry of Railways. In absence of System Integration, security risk persists in the four stations of ECoR.

Ministry of Railways (MoR) instructed (September 2008) all Zonal Railways to implement 'Integrated Security System' (ISS) for better security to passengers and to guard the Railway installations. East Coast Railway (ECoR) included ISS project for four[43] stations in the Works

[43] Bhubaneswar, Puri and Cuttack stations of Khurda Road Division and Visakhapatnam station of Waltair Division

Programme (2009-10). Accordingly, a contract[44] was awarded in July 2012 to M/s Central Electronics limited (CEL) at a cost of ₹ 7.89 crore (subsequently revised to ₹ 7.99 crore in September 2014). The scope of work[45] included installation of Closed Circuit Television (CCTV), Under Vehicle Surveillance System (UVSS), Baggage Screening System, Explosive Detection/Disposal System *etc*. Three years warranty of equipment and four years Annual Maintenance Contract thereafter was mentioned in the Revised Inspection Policy and Tender Conditions.

Audit analysed the progress of implementation and effectiveness of ISS in ECoR and observed the following:

- Installation of ISS in ECoR was planned to be completed by May 2013. However, as on March 2019, it had achieved a physical progress of 65 *per cent* and financial progress of 39.98 *per cent* (*₹* 3.12 crore) despite provision of fund. During the period from May 2013 (scheduled date of completion) to March 2019, 21 extensions were granted to the firm without imposing any penalty.
- Out of the four UVSS, only two UVSS system had been installed in Cuttack/Visakhapatnam in June 2018/October 2018 after a delay of five years[46]. The other two UVSS system were not installed in Bhubaneswar/Puri till March 2019 due to non-completion of civil engineering works.
- Instead of providing 36 months' warranty from date of installation of UVSS as per the contract, warranty of only 30 months was given from the date of purchase of the four UVSS (i.e. from 24 August 2017 to 23 February 2020). By the time installation would be done, more than half of the manufacturer's warranty period would have lapsed. The UVSS installed at Cuttack station in June 2018 became out of order after two days of commissioning and had remained unserviceable for 170 days out of 279 days[47].
- There was delay ranging from 12 months to 67 months in supply and installation of equipment. Delay in installation of ISS equipment can be attributed to various reasons such as (i) delay of seven months by the firm in commencement of work; (ii) not ensuring timely supply of equipment; (iii) supply of equipment not conforming to RDSO specification; (iv) grant of multiple time extensions by ECoR without

[44] For supply, installation, testing and commissioning of ISS in Bhubaneswar, Puri, Cuttack and Visakhapatnam stations.
[45] Installation of CCTV surveillance comprising of 141 cameras, four UVSS, four X-ray baggage scanners, eight Door frame Metal detectors, 40 Hand held metal detectors, four Explosive detection system and 42 Explosive disposal system along with system integration
[46] 2013 - Schedule date of completion to 2018 - Actual date of installation
[47] From the date of installation *i.e*. 26 June 2018 to 31 March 2019

penalty and (v) technological advances during the period of delay leading to change of specification, make and models of equipment.

- As of March 2019, out of four Explosive Detection System and 42 items of Explosive Disposal System, only 18 items[48] were supplied and 28 important items were yet to be supplied/installed. The contractor requested (August 2015) the Railways to delete the balance items of Explosive Detection and Disposal System. After a lapse of almost four years, Principal Chief Signal and Telecom Engineer wrote (April 2019) to the Principal Chief Security Commissioner to delete those items. The Security Department (September 2019) had objected to the proposal of short closure citing that time is the essence of the contract. Before short closure, actions under clause 1.33[49] were necessary. It was further stated that installation of Explosive Detection and Disposal System (EDDS) was still required.
- Due to delay in installation of ISS, the System Integration with control room as envisaged in the contract was not fully achieved. Security risk could not be eliminated due to non-completion of the ISS.
- In response to MoR's query (December 2015) on poor performance of CCTV systems, ECoR Administration intimated (January 2016) that there was no such complaint. However, Odisha Railway Police informed (August 2016) that they were facing difficulties in investigation of cases because the pictures captured on cameras were not helpful in recognition of suspects. The same problem was also noticed in the joint inspection of equipment (October/November 2018). In none of the stations, preservation of CCTV footages for past 30 days was being ensured[50]. CCTV Surveillance System at all four stations of ECoR were not fully functional/do not cover all the areas[51] of station as prescribed in MoR's circular of 2008. Even though the equipments were under warranty, the failure of equipment was not rectified by the firm immediately after being reported[52].

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[48] Drilling machine, water cannon, hook and line kit, thermal cutter *etc.*

[49] Chapter-X, Special Conditions of Contract (Part-II)

[50] In violation of MoR's circular dated 24 September 2008

[51] Important area like upper class waiting rooms, Sleeper Class Waiting hall at Puri and Bhubaneswar stations were still not covered under CCTV surveillance. Quality of CCTV footage was not satisfactory/not giving clear picture, CCTVs were not manned regularly, *etc*.

[52] Several correspondences were made to M/s Central electronics Ltd. regarding frequent failures of ISS equipments (17 October 2017, 12 October 2017, 4 April 2016, 20 August 2016 *etc*.)

- As per MoR's instruction[53] (May 2012) any failure(s) exceeding 12 hours should be reported on daily morning basis. However, no such compliance was sent to MoR.
- Delay in supply/installation of some of the ISS equipment defeated the purpose of installation of this security system. Due to fire incident[54], in addition to the panic caused to the public on the platforms, Railway sustained a loss of ₹ 1.05 crore and ₹ 0.44 crore respectively[55].
- The contractor was responsible for non-supply of materials and installation thereof. From the Railways side, the Supervising Officers[56] were also responsible for not taking appropriate penal action against the defaulting contractor.

The delay in supply, installation and commissioning of ISS was brought to the notice of MoR in November 2019. MoR, in its reply, stated (November 2020) that:

(i) Ninety *per cent* of physical progress was achieved till March 2019.
(ii) Since there was no approved vendor and testing facility in RDSO, the firm could not supply BDDS items. The major portion of the work was completed by the firm except BDDS items for which the firm stated that they were not in a position to supply the same.
(iii) Provision for UVSS Goomty was not made in the estimate. However, the same was constructed later. This resulted in delay in commissioning of UVSS.
(iv) As per terms and conditions of contract, the warranty of all the items was 36 months from the date of installation. The firm had also maintained the same.
(v) The CCTV system was provided as per contract terms and conditions and with RDSO specifications. The CCTV system is running effectively since 2014.

The above reply of MoR was not acceptable in view of the following:

(i) As per Indian Railways Projects Sanctions & Management (IRPSM), physical progress was 65 *per cent* in March 2019. Schedule-D (Explosive Detection and Disposal System), Schedule-E (System

[53] MoR's letter No.2010/tele/9(1)/1 dated 11 May 2012.
[54] Fire incidence happened in Puri Station twice (November 2015 and March 2019). Puri is the most important pilgrimage station of ECoR. It handles millions of passengers throughout the year especially during the Rath Yatra festival.
[55] Eleven coaches of three trains were damaged.
[56] Dy. Chief Signal and Telecom Engineer (Project) (Dy CSTE-Project) and Principal Chief Signal and Telecom Engineer (PCSTE).

Integration) and two UVSS of Schedule-B had not been installed/ completed till March 2019.

(ii) The reply that no vendor was approved by RDSO and there was lack of testing facilities in RDSO as a result of which the firm could not supply BDDS items was not acceptable. The firm had expressed their inability to supply the BDDS items in August 2015 and Railway did not take any appropriate steps in this regard from 2015 to 2020. Moreover, Principal Chief Security Commissioner had stressed upon imposition of penalty. However, Railway's reply was silent on imposition of the same.

(iii) The commissioning of UVSS was delayed due to improper estimation and not taking timely action by the Railway Administration.

(iv) As per the warranty certificates given with the UVSS, the period of warranty was mentioned as 30 months.

(v) Incidences of breach of security occurred at the station and complaints received from Odisha Railway Police about problems in recognition of suspects through CCTV footages also indicate that the quality of CCTV surveillance under ISS was not up to the mark.

Audit, noticed that ECoR neither took up these issues with RDSO nor reported the difficulties to MoR. In absence of System Integration, security risk persists in the four stations of ECoR.

2.3 Avoidable expenditure due to non-withdrawal of uneconomic/ experimental stoppages: North Eastern Railway

Failure of the Ministry of Railways to review and take a decision on withdrawal of uneconomic/experimental stoppages despite recommendations of North Eastern Railway led to an avoidable expenditure of ₹ 201.40 crore.

Ministry of Railways (MoR) issued guidelines for provision and withdrawal of stoppages of Mail/Express trains on experimental basis from time to time. As per provisions contained in MoR's letter (June 2005), the minimum number of tickets to be sold at a station so as to recover the cost of stoppage should be 40 (forty) or more for sleeper class per day per train for a distance of 500 Km or its equivalent. The MoR conducted cost analysis and revised (February 2016) the cost of stoppage of various categories of Mail/Express trains driven by diesel and electric locos. The cost of stoppage of Mail/Express trains with composition of 18 coaches were fixed as ₹ 23,578/- and ₹ 12,717/- for diesel loco and electric loco driven trains respectively. The Zonal Railways were instructed (June 2005) to review the stoppages for withdrawal and send recommendation to MoR after approval of the General Manager.

Subsequently, MoR directed (April 2017) NER to examine the utilization of each train where experimental stoppages had been provided. A detailed feedback was desired regarding 53 experimental stoppages of NER along with comments of Zonal Railways indicating desirability or otherwise for continuation of these stoppages.

In compliance of this, the NER Administration intimated (October 2017) to the MoR that the experimental stoppages provided at 43 stations were not commercially feasible. The NER accordingly requested MoR to take an appropriate decision regarding operation of these experimental stoppages. MoR, however, did not communicate their decision in this regard to NER and these stoppages were continuing till the date of audit (August 2019).

As per information made available (August 2019) by the Operating Department of NER to audit, there were 171 experimental stoppages as on 31 March 2019 which were continued. Audit analysed data relating to details of trains, experimental stoppages, number of passengers travelled, earnings and other relevant information in respect of all 171 experimental stoppages. Audit found that in 141 cases, the earning was far less than the cost of stoppages. As such, the Railway Administration had to suffer an avoidable expenditure of ₹ 201.40 crore **(Annexure 2.3)** during the period from 24 February 2016 (date of circular regarding revised cost of stoppages) to 31 March 2019. This was due to non-initiation of action at MoR level despite the requests made by NER for withdrawal of the experimental stoppages with less earnings. This also affected the Operating Ratio of NER to some extent.

On this being pointed out by Audit (August 2019), General Manager/NER stated (December 2019) that MoR directed (September 2014) that experimental stoppages provided on or after 30 September 2014 will continue. The MoR provided experimental stoppages based on requirement of passengers, demand by the Parliamentarians/ representatives of people and the sentiments of public. NER further stated that MoR was requested from time to time during September 2016 to October 2019 to withdraw the experimental stoppage with less earnings, no directions had been received so far from MoR.

The reply of General Manager/NER indicated that MoR did not take a decision on a commercial issue raised from time to time by NER Administration.

Thus, due to non-initiation of action by MoR to review the withdrawal of uneconomic/experimental stoppages despite recommendations/requests of the NER, Railways had to suffer avoidable expenditure of ₹ 201.40 crore.

The matter was taken up with MoR in August 2020; no reply was received (February 2021).

2.4 Loss due to non-collection of shunting charges and short realisation of demurrage charges: South East Central Railway

South East Central Railway did not levy shunting and demurrage charges at a private siding at Parsa (PSRS). This resulted in non-realisation of shunting charges of ₹ 38.58 crore and short realisation of demurrage charges of ₹ 17.24 crore.

Ministry of Railways (MoR)'s Rate Circular No.14/2009 stipulates that shunting charges are leviable for the utilization of Railways' locomotive to perform shunting operation at a siding, irrespective of the fact whether the siding is notified for charging freight on 'through distance basis'[57] or otherwise. Shunting charge is levied on the basis of actual shunting time and prevailing 'All India Engine Hour Cost (AIEHC)' for 'Train Engine' or 'Shunting Engine' as the case may be. All India Engine Hour Cost is circulated every year by MoR.

Shunting charges[58] should be calculated for the total time of availability of the train engine at the siding from arrival to departure. Charges will be levied for the total time even if shunting time is less than the total time during which train engine is available within the siding. If double/multiple Train Engines are utilized then shunting charge should be calculated for double/multiple Train Engines.

In May 2018, South East Central Railway (SECR) notified a private siding of M/s Sarguja Rail Corridor Pvt. Ltd./Parsa[59] which was served by Surajpur Road station (SJQ). The siding was notified for charging freight on through distance basis (Alpha code PSRS) and was to work under "Engine on Load[60]" (EOL) system. The layout drawing approved by the competent authority showed that there were two sections of Railway lines on this siding. One 'yard section' where empty rakes come and another

[57] As per Para 1805 of Indian Railway Code for Traffic (Commercial) Department, if goods traffic originates from or terminates at a siding with a railway locomotive and does not require a service station for receiving or dispatch of trains, the traffic is termed as 'through traffic'. In this case, Railway Administration would levy freight charges on 'through distance' basis up to the buffer end of the siding.

[58] Where the Train Engine is used for shunting on customer account.

[59] The siding was notified for outward traffic of coal rakes. Open rakes (BOXN, BOXHNL *etc.*) were used for loading of coal.

[60] Engine-on-Load scheme has been implemented for the better utilization of wagons and for quick transportation of goods. During the loading and unloading, the engine will remain in siding so that the train can be run immediately after the completion of these tasks.

'*Silo* section' where rakes are placed for loading and weighment. In *Silo* section there were two separate lines for loading operation and weighment operation.

Examination of Siding Register of SJQ revealed that the rakes were moved for weighment and thus shunting operations were conducted. Railway locomotives were also utilized beyond permissible time (ranged from one hour to 46 hours) for the shunting operations. As the siding was working under "EOL" operations, shunting (Engine hire) charges beyond permissible free time should have been levied. However, SECR did not levy the shunting charges amounting to ₹ 38.58 crore during the period from May 2018 to March 2019 on the siding authority.

Joint inspection[61] by Audit and Railway officials revealed that the loaded rake was being pulled up from loading line to yard section by shunting operation of train engine of the Railways. Further, the rake was pushed back to weighment line of *Silo* section. The entire operation was done through shunting operation by Railway locomotives (two electric engines were required for operation as it was a gradient section).

As Para 4.1.10 of Rates Master Circular/provision of weighbridge (June 2014), stipulates that if the weighbridge is installed by siding owner in their siding premises, no extra free time will be admissible for the purpose of weighment and demurrage charges for detention of wagon shall be leviable.

In contravention to the above circular, time from completion of loading to completion of weighment was not being taken into account during calculation of detention period for preparation of demurrage bill of the siding. The rakes were detained on account of siding authority for the time from completion of loading to completion of weighment of rake. Accordingly, the demurrage charges should have been levied for excess detention period of rake from placement to release *i.e.* the time from placement to completion of weighment of rake. Release time for calculation of demurrage should be reckoned up to the time of completion of weighment of the rake. This resulted in short collection of demurrage charges to the tune of ₹ 17.24 crore during the period from May 2018 to March 2019.

Thus, due to non-adherence to MoR's circulars, SECR could not realize applicable shunting and demurrage charges to the tune of ₹ 55.82 crore (Shunting Charges - ₹ 38.58 crore and Demurrage Charges - ₹ 17.24

[61] of the operations in the PSRS Siding in December 2018.

crore) from the PSRS siding during the period from May 2018 to March 2019.

The matter was taken up with MoR in May 2020; no reply was received (February 2021).

2.5 Loss due to ineffective implementation of Engine-on-Load scheme: West Central Railway

Railway Administration failed to effectively implement the Engine-on-Load scheme which was introduced to improve utilization of rolling stock. The engines were detached from the rakes after their placement in the sidings. As a result, the rakes were detained in the sidings due to unavailability of engines. Detention of the rakes resulted in potential loss of earning capacity of wagons to the tune of ₹ 14.51 crore.

In order to improve utilization of rolling stock and help the customers in prompt clearance of freight trains from the sidings/terminals, Ministry of Railways (MoR) introduced (March 2013) Engine-On-Load (EOL) scheme.

Under the EOL scheme, train engine will remain available during loading or unloading operations in the siding and wait on Railways' account so as to work the train immediately after loading/unloading operation is completed. The siding owners will be required to opt for the EOL operations under an agreement with the Zonal Railway Administration. They should develop facilities for loading and unloading on EOL concept and design yard layouts to facilitate the same. Under the scheme, siding owners were allowed to utilize the train engine during prescribed free time for loading/unloading of the rake without any additional charges. However, beyond free time, engine hire charges shall be charged as per extant rules.

During review of records of four sidings[62] in West Central Railway (WCR), it was noticed that these sidings had opted for EOL scheme. Audit observed that

- In deviation to EOL scheme, train engines were detached and removed from the rakes after placement of rakes in the sidings. The engines were sent to serving stations or other stations. Thus, the rakes after their release (completion of loading/unloading

[62]Jai Prakash Venture Limited siding (JPVN) served by Niwas Road station, Jaypee Rewa Cement Plant Siding (JRCT) served by Turki Road station, Bina Refinery Plant Siding (BRSM) served by Mahadevkhedi station and M/s Reliance Cement Company Private Limited siding (RCPB) served by Bhadanpur station

operations) could not promptly commence journey from the sidings due to detachment/non-availability of engines. The very purpose of EOL scheme for improving utilization of rolling stock and prompt clearance of rakes from sidings was defeated.

- After completion of loading/unloading operations, the rakes were not removed from the siding due to non-availability of engine/crew. Thus, the rakes were detained in the sidings. The detention of rakes in the sidings was as under:

Detention	Name of Siding and No. of cases of detention of rakes					
	JRCT (January 2016 to June 2018)	BRSM (March 2015 to December 2018)	JPVN (February 2015 to February 2018)	RCPB (December 2016 to July 2018)	Total	
1 to 5 hrs.	309	20	16	100	445	960
6 to 10 hrs.	182	8	16	64	270	
11 to 20 hrs.	139	1	17	47	204	
21 hrs. and above	26	0	4	11	41	
Details Not Available	9	240	54	46	349	349
TOTAL	**665**	**269**	**107**	**268**	**1,309**	**1,309**

Detention of rakes in the sidings was up to 32 hours. Consequently, Railway suffered loss of earning capacity of wagons detained amounting to ₹ 14.51 crore[63]. Audit could not work out the loss of earnings in respect of 349 cases as date and time of departure of rakes from the sidings were not available on records.

Matter was taken up with the Commercial Authorities in April 2017 and May 2018. In reply (June 2018), it was stated that supply of empty and removal of loaded rakes from these terminals was with different power (engine) to avoid excessive idle detention of engine inside the siding. Commercial Authorities further stated that instructions had been issued to Chief Controller/Jabalpur to retain the engines as far as possible. However, this was subject to suitability of power and availability of crew with incoming load at all terminals, where EOL scheme was implemented.

Railway Administration's reply regarding use of different locos while supplying of empty and removal of loaded rakes from these terminals was in violation of EOL scheme. Audit reviewed the position in June 2019 and

[63]JRCT - January 2016 to May 2018 - 656 Rakes (₹ 9.73 crore), BRSM - March 2017 to December 2018 - 29 Rakes (₹ 0.34 crore), JPVN - February 2015 to February 2018 - 53 Rakes (₹ 1.18 crore) and RCPB - January 2017 to July 2018 - 222 Rakes (₹ 3.26 crore).

noticed cases of detachment of engines in spite of instructions issued by Deputy Chief Operations Manager/WCR.

Thus, WCR Administration failed to effectively implement the EOL scheme and achieve the main objective of the scheme i.e. to improve the utilization of rolling stocks. This resulted into detention of rakes in sidings after completion of loading/unloading. Railway suffered loss of earning potential of ₹ 14.51 crore of these wagons.

The matter was taken up with MoR in May 2020; no reply was received (February 2021).

2.6 Loss of revenue due to delay in issue of rationalization scheme notification: South Central Railway

Delay by the Zonal Railway Administration in initiating the Rationalization proposals with the Ministry of Railways resulted in loss of revenue of ₹ 8.15 crore. Also, delay in notifying an en-route siding for higher permissible carrying capacity resulted in further loss of revenue of ₹ 1.61 crore.

Indian Railways (IR) Tariff Rules[64] provide that goods will normally be dispatched by route operationally feasible and freight will be levied for the shortest route. However, goods can be carried and charged by an operationally convenient specified route even if it is not the shortest route[65]. In view of such provision, Ministry of Railways (MoR) issues from time to time General Orders under the Rationalization Scheme to notify specific routes for carrying as well as charging freight between originating and destination points and vice versa.

With a view to maximize the freight earnings MoR decided (September 2014) to declare/notify certain routes[66] of IR to transport commodities in Goods trains having wagons loaded upto four/six/eight tonnes in excess of their marked Carrying Capacity(CC). This increases the freight earnings by way of enhanced loading of commodity in each wagon.

Audit noted that goods movement to Bibinagar (BN) destination from Vijayawada side were routed through a longer route via Kondapalli (KI) – Motumarri (MTMI)-Kazipet (KZJ), say sector **A**. This route was notified for

[64] Rule 125 (I) of IRCA Goods Tariff Part I Vol I
[65] Rule 125 (III) of IRCA Goods Tariff Part I Vol (I) read with Section 71 (1) (b) of Railways Act 1989
[66] All traffic in the route via Nallapadu-Nadikudi- Bibinagar and vice versa to be routed via Kondapalli-Kazipet or vice versa

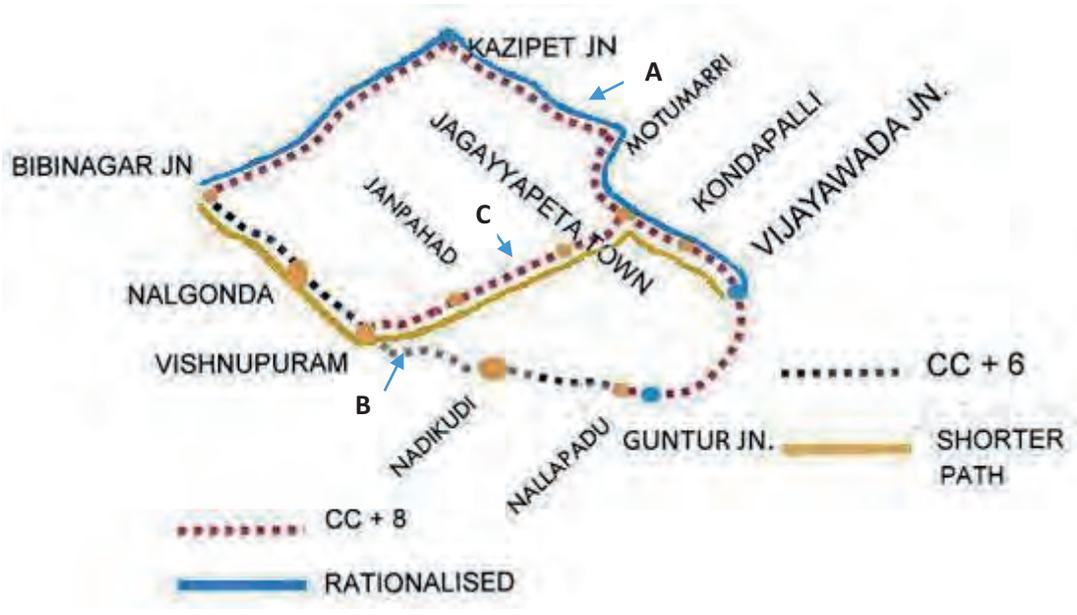
carrying eight tonnes[67] more than the carrying capacity. Freight trains used sector **A** instead of Nallapadu (NLPD)-Nadikudi (NDKD)-Bibinagar (BN), say **Sector B** the shorter route as it was prone to congestion being a single line and non-electrified route. The Sector B was capable of carrying freight of six tonnes[68] more than the carrying capacity. The routes are shown in the following diagram:

Routes with Capacity (Before 19 July 2017)

In July 2017, a new line was established joining Vishnupuram (VNUP) on Sector **B** to MTMI on Sector **A**. This is referred to as Sector **C** and had the capacity of carrying eight tonnes more than the carrying capacity**.** For goods movement to and from Vishnupuram (On sector B) towards Bibinagar/ Vijaywada using Sector **C** became shorter route. However, the carrying capacity from Vishnupuram to Bibinagar was six tonnes more only and not eight tonnes. This route required rationalisation thus enabling IR to carry two more tonnes per wagon extra over the carrying capacity. The revised/ new routes are shown in the following diagram:

[67] CC+8
[68] CC+6

Routes with Capacity (After 19 July 2017)



Audit noted that that even after **Sector C** became operational, SCR Administration did not initiate proposals for Rationalization scheme. In the absence of rationalization, Rates Branch System[69] (RBS) calculated the shortest path for revenue. As a result, freight charges were collected for shorter route only though the goods were carried through the longer route. This implied that the railways carried lesser freight by two tonne per wagon resulting in loss of revenue.

Audit also noted that the Commercial Department of East Coast Railway had reported the loss of revenue to SCR /MoR on account of not notifying **Sector C** under rationalization scheme. **Sector C** was rationalized[70] by MoR in February 2019 for goods movement. Thus, there was a delay of eighteen months (August 2017 to January 2019) in the issue of notification for the rationalization by MoR. This delay by MoR led to loss of revenue of ₹ 8.15 crore.

In addition, notification from MoR is required to declare en-route sidings at enhanced carrying capacity[71] i.e higher load. Audit however noted that the sidings[72]at Vishnupuram were not notified for handling higher load.

[69] RBS is a software that helps IR to find the shortest distance between pair of points.
[70]General Order No 1/2014 declaring that route via Kondapalli-Motumarri- Kazipet is the rationalized route for the shorter route of Vishnupuram- Bibinagar. The goods will be charged via Kondapalli- Motumarri- Kazipet instead of Vishnupuram-Bibinagar.
[71]Increasing the Carrying Capacity of each wagon by two tons i.e from CC+6 to CC+8
[72]M/s India Cements Ltd Siding

Railway Administration notified this siding for enhanced carrying capacity only with effect from 12 June 2018.

The delayed notification for the sidings resulted in freight revenue of lesser load by two tonne per wagon during 22 July 2017 to 8 June 2018. This resulted in loss of revenue of ₹ 1.61 crore.

The issue was raised with the MoR in April 2020. In reply, MoR stated (July 2020) that the Rates Branch System (RBS) software applied the Permissible Carrying Capacity (PCC) of CC+6 route for entire traffic. As per Rule No. 125 of Goods Tariff of Indian Railways, the shortest path is selected. Hence, there is no loss of two tonne per wagon. Rationalization is done on operational grounds and not on Commercial grounds. Commercial implications are only incidental to rationalization but not the reason for rationalization.

The reply of MoR was not convincing. Revenue maximisation based on optimum capacity utilization is one of the main objective of the Rationalisation scheme. Further, the revenue loss occurred clearly due to delayed action on rationalization by the SCR Zonal administration.

2.7 Loss of revenue due to failure in fixing the reserve price according to the last accepted rate: Eastern Railway

Failure of the Railway Administration to fix the reserve price as per the available trend resulted in delayed award of contract and loss of opportunity to earn the required revenue.

Ministry of Railways (MoR) issued (April 2014) modified policy guidelines on "Comprehensive Parcel Leasing Policy" for leasing out of parcel space of the Assistant Guard's cabin (AGC), Brake Vans (SLRs) and Parcel Vans (VPHs/VPs/VPUs)". This was in supersession of all previous instructions issued on the subject.

Commercial Department of Howrah Division in Eastern Railway (ER) invited (April 2018) a composite tender for leasing four number of VPs (23 tonnes) on round trip basis in three different trains[73]. During May 2018, for Train No 13007/13008 – Udyan AbhaToofan Express between Howrah - Sri GangaNagar - Howrah, a solitary offer from M/s Chennai Super Kings Express (M/s CSK) was received. The offer of M/s CSK was for ₹ 2,70,999/- against the reserve price of ₹ 2,43,504/- per round trip. The Tender Committee, in its recommendation, stated (July 2018) that for the

[73] Train No. 13007/13008-1 VP, Train No. 13005/13006-1 VP and Train No. 13049/13050-2 VPs

same train another lease contract allotted by North Western Railway (NWR) was in existence from March 2018 for a period of five years at ₹ 3,03,403/- per round trip. Hence, the Tender Committee recommended that one round of negotiation be held with a view to explore the possibility of enhancing the bid amount per trip. M/s CSK was called for a negotiation in August 2018 and in the negotiation, the party offered the rate of ₹ 2,73,550/-. A counter offer of the existing rate (₹ 3,03,403/- per trip) entered by NWR was offered (October 2018) to M/s CSK, which was refused (November 2018) by the party. The tender was discharged and communicated to the party.

M/s CSK filed a writ petition (WP No. 23261 (W) of 2018 followed by MAT 68 of 2019 with CAN 530 of 2019) in the Hon'ble High Court of Kolkata. The Hon'ble High Court while discharging the petitions directed (February 2019) the parties for a negotiation as both were willing to negotiate. In the negotiation meeting held in April 2019, the party quoted the offer of ₹ 2,73,750/- per trip. The revised quote offered by the party was recommended by the Tender Committee in its meeting held on 14 May 2019 and was accepted by the accepting authority on 23 May 2019. The agreement was executed in June 2019 for five years (20 June 2019 to 19 June 2024).

Audit observed that the Railway Administration had fixed the reserve price at ₹ 2,43,504/- per round trip. However, at the time of floating the tender in April/May 2018, NWR had already entered for a separate contract for another VP in the same train at the rate of ₹ 3,03,403/- per round trip. The rate fixed by NWR Administration was also communicated in January 2018 to the Commercial Department of ER.

Thus, failure to fix the correct reserve price led to belated finalization and delayed the opportunity to utilize the vacant parcel van space in the train from August 2018 to June 2019. This also led to loss of opportunity to earn the revenue in the above period which was assessed by Audit as ₹ 8.84 crore. The loss would have worked out to ₹ 9.80 crore had the Railway Administration fixed the reserve price based on the existing contract awarded in NWR in March 2018.

The matter was taken up with the MoR in May 2020. The MoR, in its reply, stated (November 2020) that the reserve price was fixed by the Commercial Department with the vetting by Associated Finance. Further Para 52.3 of the Freight Marketing Circular No. 06 of 2014 was deleted by an amendment in Freight Marketing Circular No. 5 of 2016. Thus, the reserve price was fixed based on prevailing policy guidelines.

Audit had not raised the issue of Para 52.3 of the Freight Marketing Circular. The Railway Administration was aware of the price for the other Parcel Van which was awarded in NWR. Thus, price discovery was well established before the tender was invited. The Railway Administration should have taken a pragmatic decision in fixing the reserve price before the tender was floated. Hence, the reserve price fixed was not in the best interest of the Railway Administration.

2.8 Revenue loss due to non-levy of stabling charges: North Central Railway

Failure of Railway Administration to levy stabling charges for the CONCOR rakes stabled in railway premises resulted in loss of revenue of ₹ 7.84 crore.

Concession Agreement between Ministry of Railways (MoR) and Container Corporation of India (CONCOR-Concessionaire) for the operation of Container trains in the Indian Railways (IR) network was made on 4 January 2007.

Para 7.6.1 and 7.6.2 of the Concession Agreement between Indian Railways and CONCOR stipulate that Railways shall levy stabling[74] charges as per the rates notified from time to time in case rolling stock belonging to the Concessionaire is stabled on account of the Concessionaire on IR network.

CONCOR shall be liable to pay to Railway Administration stabling charges, in the following events: (i) In case the Concessionaire's Train suffers detention at the serving station for reasons attributable to the Concessionaire or when the Concessionaire either declines to accept wagons inside the Private Terminal, scheduled to be the terminating Private Terminal or is not in a position to receive placement of subsequent Wagons; or (ii) In case of non acceptance of trains inside any port by the port authority concerned; or (iii) At any of the stations en route due to any reason attributable to the Concessionaire, provided however that stabling charges shall be levied only where the detention of the Concessionaire's Train is for a period in excess of four hours.

The MoR revised (January 2008) the stabling charges at the rate of ₹ 300 per wagon per day or part of a day on detention beyond four hours with effect from 1 February 2008. Further, MoR vide their Rate Circular No. 5 of 2013 revised the stabling charges with effect from 1 April 2013. These

[74] Stabling means parking of wagons in the railway network.

charges were enhanced to ₹ 500 per wagon per day or part of the day from the time of arrival to the time of removal.

Audit carried out a review of levy of stabling charges of CONCOR at North Central Railway (NCR) in four locations viz. Kanpur Goods Marshalling (GMC), Malanpur (MLAR), Yamuna Bridge and Dadri serving for the Inland Container Depots[75] at ICDG, ICDM, ICDY and ICDD respectively. During the period from 2012-13 to 2018-19, there were cases (3281)[76] of non-levy of stabling charges in respect of the above four stations in NCR.

Audit analyzed the detentions and after allowing a free time of four hours as stipulated in the Agreement and observed that ₹ 7.84 crore[77] towards stabling charges was not raised and levied. Audit observed that the reason for the lapse was ineffective co-ordination between Railway and CONCOR. No monitoring mechanism was in place between the different departments of Railway which was also a reason for the non-levy of stabling charges.

The matter was taken up with MoR in September 2020; no reply was received (February 2021).

2.9 Non-levy of Service Tax on renting of space to vending contractors: Northern, South Eastern, North Eastern and East Central Railways

Divisional Railway Authorities failed to levy/collect Service Tax on renting of space for installing stalls at various stations in four Zonal Railways. This resulted in liability of ₹ 7.88 crore towards Service Tax along with penalties payable to Revenue Authotities. This constitutes an unwarranted expense.

As per provisions[78] made under Finance Act, 1994, renting of immovable property includes renting, letting, leasing, licensing for use in the course of furtherance of business or commerce and is liable to levying of Service Tax.

Licensing of space for vending stalls at various Railway stations falls under renting of immovable property and is a taxable service. In September 2012, Ministry of Railways (MoR) issued instructions to Zonal

[75]ICDG-Inland Container Depot Kanpur Goods Marshalling, ICDM-Inland Container Depot Malanpur, ICDY-Inland Container Depot-Yamuna Bridge,, ICDD-Inland Container Depot Dadri

[76]ICDG-780, ICDM-466, ICDY-21, ICDD-2014

[77]ICDG-₹ 2.02 crore, ICDM-₹ 1.09 crore, ICDY-₹ 0.05 crore ICDD-₹ 4.69 crore

[78]Section 65 (90 a) read with Section 105 (zzzz) of Chapter V of Finance Act, 1994

Railways for levy of Service Tax @ 12.36 *per cent*[79] in all cases of renting of immovable property with the exception of Negative List[80] and Exemption List[81]. In MoR's instructions ibid, it was clearly mentioned that Service Tax should be collected at the time of entering into transaction of renting/leasing of immovable property[82]. Rates of Service Tax[83]were revised from time to time.

During scrutiny of records relating to licensing of contracts for installing vendor stalls over Northern Railway (NR), audit observed that MoR's instructions for levy of Service Tax for providing space for installing vendor stalls were not being followed/implemented in four Divisions[84]. In Lucknow Division, Service Tax was, however, being levied/recovered from vending contractors.

Due to non-levy of Service Tax, a sum of ₹ 4.78 crore could not be recovered from the licensees/vending contractors for the period from October 2012 to June 2017. During test check, audit observed that after implementation of Goods and Services Tax (GST) w.e.f. 1st July 2017, the Railway Administration started levy/recovery of GST from the licensees/vending contractors in Firozpur, Moradabad and Delhi Divisions.

Matter was taken up with the Divisional Railway Authorities[85] in May 2017 (Firozpur Division), July 2017 (Moradabad Division), March 2018 (Delhi Division) and April 2018 (Ambala Division). In reply, the Divisional Railway Authorities stated (June 2018/October 2018/February 2019) that:

- Static catering units at Railway stations do not come under the purview of "Rental of Immovable property". These units were meant for providing catering services to the passengers without

[79]Para 2 and 6 of MoR's letter No. 2012/LML/25/15 dated 28 September 2012

[80]Negative List-Section 66D of Finance Act, 1994 specifies the Negative List of services i.e. services on which Service Tax is not leviable. As per MoR's letter dated 28 September 2012, services under Negative List relevant to Railways are (i) Renting of vacant land, with or without structure incidental to its use, relating to agriculture (ii) Renting of dwelling for use as residence (iii) Renting out of any property by a government or a local authority to a non-business entity.

[81]Exemption List-List of Services fully exempt from Service tax is notified vide Notification No. 25/2012 dated 20 June 2012**.** As per MoR's letter dated 28 September 2012, **s**ervices under Exemption List relevant to Railways are (i) Threshold level exempting up to ₹ 10 lakhs (ii) Renting of precincts of a religious place for general public (iii) Renting of a hotel, inn, guest house, club, campus or other commercial place meant for residential or lodging purposes, having declared tariff of a room below ₹ 1000 per day or equivalent, (iv) Renting to an exempt educational institution.

[82]Para 3(ii) of MoR's letter No. 2012/LML/25/15 dated 28 September 2012

[83]MoR's letter No.2016/AC-II/2/5 dated 20 June 2016 (Service Tax Circular No.1/2016)

[84]Delhi, Firozpur, Moradabad and Ambala Divisions - Service Tax not levied/recovered.

[85]Divisional Commercial Manager (DCM)/Delhi, Ambala, Moradabad and Firozpur Division

any agreement for renting/leasing/licensing of land to the catering vending licensees.

- As per Ministry of Finance, Department of Revenue Notification No.25/2012-ST dated 20 June 2012, service rendered by catering/vending licensees are exempted from Service Tax.
- Service Tax was not recoverable from any static catering unit as per MoR's order of April 2006.

The Divisional Railway Authority/Moradabad stated (May 2019) that there was no clear policy and directions on levy of Service Tax on Trolleys *etc*. Service Tax was not being levied on catering contractors in other Divisions (Delhi, Lucknow and Ambala) too. Until the clear instructions in this regard are received, Service Tax will not be levied in Moradabad Division.

Divisional Railway Authorities' reply is not acceptable in view of the following:

- Sub-section 41 of Section 65 (90 a) Chapter V of Finance Act, 1994 clearly states that "renting" means allowing, permitting or granting access, entry, occupation, use or any such facility, wholly or partly, in an immovable property, with or without the transfer of possession or control of the said immovable property and includes letting, leasing, licensing or other similar arrangements in respect of immovable property.
- Railways enter into formal agreements with vendors for licensing the space at railway stations. License fee is recovered by the Railways from the licensees.
- Para 19 of Ministry of Finance Notification of June 2012 pertains to services provided in relation to food or beverages by a restaurant, eating joint or a mess other than those having the facility of air conditioning or central air-heating in any part of the establishment at any time during the year is exempted from Service Tax.
- The MoR vide its order of April 2006 directed the Indian Railway Catering and Tourism Corporation and Zonal Railways to launch a special drive to stop the licensees from levying Service Tax on catering services from static units. Hence, MoR's order of April 2006 was not interpreted correctly.

Railway Authorities were responsible to collect Service Tax from the licensees (for installing vendor stalls at railway stations) and its remittance to Government's exchequer. They, however, failed to comply with the provisions of Finance Act as well as MoR's instructions on Service Tax.

This resulted into loss of ₹ 4.78 crore to Government exchequer. Railway Administration will have to pay the amount of Service Tax along with penalties from its resources as and when the Revenue Authorities serve notice to Railway Administration.

Issue of levy of Service Tax was examined in the other Zonal Railways. During test check, instances of non-levy of Service Tax from the licensees were also noticed in three Zonal Railways (SER, NER and ECR). Non-levy of Service Tax resulted in liability of ₹ 3.10 crore[86] payable to revenue authorities in these three Zonal Railways.

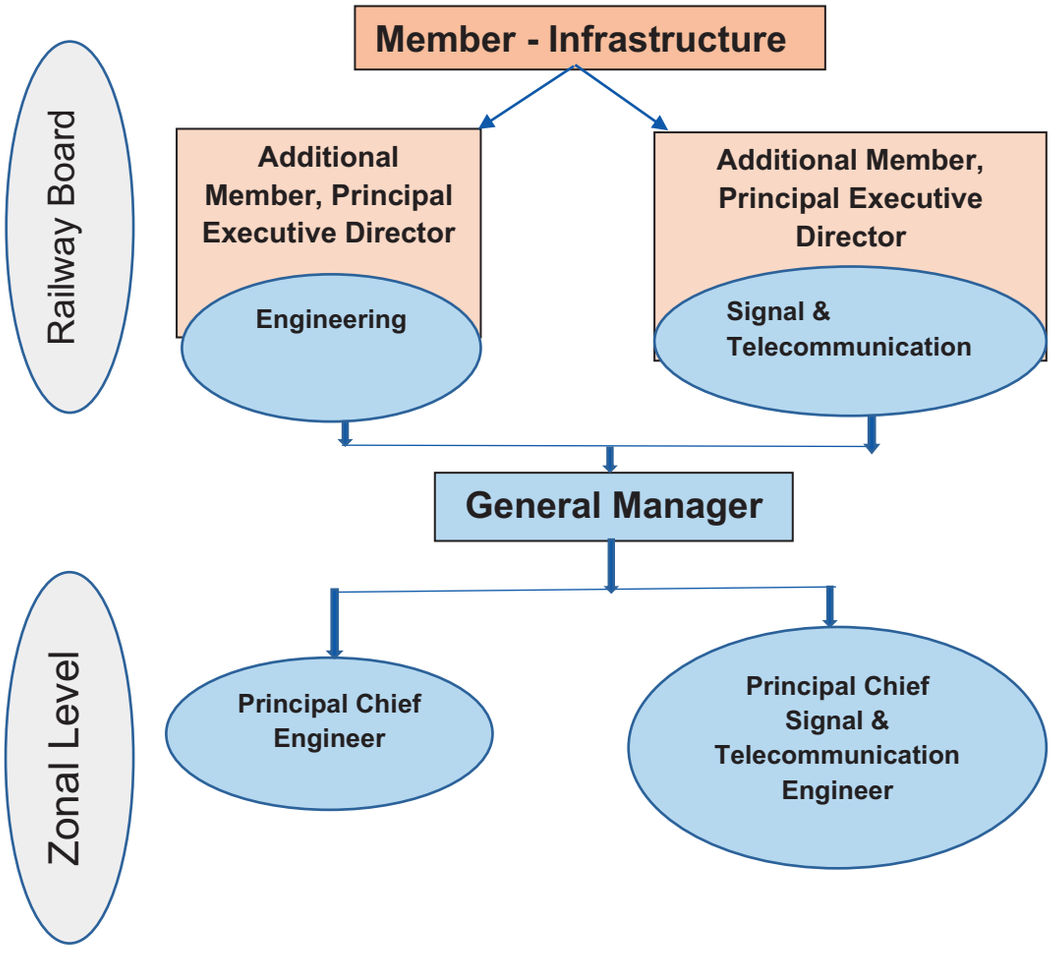
This would constitute an unwarranted expense of ₹ 7.88 crore due to non-levy and non-recovery of Service Tax from the vendors in the Railways.

The matter was taken up with MoR in March 2020; no reply was received (February 2021).

[86]SER (₹ 1.51 crore), NER (₹ 0.83 crore) and ECR (₹ 0.76 crore)

Chapter 3 - Infrastructure

Member (Infrastructure) at Railway Board is responsible for maintenance of all fixed assets of Indian Railways, such as, Tracks, Bridges, Buildings, Roads. In addition, he is responsible for construction of new assets, such as, new lines, gauge conversion, doubling and other expansion and developmental works. He is assisted by Additional Members and Principal Executive Directors.



At Zonal level, with the General Manager heading the Zone, the Engineering Department is headed by Principal Chief Engineer (PCE). He is assisted by various Chief Engineers for maintenance of Tracks, Bridges, Buildings, Roads *etc.* Each Zonal Railway also has a construction organization headed by a Chief Administrative Officer (Construction) who is responsible for major construction works of Zonal Railway. He is assisted by various Chief Engineers (Construction).

Member (Infrastructure) at Railway Board is also responsible for Signal & Telecom Departments of Indian Railways. The Signal & Telecom Directorate at Railway Board is responsible for all the issues regarding procurement, maintenance of Signal & Telecom Assets over Indian Railways. In the Railway Board, Member (Infrastructure) is assisted by Additional Member (Signal) and Additional Member (Tele).

At Zonal level, the Principal Chief Signalling and Telecom Engineer (PCSTE) is responsible for overall supervision and maintenance of S&T assets.

For enhancing efficiency and safety in train operation, modern signalling plays a very vital role. The Signalling Department handles induction and maintenance of signalling systems. The Telecom Department is responsible for telecommunication services in Railways.

In 2018-19, the total expenditure on repair and maintenance of assets[87] by Engineering Departments in Indian Railways was ₹ 22,931.84 crore[88]. Indian Railways also incurred an expenditure of ₹ 25,680.39 crore[89] on creation of new assets[90]. During the year, apart from regular audit of vouchers and tenders, audit of 1,876 offices of Engineering Department including Construction Organization was conducted.

The expenditure on repair and maintenance of plant and equipment of S & T Department during the year 2018-19 was ₹ 3,106.02 crore[91]. Capital expenditure of ₹ 1,537.78 crore was incurred on creation of S&T assets. During the year, apart from regular audit of vouchers and tenders, 389 offices of the S&T Department were inspected.

This Chapter includes a thematic para on 'Price Variation in Works Contracts in Indian Railways'. In addition, this Chapter includes nine individual paragraphs. These paragraphs highlight compliance issues that relate to construction and utilization of Limited Height Subways, land acquisition, delay in construction of Road Over Bridge, faulty planning in embankment work, wasteful expenditure due to award of signaling

[87] Permanent way and works, bridges, tunnels, roads, sanitation and water supply *etc.* including plant and equipment

[88]Sub head 3002-3003 (02) - Repair and maintenance of Permanent Way and Works and Sub head 3002-3003 (05) - Repair and maintenance of Plant and Equipment - Appropriation Accounts for 2018-19

[89]Sub head 5002-5003 – Assets - Acquisition, Construction and Replacement – Appropriation Accounts for 2018-19

[90]New Line, Doubling, Gauge Conversion, Traffic facility works, Track renewal works, Bridge works, Level crossing and Passenger amenities works

[91]Minor Head 500, 600 and 700 of Sub head 3002 and 3003 (5) – Repair and maintenance of plant and equipment - Indian Railways Appropriation Accounts - 2018-19

contracts without finalization of Engineering Scale Plan and Signal Interlocking Plan *etc*.

3.1 Price Variation in Works Contracts in Indian Railways: All Zonal Railways

There was avoidable/excess payment of ₹ 1,172.04 crore and short payment of ₹ 8.76 crore towards price variation to the contractors in the works contracts test checked in audit. This was on account of violation of Ministry of Railways (MoR) periodic instructions on price variation by the Zonal Railways and non-adoption/incorporation of certain provisions of General Financial Rules in General Conditions of Contracts for Works Contracts by the MoR. Irregularities such as incorrect adoption of Base month and Quarter, incorrect application of percentages of components in Price Variation formula *etc.* were noticed in the Zonal Railways.

Extensions on railways' account were granted in a routine manner. Due to non-fulfillment of pre-requisites such as availability of clear sites, approved drawings and design *etc.,* railways paid significant amount towards Price Variation during the extended period of contract.

Cases of fraudulent payment of price variation to contractors in Northeast Frontier Railway were noticed.

Monitoring mechanism for checking of price variation bills by the Executive and the Accounts Department was weak.

3.1.1 Introduction

Price Variation Clause (PVC) constitute a crucial part of the contract conditions to safeguard against general inflation, linked to specified price indices for labour, materials and fuel. Ministry of Railways (MoR) decided (April 1980) that PVC should be provided in future contracts valuing ₹ 25 lakh and above[92]. The MoR also issued instructions that PVC should be included in the Special Conditions of Tenders while inviting tenders so that the tenderers are fully aware of the implications of PVC and factor the same before quoting their rates. For working out the price variation, percentage component of various items like material, labour, fuel *etc*. would be different for different types of works. Depending upon the type of the work, the percentages should be incorporated in the PVC before

[92]MoR's letter No.80/W1/CT/10 dated 25 April 1980. Monetary limit for applicability of PVC was revised to ₹ 50 lakh and above in December 2012 and ₹ 5 crore and above in February 2018.

including in the tender documents so that these are duly taken into account by tenderers while quoting their rates.

Formula for calculation of Price Variation prescribed by MoR[93] is as under:

$$\text{Labour (L)} = \frac{R \times (I - Io)}{Io} \times \frac{P}{100}$$

$$\text{Material (M)} = \frac{R \times (W - Wo)}{Wo} \times \frac{Q}{100}$$

$$\text{Fuel (U)} = \frac{R \times (F - Fo)}{Fo} \times \frac{Z}{100}$$

Where

P – Per cent of Labour Component, Q – Per cent of Material Component, Z – Per cent of Fuel Component

R - Gross value of work done by contractor as per on-account bill(s) excluding cost of materials supplied by Railway at fixed price

Io - Consumer Price Index Number for Industrial Workers - All India: Published in R.B.I. Bulletin for the base period

I - Consumer Price Index Number for Industrial Workers - All India: Published in Reserve Bank of India (R.B.I) Bulletin for the average price index of the three months of the quarter under consideration

Wo - Index Number of Wholesale Prices - All commodities - as published in the R.B.I. Bulletin for the base period

W - Index Number of Wholesale Prices - All commodities - as published in the R.B.I. Bulletin for the average price index of the three months of the quarter under consideration

Fo - Index Number of Wholesale Prices - Fuel - as published in the R.B.I. Bulletin for the base period

F - Index Number of Wholesale Prices - Fuel - as published in the R.B.I. Bulletin for the average price index of the three months of the quarter under consideration

Price Variation either upward or downward shall be applicable up to the stipulated date of completion of work including extensions granted to contractors. Extensions are granted under Clause 17-A due to administrative failure and under Clause 17 -B due to contractor's failure.

In December 2012, MoR, in supersession to all the previous instructions on PVC, issued a comprehensive clause (Clause 46 A) on price variation for incorporation in the General Conditions of Contract (GCC) applicable with prospective effect. This Clause was, however, included in the GCC in

[93]vide MoR's letter No. 2007/CE-I/CT/18 Pt.19 dated 14 December 2012

July 2014. In November 2018, MoR issued[94] the Revised Indian Railways Standard GCC.

3.1.2 Audit scope and objectives

The review covered a period of three years from 2016-17 to 2018-19. The objectives of the review were to assess whether Railway Administration:

i. complied with the provisions of the GCC regarding PVC and various other instructions issued by MoR in Works Contracts;

ii. ensured necessary prerequisites, such as, availability of clear site, funds, approved drawings and design, estimation of various items to be executed *etc.* before inviting the tenders;

iii. made payment towards PVC in accordance with the prescribed rules and regulations; and

iv. ensured the incorporation of all the relevant provisions of General Financial Rules (GFR) regarding PVC in GCC and also its compliance

3.1.3 Audit Criteria

Provisions of Indian Railways Code for Engineering Department; Indian Railways Standard GCC and Special Conditions of Contracts in Works Contracts; MoR's instructions issued from time to time; and GFR were the audit criteria.

3.1.4 Audit methodology and sample

Audit randomly selected 50 Works Contracts (Completed and On-going both) from each Zonal Railways during 2016-17 to 2018-19. Selection of Completed and On-going Works Contracts was made on the following basis:

(i) Completed Works Contracts during the period 2016-17 to 2018-19 wherein price variation was paid by the Railways.

(ii) On-going Works Contracts wherein expenditure of 50 *per cent* or more was incurred and price variation was paid by the Railways.

Thus, 886 Works Contracts[95] (569 Completed and 317 On-going contracts) in Construction Organization and Divisions across Indian Railways were selected for review.

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[94]MoR's letter No.2017/CE-I/CT/8/GCC/Committee dated 5 November 2018

[95]CR-58, SR-52, ECoR-50, ECR-50, ER-50, NCR-50, NER-50, NFR-50, NR-50, NWR-50, SCR-50, SECR-50, SER-50, SWR-50, WCR-50, WR-50, Metro Rly.-36, CLW-16, DLW-24. Out of 886 Works Contracts valuing ₹13,200.12 crore, Zonal Railways made

In order to verify the compliance of MoR's instructions by the Zonal Railways on inclusion of PVC in the Works Contracts, another 198 Works Contracts valuing below ₹ 50 lakh[96] and 123 Works Contracts below ₹ five crore[97] were randomly selected in the Zonal Railways.

For ascertaining the status of inclusion of provisions of GFR, 2017 in the GCC, another 164 Works Contracts (where tenders were invited after February, 2017) were randomly selected in the Zonal Railways.

Thus, overall 1,371 Works Contracts were selected for review. Details of cases selected in the Zonal Railways are given in **Annexure 3.1.**

3.1.5 Audit Findings

Audit findings are discussed in the succeeding paragraphs:

3.1.5.1 Adoption of 'Base month' for payment of Price Variation and 'Base month' in the event of holding negotiation in a tender

The MoR issued a comprehensive PVC Clause 46A-PVC to the GCC in December 2012[98]. As per Clause 46A.2, 'Base month' for PVC shall be the month of opening of tender, unless otherwise stated elsewhere. Earlier in March 1988, MoR had clarified that "if the rates quoted in negotiated tender are accepted, it is logical that the 'Base month' for PVC is the month in which negotiations are held". The MoR had also stated that this should be clarified in the tender conditions or during negotiations.

Audit observed that clarifications of March 1988 were included neither in the comprehensive Clause 46A of December 2012 nor in the GCC of July 2014 and November 2018. During review of Works Contracts in the Zonal Railways, audit observed that

- Out of 886 contracts, in 351 contracts, negotiations were held in the tenders. However, in 136 contracts (out of 351 contracts), month of opening of tender was adopted as 'Base month' for working out the price variation instead of the month of negotiation. Thus, MoR's instructions of March 1988 regarding adoption of the 'Base month' were not followed in these contracts. As a result,

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payment of price variation amounting to ₹1,023.24 crore in 858 contracts. No price variation was paid in 28 Works Contracts (till March 2019).

[96]As per MoR's instructions of December 2012, PVC shall be applicable only for tenders of value of ₹ 50 lakh and more irrespective of contract completion period i.e. PVC shall not be applicable for the tenders (contract agreement value) valuing less than ₹ 50 lakh.

[97]In February 2018[97], MoR removed the applicability of PVC in all the Works Contracts tender having value of less than ₹ five crore.

[98]MoR's letter No.2007/CE-I/CT/18 Pt.19 dated 14 December 2012

there was an excess payment of ₹ 20.26 crore in 93 contracts in 15 Zonal Railways and short payment of ₹ 4.31 crore in 35 cases in 11 Zonal Railways. In eight contracts, no payment towards price variation was made.

- In 212 contracts, month of negotiation was correctly adopted as 'Base month'.
- In three contracts, details of payment of price variation were not available.

Thus, there was no uniformity in adoption of Base month in cases of negotiations in the Zonal Railways. Also, in all the 351 contracts where negotiations were held, clarification on adoption of 'Base month' was neither made in the tender documents nor during negotiations.

In the Exit Conference, Dy. Chief Engineer (G)/ECoR stated (November 2019) that contracts, where month of opening of tender was taken as Base month for PVC instead of month of negotiation will be examined for taking necessary action.

3.1.5.2 'Base month' for PVC for extra items in Works Contracts

Items not included in the accepted Schedule of Rates (SOR), are termed as extra items *i.e.* non-scheduled items. As per Clause 39 of GCC, any item of work carried out by the contractor on the instructions of the Engineer, which is not included in the accepted SOR shall be executed at the rates set forth in the "Schedule of Rates of Railway". Procedure for determination of rates to be paid for any extra item of works was prescribed in the Clause ibid. However, MoR issued no specific instructions/orders for payment of price variation on extra items in works contracts.

In December 2013, CR Administration clarified[99] that the base month for the purpose of price variation for extra items shall be the month and year in which the administrative approval for operation of extra items was given by the competent authority.

Audit observed that in 49 contracts in nine Zonal Railways[100], extra items were operated. However, price variation was paid to the contractors by adopting the tender opening month as the Base month instead of the month in which administrative approval was accorded by the competent authority. This resulted in excess payment of ₹ 0.49 crore in 45 contracts

[99]Dy. CE (C) Works letter No. EW/187/R/465/PVC dated 30 December 2013
[100]CR-10, ECR-04, ER-17, NCR-02, NWR-05, SER-02, SWR-01, WCR-05, WR-03

and short payment of ₹ 0.01 crore in four contracts (CR-01, NCR-02 and WCR-01).

3.1.5.3 Adoption of the 'Quarter under consideration'

As per Clause 46-A.2 of GCC[101], the 'Quarter'[102] for applicability of PVC shall commence from the month following the month of opening of tender. Price variation shall be based on the average price index of the 'Quarter under consideration'.

Index for the 'Quarter under consideration' should be the Quarter of work done, supplies made, recording the measurement of works and date of completion for completed works for calculation of amount of price variation.

Audit observed that out of the 886 contracts, in 66 contracts, Zonal Railways incorrectly considered 'Quarter' while calculating the price variation. Quarter under consideration was not counted from the month following the month of opening of tender. Adoption of incorrect 'Quarter' for payment of price variation resulted in excess payment of ₹ 0.91 crore in 33 contracts[103] and short payment of ₹ 0.84 crore in 33 contracts.[104]

3.1.5.4 Inclusion and operation of PVC incorrectly in works contracts

In April 1980[105], MoR, on the recommendations of the Committee of Directors and Chief Engineers (Construction) issued instructions to provide PVC in the contracts valuing ₹ 25 lakh and above. In January, 1987[106], it was decided that PVC shall be applicable only in the contracts where stipulated period of completion is more than one year. In September, 2007[107], MoR, pursuant to the recommendations of Executive Directors Committee, decided that PVC shall not be applicable for tender value less than ₹ one crore irrespective of the contract completion period. In December 2008[108], the existing tender value limit of ₹ one crore for applicability of PVC was reduced to ₹ 50 lakh. In December 2012[109], MoR

[101]MoR's letter No.2007/CE-I/CT/18 Pt. 19 dated 14 December 2012
[102]Period of three months just following the Base month (Month of opening of tender/Month of negotiation, when negotiation held) is reckoned as Quarter. Quarter under consideration is a period of three months and not a calendar quarter. Average of the indices of the three months falling in the Quarter under consideration is taken into account for calculation of price variation.
[103]CR-05, ER-05, NER-01, NWR-04, SCR-18
[104]CR-04, NER-01, NWR-02, SCR-25, WR-01
[105]MoR's letter No. 80/WI/CT/10 dated 25 April 1980
[106]MoR's letter No. 85/WI/CT/7 dated 20 January 1987
[107]MoR's letter No. 2007/CE I/18 dated 28 September 2007
[108]MoR's letter No. 2008/CE I/CT/Con/7 (PCE/GM) dated 15 December 2008
[109]MoR's letter No.2007/CE-I/CT/18 Pt. 19 dated 14 December 2012

reiterated its instructions that PVC shall be applicable only for tenders of value of ₹ 50 lakh and more irrespective of the completion period. In October 2014[110], MoR clarified[111] that PVC shall be applicable only for contracts of value (contract agreement value) ₹ 50 lakh and above irrespective of the contract completion period. In February 2018[112], MoR, in order to simplify and enhance the pace of works, decided to remove the applicability of PVC in all the works contracts tender having value of less than ₹ five crore. Thus, the monetary limits for applicability of PVC in the works contracts was revisited and revised by the MoR from time to time.

Audit reviewed 198 contracts valuing below ₹ 50 lakh (where works contracts tenders were invited between January 2013 and February 2018) to verify the compliance of MoR's instructions by the Zonal Railways and observed the following:

- Out of 198 contracts[113] test checked, in 31 contracts[114] in six Zonal Railways, PVC was included in contravention of MoR's instructions.
- Out of 31 contracts, in two contracts (CR-01 and SER-01), ₹ 0.04 crore was paid towards price variation to contractors. In 27 contracts, no payment of Price Variation was made to the contractors till March 2019. In two works contracts, details of payment of price variation to contractors were not available.

Due to inclusion of PVC in 31 works contracts, Railways are liable for payment of price variation to the contractors.

Audit reviewed another 123 contracts in 15 Zonal Railways and one Production Unit, where the tenders were invited after February 2018 and the Contract Agreement value was less than ₹ 5 crore. Audit observed

[110]MoR's letter No.2007/CE-I/CT/18/Pt.19 (FTS-8798) dated 15 October 2014
[111]MoR also clarified that decision to apply the PVC in the works contracts with contract agreement value below or above ₹ 50 lakh will be taken by the competent authority to accept the tender or Senior Administrative Grade Officer of the executive department, whichever is higher. The decision shall be taken with concurrence of associate finance and reasons shall be recorded in writing and taken before issuance of Notice Inviting Tender (NIT). This should be incorporated in Special Conditions of Contract (in tender document and contract agreement).
[112]MoR's letter No.2017/Trans/01/Policy dated 8 February 2018
[113]In 157 contracts, PVC was not included in the contract agreements. In 10 contracts (NR-03, SR-01, WR-06), PVC was included but with the condition that no price variation shall be paid for the contract agreement value below ₹ 50 lakh.
[114]CR-02, ECoR-02, ECR-10, NR-07, SER-03, SWR-07

that out of 123 contracts[115], in 23 contracts[116] in seven Zonal Railways, PVC was included disregarding the MoR's instructions of February 2018. No payment of price variation was made to the contractors in these contracts. However, due to inclusion of PVC in contravention of MoR's order, Railways are liable for payment of price variation in these contracts.

3.1.5.5 Payment of Price Variation during extended period of contract

Price variation either upward or downward shall be applicable up to the stipulated date of completion of work including the extended period of completion if such extensions were granted due to administrative failure under Clause 17-A of Indian Railway Standard GCC.

In case extension is granted due to contractor's failure under Clause 17-B of the GCC, the following procedures are adopted:

(i) if the indices increase above the indices applicable to the last month of original completion period, price adjustment shall be limited to the amount payable as per the indices applicable to the last month of the original completion period, or

(ii) till the extended period granted under Clause 17-A of the GCC.

In case, the indices fall below the indices applicable to the last month of original or extended period of completion granted under Clause 17-A of GCC, the lower indices shall be adopted for the price adjustment for the period of extension under Clause 17-B of the GCC[117].

The MoR had issued instructions that Zonal Railways should invite tenders only when they are fully prepared to hand over the site and supply the plans to contractors. The works contracts should not be awarded unless soil testing, site investigations *etc.* have been completed, all plans, drawings and estimates duly approved/sanctioned by the competent authority and that there was no hitch in handing over the site to the contractor.

During review of 886 contracts, audit observed that

- In 684 contracts, extensions were granted only on Railway's account (under Clause 17-A).

[115]In 78 contracts, PVC was not included in the contract agreements. In 22 contracts (NR-05, SWR-07, WR-10), PVC was included with the condition that no price variation shall be paid for the contract agreement value below ₹ 5 crore.
[116] CR-01, ECoR-01, ECR-10, ER-03, Metro Rly.-03, NER-01, NR-04
[117]Clause 46-A.10 of Indian Railways Standard GCC

- In 21 contracts, extensions were granted only on contractor's account (under Clause 17-B).
- In 104 contracts, extensions were granted on both Railway's and contractor's account (under Clause 17-A and 17-B).
- In the remaining 77 contracts, no extension was granted.

During review of 886 contracts, audit observed that in 684 contracts, extensions were granted for completion of contracts on Railway's account under Clause 17-A of the GCC due to reasons exclusively attributable to Railway Administration. Extensions were granted to contractors due to reasons which could have been avoided such as failure in providing land/clear sites, delay in making available drawings and designs, change in scope of work *etc*. Railway Administration extended the contract period in a routine manner under Clause 17-A. Further, extensions were granted several times in single contracts for multiple reasons. The reasons beyond the control of Zonal Railways were attributed to power shutdown, monsoon/rain/water logging *etc*. Such reasons included delay in forest clearance, non-availability of sand/brick in the market, local agitation, security restrictions *etc*.

Granting extensions in a routine manner on reasons as mentioned above that are mostly foreseeable reflect the laxity/lack of preparedness on the part of Railways in execution of works contracts.

Owing to extensions granted on Railway's account, 634 works[118] suffered delay as shown below:

Delay in completion of work	No. of works contracts
Up to 6 months	91
6 months to 1 year	131
1 year to 2 years	215
2 years to 3 years	97
3 years to 5 years	71
More than 5 years	29

Due to granting extensions, Railway Administration had to make an avoidable payment of ₹ 187.51 crore to the contractors towards price variation in 514 contracts under Clause 17-A. In 67 contracts, there was short payment of ₹ 2.19 crore by the Railway Administration towards price variation. Financial implication was worked out in audit by freezing the indices on the original date (month) of completion. Payment of price

[118] In 50 contracts, the details were not available.

variation in 103 contracts during the extended period was yet to be made. This was undischarged liabilities of Railway Administration.

Audit further observed that out of 684 Works Contracts, where extensions were granted to the contractors on Railway's account, in 95 Works Contracts[119] in 16 Zonal Railways and one Production Unit, there was an excess payment of price variation amounting to ₹ 18.13 crore. This was due to incorrect adoption of Base month, index, component percentage *etc*. while making the payment of price variation to the contractors. This issue has also been commented upon separately in the paragraphs.

Thus, granting extensions on Railway's account led to delay in completion of works. Also, undue financial benefits were extended to contractors in the form of excess payment of price variation.

In 21 contracts, extensions were granted exclusively under Clause 17-B on contractor's' account. Railway Administration had to make an avoidable payment of ₹ 0.85 crore towards price variation in seven contracts. There was short payment of ₹ 0.15 crore in 10 contracts. Payment of price variation was not made in four contracts.

In 104 contracts, extensions were granted under both Clause 17-A and Clause 17-B. Railway Administration made avoidable payment of ₹ 18.52 crore towards price variation during extended period.

Thus, total avoidable expenditure of ₹ 206.88 crore was incurred by the Railways towards price variation during extended period of contact due to delays attributable on the part of Railways, contractors and both Railways as well as contractors.

Payment of price variation during extended period of contract due to non-fulfillment of various pre-requisites before awarding contracts was highlighted in Chapter-2-Management of Works Contracts in Indian Railways of Audit Report No.48 of 2015 (Railways). As a remedial action, MoR re-iterated (January 2018) that either the contracts for works should not be awarded without completion of pre-requisites such as site clearance, soil investigations and preparation of all drawings/designs/plans *etc.* or in case such an action was warranted for expeditious completion of the work, the requisite work should be completed in time to hand over the same to contractor immediately so that the progress of work was not hampered. The MoR also stated that

[119]CR-3, ECoR-3, ECR-5, ER-3, NCR-9, NER-11, NR-8, NWR-7, SECR-2, SER-7, SR-8, SWR-5, WCR-1, WR-7, SCR-12, NFR-2, CLW-2.

extensions of time for completion of contacts should not be granted in a routine manner.

However, the Zonal Railways failed to address these issues and ensure compliance of these instructions for timely completion of works.

3.1.5.6 Recovery from contractors due to de-escalation of Price Indices

Price Variation Clause is a tool to safeguard against the inflation/deflation linked to price indices. This is included in contracts to take care of the fluctuation in prices of raw materials in the market and to compensate both the Railways and the contractors from the fluctuation in rates. During review of works contracts, audit noticed that in some cases Zonal Railways ignored the downward trend in the indices.

Out of total 886 contracts, in 196 contracts[120] in 10 Zonal Railways and two Production units, de-escalation in the price indices was noticed. Audit observed that effects of lower indices/rates were adjusted in all the contracts except five contracts[121] in three Zonal Railways. This resulted into non-recovery of ₹ 0.38 crore from the contractors.

Failure to recover the amounts from contractors due to de-escalation of price indices indicated lack of monitoring by the Executive as well as Accounts Departments.

3.1.5.7 Application of Price Variation formula in works contracts

Clause 46-A of the GCC prescribed formulae to be used for works contracts. Separate percentages for labour, materials, fuel *etc*. according to type of works to be carried out are prescribed for calculation of price variation. Fixed components, specific payments made to consultants, materials supplied by Railways at fixed rate *etc.* are to be excluded from the gross value of the work for the purpose of payment of price variation.

Audit observed that in 68 contracts in 12 Zonal Railways and one Production Unit[122], price variation formula/components percentage/indices were applied incorrectly. It was observed that two different percentages of material components were adopted in a single contract. Price Variation was paid on 'material' component in contracts for transportation of materials. For price variation calculation on Ballast, Index of 'All commodities' was applied instead of 'Stone chips'. Fuel component was

[120]CR-22, CLW-08, DLW-13, ECR-21, ER-43, Metro Rly.-13, NR-21, NWR-03, SECR-07, SER-01, SR-04, SWR-40
[121]CR-01, NWR-03, SER-01,
[122]CR-09, CLW-02, ECoR-03, NCR-01, NER-01, NFR-04, NWR-12, SECR-05, SER-03, SR-01, SWR-02, WR-01, NR-24

applied as 40 *per cent* instead of 15 *per cent*. Material component was taken as 40 *per cent* and 25 *per cent* in different quarters in a single contract.

Thus, incorrect application of price variation formula resulted into excess payment of ₹ 11.10 crore in 43 contracts[123] and short payment of ₹ 0.90 crore in 25 contracts[124]. Some of the cases have been discussed below:

- In NFR, two contracts were awarded (February 2013 and March 2015) for manufacturing and supply of machine crushed track ballast in respect of two projects namely Lumding - Silchar (LMG-SCL) and Kumarghat - Agartala (K-A) projects respectively. Machine crushed stone ballast was manufactured mechanically at the contractor's crushing unit without involving labour. In the GCC, for Ballast and Quarry products contracts, labour component was provided as 55 *per cent*. There was no provision in the GCC for allowing different percentages for machine crushed and hand crushed ballast. For 'Other Works Contracts', 30 *per cent* labour component was provided.
  Audit observed that labour component of 55 *per cent* was applied in calculation of price variation. As the works contract was not labour intensive, labour component should have been adopted as 30 *per cent* prescribed for "Other works contracts". Thus, incorrect application of labour component resulted in avoidable payment of price variation of ₹ 3.52 crore in two contracts.
- In SECR, one contract which was purely for transportation/loading/unloading of railway materials from one place to another, 'material' component was included incorrectly in the PVC formula. This resulted in excess payment of ₹ 0.08 crore towards price variation to contractor.
- In SECR, in four contracts for supply of ballast, price variation was paid based on the index of 'material' instead of index of 'stone chips'. This resulted in excess payment of ₹ 0.30 crore towards price variation to contractor.
- In NWR, there were 12 composite works contracts involving various types of activities viz. Earthwork, Ballast *etc.* In these contracts, price variation was calculated on the basis of prescribed percentage for components for individual activities viz. Earthwork, Ballast *etc.* The correct procedure was to adopt the percentages

[123]CR-07, CLW-02, ECOR-03, NCR-01, NER-01, NFR-04, NWR-06, SECR-05, SER-03, SR-01, SWR-01, WR-01, NR-08
[124]NWR-06, SWR-01, CR-02, NR-16

applicable in 'Other works contracts'. There was an excess payment of ₹ 0.30 crore in six contracts and short payment of ₹ 0.15 crore in six contracts.

- In CR, in eight contracts of "Ballast supply and stacking", index of 'All commodities' was adopted for calculation of price variation instead of 'Stone chip/slab' index. This resulted in excess payment of ₹ 0.10 crore in six contracts and short payment of ₹ 0.01 crore in two contracts.
- In Metro Railway/Kolkata, Labour Index of Kolkata was applied instead of All India labour Index. In reply to audit's observations, the Railway Administration stated that this was considered erroneously. However, there was no loss to Railways as this was lower as compared to All India Labour Index. Applying Kolkata Index in place of All India Labour Index was a violation of conditions of contract agreement and also GCC.
- In NFR, in one contract, Index for 'Material' was taken as 132 instead of 182 while making payment of price variation. Due to wrong adoption of index, Railway Administration made an excess payment of ₹ 6.24 crore to the contractor.

The above instances were indicative of lack of monitoring by the Executive and Accounts Departments while passing the PVC bills of the contractors. There was no provision in the GCC for allowing different percentages for machine crushed and hand crushed ballast.

3.1.5.8 Revision of instructions for PVC as per the provisions of GFR

Provisions of GFR, 2005 are applicable to all the Central Government Ministries/Departments. As per Chapter 8 Rule 204 (viii) of GFR, 2005, price variation was payable only in long term contracts where delivery period extends beyond 18 months. GFR, 2005 was revised in February, 2017 wherein the above provisions of GFR, 2005 were retained/continued in GFR, 2017. Audit observed that the rules/provisions of GFR for applicability of PVC in long term contracts were not incorporated in GCC for Works Contracts by MoR. It was observed that in the GCC for Services (issued by MoR in February/March 2018), the condition of applicability of PVC in long term contract where delivery period extends beyond 18 months was incorporated.

Audit reviewed the instructions issued by MoR on PVC and observed that earlier in January 1987[125] PVC was made applicable only in the contracts where the stipulated period of completion was more than one year. However, in September 2007[126], on the recommendations of the Executive Directors Committee, condition of minimum prescribed limit of one year for applicability of PVC was deleted. Thus, from September 2007, PVC was delinked with the completion period of the works contracts.

Review of 886 works contracts selected in the Zonal Railways revealed that in 775 contracts[127], PVC was included in contravention to the provisions of GFR although the completion period was 18 months or less. Out of 775 contracts, in 733 contracts[128], price variation of ₹ 893.09 crore was paid to the contractors. Railways, by incorporating the rules/provisions of GFR in the GCC, could have avoided payment of huge amount towards price variation to the contractors.

Audit further observed that MoR while issuing the Revised GCC for Works Contracts in November 2018 had also not taken into consideration the various provisions of Rule 225 of GFR, 2017 such as applicability of PVC in long term contracts, ceiling on price variation *etc.*

Audit randomly selected another 164 contracts in the Zonal Railways where tenders were invited after February, 2017. Out of 164 contracts, PVC was included in 137 contracts[129] in contravention of the provisions of GFR, 2017. In 27 cases, PVC was not included. Due to non-observance of the provisions of GFR, 2017, Railway Administration had to make avoidable payment of price variation of ₹ 19.94 crore to the contractors in 78 contracts[130]. In 59 contracts, no price variation was paid to the contractors till March 2019. However, Zonal Railways are bound by contractual obligation to bear the future liability of price variation in these works contracts due to inclusion of PVC in the contracts.

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[125]MoR's letter No.85/WI/CT/7 dated 20 January 1987
[126]MoR's letter No. 2007/CE I/18 dated 28 September 2007
[127]In 105 contracts, completion period of contracts was more than 18 months. In six contracts, details of Date of start of work and stipulated completion of work were not available.
[128]In 17 works contracts, price variation of ₹ 2.05 crore was recovered from the contractors due to de-escalation. In 25 works contracts, price variation was yet to be paid.
[129]Out of which, 36 contracts had been completed.
[130]CR-05, DLW-04, ECOR-02, ECR-01, ER-07, NCR-01, NER-06, NFR-01, NR-12, NWR-11, SCR-07, SECR-02, SER-02, SR-06, WCR-05, WR-06

Rules[131] of GFR of 2005 and 2017 provide that 'No price variation will be admissible beyond the original Scheduled Delivery Date for defaults on the part of the supplier'. However, GCC, 2014 provides for the payment of price variation under Clause 17-B for default on part of the contractor (*i.e*. extensions on contractor's account). Thus, rules/provisions of the GFRs were not included in the GCC by the MoR.

Audit observed that out of 886 contracts, Zonal Railways granted extensions under Clause 17-B for the delay on contractor's account which was in contravention of the provisions of GFR. Consequently, in 56 works contracts, price variation of ₹ 6.91 crore was paid to the contractors. Railways, by incorporating the rules/provisions of GFR in the GCC, could have avoided payments towards price variation to the contractors for delay on their part beyond the scheduled completion period of contracts.

3.1.5.9 Ceiling on Price Variation

As per the provisions of GFR, 2017, PVC should provide for a ceiling on price variations particularly where escalations are involved. It could be a percentage per annum or an overall ceiling or both.

Audit reviewed the instructions issued (April 1980) by MoR on ceiling on PVC and observed that no reimbursement/recovery due to variation in prices up to five *per cent* of the amount payable to the contractor was to be made. Price variation was to be made in excess of five *per cent* and was limited to 15 *per cent* of the amount payable to the contractor. The MoR removed (January 1987[132]) the maximum limit of price variation. In April 1996[133], MoR decided that for the contracts with completion period up to one year, no PVC shall be provided; for the contracts between one year to two years duration, price variation shall be limited to 10 *per cent* (15 *per cent* minus five *per cent* floor price) of the amount finally payable to contractor. For the contracts of more than two years' duration, price variation shall be limited to 20 *per cent* (25 *per cent* minus five *per cent* floor price) of the amount finally payable to contractor. The upper limit of PVC was deleted in September 2007 and lower limit of PVC of five *per cent* was also deleted in March 2008. Thus, with effect from March 2008, there was no ceiling on PVC in works contracts which was in contravention of GFR.

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[131]Rule 204 (viii) (h) of GFR, 2005 and Rule 225 (viii) (h) of GFR, 2017
[132]MoR's letter No.85/WI/CT/7 dated 20 January 1987
[133] MoR's letter No. 85/WI/CT/7-Vol.I dated 4 April 1996

Audit observed that since the provisions of GFR were not included in GCC by MoR; price variation was being paid to the contractors without any ceiling. Percentage of price variation to total payments made to contractors (in 886 cases checked in audit) was as under:

Percentage of Price Variation to total payments made to contractors	No. of contracts
Less than 1 *per cent*	140
1 *per cent* to 5 *per cent*	481
5 *per cent* to 10 *per cent*	173
10 *per cent* to 20 *per cent*	65
More than 20 *per cent*	27

3.1.6 Irregularities noticed in payment of Price Variation in NFR

Audit noticed some important cases of irregularities in payment of price variation to contractors in NFR. These are discussed in the succeeding paragraphs:

3.1.6.1 Excess payment of Price Variation due to incorrect adoption of indices of Base month and Quarter under consideration

In NFR, audit observed that while calculating the price variation, the price indices of various components for the Base month and average index for the quarters were taken incorrectly. Due to adoption of incorrect indices of various components, NFR Administration made excess payment of ₹ 1.94 crore to the contractor in one contract.

3.1.6.2 Base month for payment of Price Variation in 'Two packet system of tendering' in works contracts

The MoR had introduced (1986) 'two packet system of tendering' for works tenders. MoR's circular of August 2012 *inter alia* stipulated that the tenderers shall submit their quotations/offers in two sealed envelopes with one cover containing the Technical and Commercial offers and the other cover containing the Financial bids. First packet shall be for the capability, possession of appropriate machinery and equipment, financial strength, experience *etc.* of the tenderer. After evaluation by Tender Committee, if the offers were found acceptable by the competent authority, second packet containing financial bids of the eligible bidders shall be opened and tenders shall be processed for finalization in the normal manner.

Review of records of Bhairabi-Sairang New Line project in NFR revealed that Railway Administration had executed several Contract Agreements of the project through 'two packets system of tendering'. However, while determining the Base period (month) for calculation of price variation, no standard practice was followed. For different contracts, different months

were reckoned as base period arbitrarily. In some contracts, date of opening of Technical bid was taken as Base month while in some other cases, date of opening of Price bid was taken as Base month even when negotiation was held. In some cases, date of negotiation with the contractors was considered.

In absence of clear guidelines from MoR for adoption of Base month in 'two packet system of tendering', NFR Administration adopted different practices for reckoning Base month. The MoR needs to issue specific instructions/guidelines for adoption of Base month for payment of price variation in 'two packet system of tendering' in works contracts.

3.1.6.3 Incorrect payment of Price Variation on inflated value of work done

In NFR, five contracts were executed during the period July 2013 to November 2016 for Bhairabi-Sairang New Line Project. Audit observed that the value of work done in the price variation bills was inflated fraudulently in all the five contracts. For instance, Gross value of work done in the CC Bill No.XVIII of ₹ 7.24 crore was increased to ₹ 17.24 crore. The inflated figures were considered for calculating the price variation. This resulted into excess payment for price variation amounting to ₹ 9.54 crore in eight bills of the five contracts as shown below:

Sl. No.	CA No. and Date	CC Bill No.	Gross value of work done-actual (₹)	Inflated Gross value of work done (₹)	Difference (₹)	Excess price variation paid (₹)
1.	Con/B-S/1727 dt. 09.07.2013	XVIII	72429751.15	172429751.15	100000000	38119146.98
		XXVII	65464822.42	165464822.42	100000000	
2.	Con/B-S/1736 dt. 25.07.2013	V	36971040.60	136971040.60	100000000	21558892.13
3.	Con/B-S/2063 dt.05.11.2015	III	32463396.94	132463396.94	100000000	13615575.67
		VIII	20712144.58	120712144.58	100000000	
4.	Con/B-S/2280 dt.22.11.2016	III	29277457.06	129277457.06	100000000	15578084.16
		VIII	15623659.86	115623659.86	100000000	
5.	Con/B-S/2278 dt.22.11.2016	III	18032728.11	118032728.11	100000000	6618533.09
					Total	**9,54,90,232.03**

Submission of inflated PVC bills by the contractor and failure of the Northeast Frontier Railway (NFR) Administration to detect such cases during vetting at various stages was indicative of ineffective monitoring and weak internal control.

Principal Executive Director (Accounts)/MoR remarked (September 2019[134]) that PVC bills of a contractor on NFR were manipulated by the concerned Executive Department to make excess payment to contractor in several projects/contracts. This manipulation was not detected during

[134]MoR's letter No.2019/ACII/25/5 dated 23 September 2019

internal check. Considering the failure in internal checks of the PVC bills, Principal Executive Director (Accounts)/MoR issued instructions to Principal Financial Advisors of all the Zonal Railways to review their respective systems and ensure that such failure of internal check does not recur.

However, the fact remains that Executive and Accounts Departments did not exercise proper checks in processing the PVC bills preferred by the contactors. Further, Principal Executive Director (Accounts)/MoR's assertion that Executive Department of the Railway was involved in manipulation of the figures of PVC bills to make excess payment to contractor was indicative of collusion of Railway officials with the contractor.

3.1.7 Other cases - Change in Wholesale Price Index Base

Ministry of Commerce and Industry had revised Base year of the All India Wholesale Price Index (WPI) from 2004-05 to 2011-12 with effect from April 2017. Discontinuation of Indices with Base year 2004-05 rendered the existing price variation calculation with Base Index 2004-05 unworkable. In order to work out the price variation as per revised WPI 2011-12, MoR issued instructions in August 2018[135]. According to this instruction, Indices with Base year 2004-05 were to be used for price variation calculation up to January 2017. From February 2017 onwards, following method was to be used:

- Contract price shall be updated upto January 2017 with the price indices of 2004-05 series. The updated price shall be taken as Base price for applying the price variation on indices of January 2017 for 2011-12 series.
- Base price of January 2017 calculated above shall be further updated after January 2017 using price variation formula as per indices of 2011-12 series.

Audit observed that MoR's above instructions were followed correctly in nine Zonal Railways[136] and one Production Unit while calculating the amount of price variation payable to contractors. However, in eight Zonal Railways and one Production Unit[137], MoR's instructions were not being followed. The following was observed:

- In NER, PVC bills were being paid without updating the Contract price and Base price as per MoR's instructions.

[135]MoR's letter No. 2007/CE-I/CT/18/Pt.19 dated 28 August 2018
[136]ECoR, NEFR, NR, NWR, SCR, SECR, SR, WCR, WR, DLW
[137]CR, ER, ECR, NCR, NER, SER, SWR, CLW, Metro Rly.

- In NCR, Railway Administration was using Indices as per Base year 2011-12 while the Base month for these contracts was prior to January 2017. This was a clear violation of MoR's instructions of August 2018. There was an excess payment of ₹ 0.15 crore in seven contracts and short payment of ₹ 0.20 crore.
- In CR, WPI 2011-12 series was directly adopted for calculation of price variation instead of updating contract rates till January 2017 as provided in MoR's instructions. This resulted into excess payment of ₹ 0.07 crore in two contracts and short payment of ₹ 0.01 crore in five contracts. Audit observed that CR Administration had referred the matter to MoR in May 2019 with request to review the policy of August 2018. However, no reply was received from MoR on CR's above reference.
- In ER, audit observed excess payment of ₹ 0.37 crore in 10 contracts (eight completed and two on-going contracts) due to incorrect updation of Indices of Material, Fuel and Cement. There was short payment of ₹ 0.15 crore in another 10 contracts (eight completed and two on-going contracts).

3.1.8 Conclusion

Price Variation Clause (PVC) was incorporated in General Conditions of Contract (GCC) to safeguard against change in prices of labour, material, fuel and other components. The MoR had issued various instructions from time to time in this regard. In General Financial Rules (GFR), PVC was incorporated in respect of long-term contracts especially contracts of more than 18 months. In GFR, ceiling on payment of price variation either in terms of a fixed percentage or fixed amount was provided. However, the above provisions of GFR were not incorporated in GCC, 2014 and Revised GCC, 2018 by MoR resulting in avoidable payment towards price variation to the contractors in works contracts.

Irregularities such as incorrect adoption of Base month/quarter, incorrect percentage of components, incorrect adoption of labour index *etc*. were noticed in the Zonal Railways. In most of the works contracts, extensions were granted on Railway's account. This resulted not only in delay in completion of works but also led to payment of considerable amount towards price variation to the contractors.

Monitoring mechanism for checking of price variation bills was deficient. Inaccuracies in computation of price variation reflected that due diligence was not exercised by the Executive and Accounts Department. Audit observed cases of fraudulent payment of price variation to contractors in NFR due to failure in internal check of price variation bills.

Computerised database of works contracts (with PVC and without PVC) were not found to be maintained in the Zonal Railways. Maintaining the database could have enabled the concerned authorities to ensure compliance of MoR's instructions on application of PVC in works contracts.

There was avoidable/excess payment of ₹ 1,172.04 crore and short payment of ₹ 8.76 crore towards price variation to the contractors in the works contracts test checked in audit.

3.1.9 Recommendations

- ***Ministry of Railways needs to revisit GCC w.r.t Works Contracts and incorporate the provisions of GFR relating to applicability of PVC in long term contracts (more than 18 months) and a ceiling on PVC amount payable to contractors.***
- ***Ministry of Railways should issue clear instructions relating to contract matters such as adoption of the Base month in case of negotiation and 'two packets system of tendering', percentage of labour to be reckoned for machine crushed ballast etc.***
- ***Ministry of Railways may direct the Zonal Railways to maintain computerized database of all the works contracts (with PVC and without PVC) to avoid incorrect inclusion of PVC in the contracts below the stipulated contract agreement value.***

The matter was taken up with MoR in October 2020; no reply was received (February 2021).

3.2 Unproductive expenditure on construction of Limited Height Subways: Northern Railway

Limited Height Subways (LHSs), in lieu of Unmanned Level Crossings (UMLCs), constructed on Rohtak-Panipat section of Delhi Division, were submerged and remained unutilized rendering whole expenditure of ₹ 16.19 crore unproductive. The main objectives for elimination of Unmanned Level Crossings *i.e.* to prevent loss of human lives and road accidents apart from better traffic movement could not be achieved due to LHS remaining unusable.

Level Crossings (LCs) facilitate smooth running of traffic in a regulated manner. However, they pose a major challenge in the operation of safe running of trains. The maximum fatalities in Railways occur due to accidents at Unmanned LCs (UMLCs). As per Indian Railways Vision 2020, nearly 70 *per cent* of the fatalities in railway mishaps take place at UMLCs. Thus, LCs are vulnerable points for accidents. Railways remove

UMLCs by constructing Road Over Bridges (ROBs), Road Under Bridges (RUBs), Limited/Normal Height Subways (LHSs/NHSs) *etc.*

Para 2 of Special Conditions of Work of Elimination of LC by providing LHS stipulates that the work will mainly be executed at the location given for the LC. However, the location of work can be changed within the jurisdiction of Senior Divisional Engineer/Divisional Engineer, if the need arises. No extra claim of payment shall be entertained in this regard. Railway reserves the right for change of such locations. Further, as per Para 41 of General Conditions of Contract, in the event of any of the provisions of the contract is required to be modified after the contract documents have been signed, modification shall be made in writing and signed by the Railway. Thus, the Competent Authority can change location of LCs for construction of LHSs, after tendering and awarding of contract, through written orders.

Audit reviewed the contracts for construction of LHSs, in lieu of LCs, on Rohtak-Panipat Section[138] over Delhi Division of Northern Railway and the following irregularities were noticed:

(a) Contract for construction of LHSs at LC Nos. C-13 and C-23 on Rohtak-Panipat Section

Contract[139] for construction of LHSs in lieu of UMLC Nos.C-13[140] and C-23 on Rohtak - Panipat Section was awarded in February 2013 with the date of completion by June 2013. In respect of LC No. C-23, audit noticed that the local public[141] informed the Railway Administration about high water level at LC No.C-23 and requested (May 2017) for construction of road near LC No. C-24 instead of construction of LHS at LC No.C-23. However, Railway Administration did not take any cognizance of the issues raised by the local public and took no action to stop the work at LC No. C-23. The work was completed[142] by the contractor at a cost of ₹ 1.06 crore.

[138]under Assistant Divisional Engineer/Rohtak, Delhi Division, Northern Railway
[139]Construction of LHS in lieu of UMLC No.C-13 at km 12/5-6 and C-23 at km 22/4-5 on Rohtak-Panipat Section by Cut and Cover Method (In this method, traffic block of six hours is required and complete track is dismantled, excavation of embankment to the desired level is done and insertion of precast RCC segments is done) awarded to M/s B.S. Sangwan/Sonepat (Haryana)
[140]Due to high water table, execution of work at the site of C-13 was not feasible and location was changed to C-27.
[141] Sarpanch of Village
[142]at a cost of ₹ 2.12 crore (₹ 1.06 crore on each LHS)

Audit conducted joint inspection with the Railway Officials on 6 March 2019 of the site C-23. In the joint inspection, the LHS was found submerged and not functioning as shown in Figure 3.1.

Figure 3.1: LHS at LC No. C-23 (Photograph taken on 6 March 2019)

(b) Contract for construction of LHSs at LC Nos. C-17, C-18 and C-19 on Rohtak-Panipat Section

Contract[143] for construction of LHSs in lieu of UMLC No.C-17, C-18 and C-19 on Rohtak - Panipat Section was awarded in February 2014 at a cost of ₹ 4.33 crore with the date of completion by February 2015. The contractor started the work in May 2014. However, date of completion of work was extended (on seven occasions) up to January 2019. High water table and difficulty in de-watering were amongst the reasons for granting the extensions. While the work was in-progress, the contractor informed (January 2016, June 2017 and December 2017) the Railway Administration that the ground water level at LC Nos. C-18 and C-19 was very near to ground level and thus, construction of LHSs was very difficult. The Railway Administration changed the location of LC Nos. C-18 and C-19 to LC No. C-10[144].These LHSs (at LC Nos. C-17 and C-10) were also covered with water but the work was not stopped. Audit noticed that no Corrigendum to the Contract for change of site was issued. The work was completed at a cost of ₹ 6.49 crore.

Audit conducted joint inspection of the LHSs with the Railway Officials on 18 September 2018 (C-17) and 6 March 2019 (C-10). In the joint

[143]Construction of LHS in lieu of UMLC Nos. C-17 at km 18/7-8, C-18 at km 19/7-8 and C-19 at km 20/4-5 on Rohtak - Panipat Section by Cut and Cover Method awarded to M/s Pushpraj Enterprises/Bihar

[144]near Makroli Station

inspection, both the LHSs were found submerged with water and not functioning as shown in Figures 3.2 and 3.3 below:

Figure 3.2: LHS at LC No.C-10 (Photograph taken on 6 March 2019)

Figure 3.3: LHS at LC No. C-17 (Photograph taken on 18 September 2018)

(c) Contract for construction of LHSs at LC Nos. C-12, C-15 and C-38 on Rohtak-Panipat Section

Contract[145] for construction of LHS in lieu of UMLC No. C-12, C-15 and C-38 on Rohtak - Panipat Section was awarded in February 2014 at a cost of ₹ 4.27 crore with date of completion by February 2015. Date of completion of work was subsequently extended up to February 2019 due to increased scope of work.

During execution of work, the contractor informed the Railway Administration that due to high water level at LHS No. C-15, construction work could not be completed in time. Due to high water table and agitation by the villagers, location of the two UMLC Nos.C-12 and C-38 was changed to C-22 and C-82 and work was completed at a cost of ₹ 6.36 crore.

Audit conducted joint inspection of the LHS at C-15 with the Railway Officials on 6 March 2019. In the joint inspection, the LHS was found submerged and not functioning as shown in the Figure 3.4 below:

[145]Construction of LHS in lieu of UMLC No. C-12 at km 12/3-4, C-15 at km 16/4-5 and C-38 at km 41/2-3 on Rohtak - Panipat Section by Cut and Cover Method awarded to M/s KSC Construction Company/Bhiwani (Haryana)

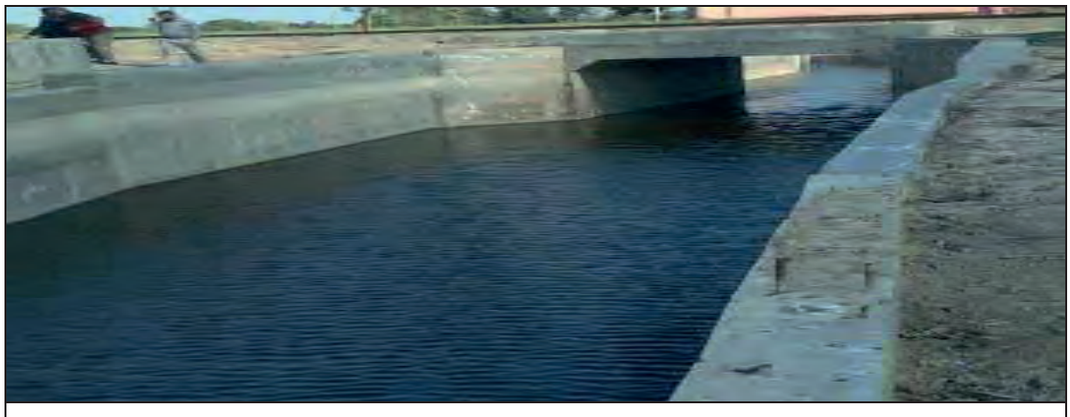

Figure 3.4: LHS at LC No. C-15 (Photograph taken on 6 March 2019)

Payment of ₹ 2.12 crore (approx.) was made to the contractor for LHS at C-15.

(d) Contract for construction of LHS on LC Nos. C-32, C-33 and C-36 on Rohtak-Panipat Section

Contract[146] for construction of three LHSs in lieu of UMLCs Nos.C-32, C-33 and C-36 on Rohtak - Panipat Section over Delhi Division was awarded in May 2014 at a cost of ₹ 4.37 crore with the date of completion by May 2015. In June 2014, the Assistant Divisional Engineer, citing some unavoidable circumstances, changed the location of LC Nos. C-32, C-33 and C-36 to LC Nos. C-83 and C-84 on Delhi- Batinda section. From the records, it could not be ascertained whether any formal approval of the Competent Authority[147] for altering the sites for construction of LHSs was obtained. The contractor was instructed for construction of LHSs at the changed sites. No corrigendum to the contract for the change of site was issued.

Audit noticed that in the Measurement Books[148], name of the work was mentioned as construction of LHS at LC No.C-32, C-33 and C-36 on Rohtak - Panipat Section and location of the work was shown as LC Nos. C-83 and 84, which was incorrect. Also, the Completion Certificate for the work was issued incorrectly for the original sites *i.e.* LC Nos. C-32, C-33 and C-36 instead of the actual constructed sites. Construction work at the

[146]Construction of LHS in lieu of UMLC No.C-32 at km 34/0-1, C-33 at km 35/2 and C-36 at km 40/6-7 on Rohtak - Panipat section by 'Cut and Cover Method' awarded to M/s Hari Om Construction Company/Panipat (Haryana). In Cut and Cover Method, traffic block of about six hours is required in which complete track is dismantled, excavation of embankment to the desired level is done and insertion of precise Reinforced Concrete Cement (RCC) segments is done. After that, filling of gaps and linking of track is done.
[147]Senior Divisional engineer-IV/Northern Railway/New Delhi in Delhi - BTI section
[148]Measurement Book is a continuous record of measurements of work done by the contractor against a contract entrusted by the Railway Administration.

changed sites (*i.e.* C-83 and C-84) was completed at a cost of ₹ 6.52 crore. Audit observed that LHSs constructed at the changed sites could not be put into use/functioning as both LHSs were submerged and local public were unable to use these LHSs. Though the contractor had informed (August 2014) the Assistant Divisional Engineer/Rohtak that the water level at LC Nos. C-83 and C-84 was very near to ground level, Railway Administration did not take any action to stop the work.

Audit conducted joint inspection with the Railway Officials on 18 September 2018 (C-84) and 6 March 2019 of the sites (C-83). In the joint inspection, these LHSs were found submerged and thus, not functioning as shown in the Figures 3.5 and 3.6 below:

Figure 3.5: LHS at LC No. C-83 (Photograph taken on 6 March 2019)

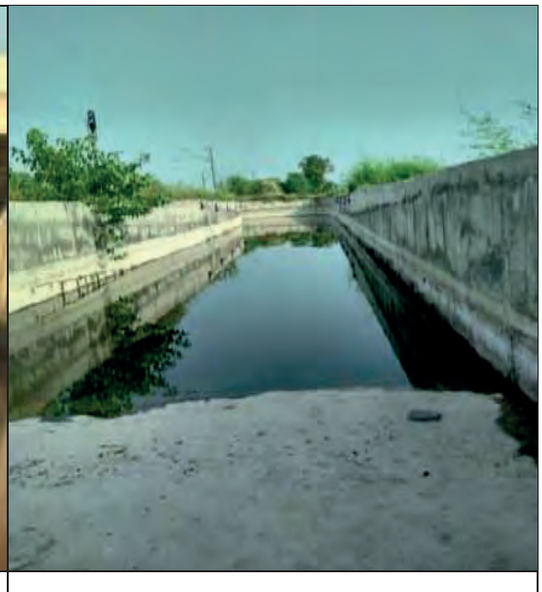

Figure 3.6: LHS at LC No. C-84 (Photograph taken on 18 September 2018)

Due to non-functioning of LHS, Railway Administration deployed two Gatemen at UMLC (No. C-84) from October 2017 entailing additional expenditure on their Pay and Allowances. A sum of ₹ 0.31 crore (up to August 2020) was incurred on Pay and Allowances of these Gatemen.

From the above, it was evident that in all the cases (except LC Nos.15, 17 and 23) where location/sites of LHSs were changed, no formal approval of the Competent Authority was obtained. No Corrigendum to contract for change in location of the works was issued. The Assistant Divisional Engineer/Rohtak stated (August 2019) that locations were changed verbally by the Competent Authority due to high water table and agitation by villagers. However, even after change of sites, the LHSs at LC Nos. 10, 83 and 84 and LHSs at original sites LC No. 15, 17 and 23 remained submerged in water. No reports relating to Site survey or Soil test was

available in the records of the Railway Administration. This indicates lack of due diligence in creation of crucial public facilities.

The main objective of construction of LHSs (in lieu of UMLCs) was to prevent loss of human lives and vehicles due to accidents apart from providing smooth traffic movement. However, these LHSs, being submerged in water, could not be used by the local public/road users. Thus, the objective of construction of LHSs could not be achieved and whole expenditure of ₹ 16.19 crore incurred on construction of these LHSs was unproductive.

The matter was taken up with MoR in September 2020; no reply was received (February 2021).

3.3 Loss due to indecision of Railway Administration in the matter of land acquisition: East Central Railway

Delay in payment of ₹ 3.20 crore for acquisition of land from State Authorities resulted in avoidable additional expenditure of ₹ 134.21 crore due to revision in Land Acquisition Act.

Ministry of Railways (MoR) sanctioned the work of Hajipur - Sagauli New Line in 2003-04 with Abstract estimate of ₹ 324.66 crore. In October 2007, MoR sanctioned the Detailed estimate of ₹ 528.65 crore. In January 2019, a Revised Estimate-cum-Material Modification amounting to ₹ 2,066.78 crore was sanctioned for the project. This was a new line project, land acquisition was an important element of the cost.

In the Detailed estimate (October 2007), there was provision of ₹ 115.16 crore for land acquisition of 2,043.96 acre. However, in the Revised Estimate-cum-Material Modification (January 2019), the requirement of land was pruned down from 2,043.96 acre to 1,812.84 acre at a cost of ₹ 999.24 crore.

Audit reviewed the progress of land acquisition in East Champaran[149]. The Railway Administration in July 2005 requested Collector/East Champaran to expedite the land acquisition of 962.59 acre (involving 49 Villages) for the construction of Hajipur - Sagauli New Line. In response, the Collector/East Champaran submitted (February 2006) an Estimate for ₹ 58.76 crore. Afterwards several requests were made from State authorities to Railway Administration for immediate deposit of ₹ 58.76

[149] District East Champaran (Acquisition of Land km 38.4 to km 149.83), Estimated land requirement: 802.050 acre, Rate per acre: ₹ 99.28 lakh, Estimated amount: ₹ 796.28 crore, Land actually acquired: 227.18 acre, Amount paid: ₹ 797.44 crore.

crore (in April, May, July and October 2006) so that land acquisition process may not stop. However, the Railway Administration did not deposit the same and considered demand of ₹ 58.76 crore for acquisition of 962.59 acre land being too high.

On enactment of Bihar Land Acquisition, Resettlement and Rehabilitation Act, 2007, State Authority/Champaran revised (March 2007) the cost of land to ₹ 98.72 crore (962.59 acre). Railway Administration deposited ₹ 17 crore (31 March 2007). In May 2007, Railway Administration requested State Authority/Champaran to put on hold payment to land losers and declaration of award until the issue of cost is resolved. However, after seven months, Railway Administration requested (December 2007) Collector/East Champaran to make payment to land losers but no further payment was made by it to State authority till 31 January 2012.

District Magistrate/East Champaran submitted (January 2012) again a Revised Estimate of ₹ 350.84 crore for 49 villages. A demand of ₹ 333.84 crore (₹ 350.84 crore minus ₹ 17 crore) which included the remaining amount of ₹ 3.20 crore for 28 villages was made. In the Revised Estimate, the estimated cost of 28 villages was still ₹ 20.20 crore. The possession of these land had already been provided to Railways as per sub section 3 (a) of section 17 of Land Acquisition Act, 1894.

Railway Administration again requested (February 2012) the District Magistrate/East Champaran to review the amount of demand for 21 villages where land acquisition was yet to be made. No action was taken to make payment of ₹ 3.20 crore. However, the Dy. Chief Engineer/Con/II/HJP had sent (March 2012) a proposal to Chief Engineer/CON/North/MHX for making payment of balance amount of ₹ 3.20 crore (*i.e.* balance amount of 28 villages) to District Authorities. In this letter, it was clearly mentioned that fund was available during current financial year (2011-12) under Pink Book Item No.12 and the reasonability of rates for these 28 villages were also accepted. Again in February 2013, the District Magistrate/East Champaran demanded ₹ 3.20 crore for 28 villages which was already acquired by Railway Administration. However, no payment was made.

In January 2016, District Magistrate/East Champaran revised the cost of entire 49 villages as per Central Government Revised Land Acquisition Act, 2013 which was effective from 1 January 2014. Under Section 109 of this Act, Bihar Government also revised earlier Act w.e.f. 27 October 2014. Resultantly, the estimated cost of all 49 villages escalated to

₹ 796.28 crore (₹154.41 crore for 28 villages for which land acquisition was already made and ₹ 641.87 crore for remaining 21 villages) *i.e.* about eight times the estimated amount in the year 2007 (*i.e*. ₹ 98.72 crore).

Railway Administration paid the entire amount of ₹ 796.28 crore (₹ 17 crore on 31 March 2007, ₹ 365 crore on 18 August 2016 and ₹ 414.28 crore on 18 October 2017) demanded by State Authorities. Railway Administration did not address the payment issue in right earnest for the land already possessed (land of 28 villages). Railway Administration did not make payment of ₹ 3.20 crore {₹ 20.20 crore minus ₹ 17 crore (which was already paid for 28 villages)} on priority basis which resulted in cost enhancement for acquisition of land for 28 villages (227.55 acre) to the tune of ₹ 154.41 crore from earlier valuation of ₹ 20.20 crore.

Railway Administration had to incur an additional expenditure of ₹ 134.21 crore which could have been avoided, provided Railway Administration had paid the balance amount of ₹ 3.20 crore on time.

The matter was taken up with Zonal Railway Administration in June 2019. In their reply, Railway Administration stated (November 2019) that ₹ 3.20 crore as balance 20 *per cent* of 28 villages was not paid at the appropriate time of demand due to paucity of funds/allotment. Further, award (Punchat) of 28 villages was not declared by East Champaran District Authorities even after payment of 80 *per cent i.e.* payment of ₹ 17 crore.

Reply of Railway Administration was not acceptable as the fund was available during the financial year under Pink Book Item No. 12. Further, District Collector, East Champaran vide letter dated 19 February 2013 clearly stated that due to non-deposit of balance amount of 28 villages, the award could not be made. Land acquisition policy was changed in 2014 and Railway Administration had sufficient time of about seven years for paying the balance amount of ₹ 3.20 crore.

Thus, lack of a prudent decision from Railway Administration resulted in avoidable extra expenditure of ₹ 134.21 crore on acquisition of land of 28 villages.

The matter was taken up with MoR in August 2020; no reply was received (February 2021).

3.4 Avoidable excess expenditure and blocking of capital with National Highway Division of Government of Odisha: East Coast Railway

As per the Memorandum of Understanding between Ministry of Railways (MoR) and Ministry of Road Transport & Highway (MORTH), there shall be no levy of supervision charges, departmental charges, maintenance charges, *etc*. in respect of construction of Road Over Bridge (ROB) where Railway track crosses National Highway. In contravention, East Coast Railway Administration paid these charges for which demands were raised by NH Division of Government of Odisha for construction of ROB No. 70 on Khurda Road - Bolangir new line. This resulted in avoidable expenditure of ₹ 6.92 crore.

Ministry of Railways (MoR) and Ministry of Road Transport & Highway (MORTH) signed a Memorandum of Understanding (MoU) in November 2014 for replacement of all Level Crossings on National Highway (NH) corridors by Road Over Bridges (ROBs)/Road Under Bridges (RUBs) in next five years subject to availability of fund. For construction of ROB where new railway line/gauge conversion lines cross NH, Clause A (4) of the MoU prescribe that MORTH/NHAI shall not levy supervision charges, departmental charges, maintenance charges and land lease charges. However, the MoU was silent on the ownership of the asset created in New Lines/Gauge Conversions and future revenue sharing, if any.

In Khurda Road - Bolangir New Broad Gauge (BG) Railway line which crosses NH-57, a provision of ROB No. 70 was made in the Detailed estimate at ₹ 1.03 crore in January 2007. MoR sanctioned the Detailed estimate in January 2011. Accordingly, East Coast Railway (ECoR) prepared a General Arrangement Drawing (GAD) in October 2013 for ROB No. 70 for approval by MORTH. While approving the GAD in April 2015, MORTH mentioned that the work would be executed as per the MoU of November 2014 signed between MORTH and Railway. The work would be executed by State Public Works Department as per NH standard/MORTH guidelines as a deposit work. The work was to be completed within two years (*i.e*. by 2017).

Subsequently, NH Division of Government of Odisha prepared a Detailed estimate of ₹ 48.72 crore[150] for construction of the ROB and forwarded

[150] ₹ 33.46 crore of civil engineering work, ₹ 5 crore for land acquisition, ₹ 3.09 crore as nine *per cent* agency charges and remaining ₹ 7.18 crore included one *per cent* quality control charge, 2.8 *per cent* of contingencies, 1.5 *per cent* for work charged establishment and five *per cent* per annum cost escalation *etc.*

(September 2015) to ECoR for countersignature and placement of fund. The estimate included an item 'Land Acquisition' - ₹ five crore. Without verifying the Detailed estimate of ₹ 48.72 crore, Finance Department of ECoR in November 2015 proposed release of fund in three phases[151]. However, in December 2015 the entire amount of ₹ 48.73 crore was deposited with the Executive Engineer, NH Division in anticipation of completion of the ROB work by 2018.

Audit collected the status of the ROB work from NH Division - Bhubaneswar, Government of Odisha and observed the following:-

- As of May 2019 (*i.e.* after a lapse of 3.5 years) out of total ₹ 48.73 crore deposited, the total expenditure was only ₹ 7.57 crore[152] and the financial progress of the work was only 16.8 *per cent*. ECoR justified[153] the one-time deposit of fund instead of phase wise release of fund stating that it would facilitate completion of ROB by 2018. ECoR gave the concurrence for depositing the full amount with NH Division as was being done by Railways for executing deposit works of other Departments. This resulted in blocking of Railway's capital of ₹ 41.16 crore with NH Division of Government of Odisha. It was further observed that in respect of deposit works, the NH Division of Government of Odisha follows the Central Public Works Department (CPWD) Manual procedure for levy of various charges towards cost of establishment. It charged ECoR 'departmental charges' and 'quality control charge'. However, Clause A (4) of the MoU signed between MOR and MORTH stipulates that, departmental charges and supervision charges are not payable by Railway. ECoR made the payment of these charges as demanded by Government of Odisha as agency charges, quality control, cost of work charge establishment, *etc.*
- Out of the total requirement of 3.295 acres of land, 2.032 acres (62 *per cent*) had already been acquired by NH Division of Government of Odisha in their own name at a cost of ₹ 1.46 crore. Thus, remaining 1.263 acre of land (38 *per cent*) would cost around ₹ one crore. Hence, the estimation of ₹ five crore for land acquisition was unrealistic and there was excess expenditure of about ₹ 2.5 crore on account of land.

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[151] In November 2015, Finance Department had not justified the release of full amount of ₹ 48.72 crore in view of interest (dividend) component. Instead, they viewed the release of fund as 30 *per cent* each in 2015-16 and 2016-17 and the balance 40 *per cent* in 2017-18 considering the completion of ROB by March 2018.

[152] ₹ 6.07 crore of civil work, ₹ 1.47 crore of land acquisition and ₹ 3.15 lakh of contingency

[153] The work may get delayed on the context of partial deposit of the fund as the executing department may not be in a position to holistically plan the entire ROB citing inadequacy of available fund.

Moreover, Railway was not the owner of the land purchased and ECoR failed to claim its right on the asset created from its fund. Ownership issue was not clearly spelt out in the MoU.

- As per records maintained by NH Division, Odisha, the estimate was revised with a downward variation of ₹ 0.47 crore. The Revised estimated figure was reduced to ₹ 48.26 crore from ₹ 48.73 crore. The excess amount of ₹ 0.47 crore was not returned by NH Division to ECoR.

The matter was brought to the notice of MoR in November 2019. MoR, in its reply, stated (December 2020) that demand was made by NH Division for agency charges and not the departmental charges and supervision charges. It was further stated that payment of charges for quality control and establishment were not clearly spelt out in the MoU. However, NH Division has been requested (18 November 2019) to refund ₹ 6.92 crore deposited with them.

Reply of MoR is not convincing. As per CPWD Manual, agency charges and departmental charges are one and the same. Quality control as a process is embedded in the execution itself. There was no provision in the estimate for the quality control/ agency charges *etc*. ECoR failed to scrutinize the estimate submitted by NH Division and accepted the same. This resulted in avoidable payment of ₹ 6.92 crore (including land acquisition cost). Though ECoR had raised the issue with NH Division in November 2019, NH Division has not refunded/ agreed to refund the charges as demanded by ECoR.

3.5 Avoidable extra expenditure due to faulty planning in embankment work: South Eastern Railway

South Eastern Railway took up the work of embankment as part of doubling in Andul - Baltikuri section without following codal provisions and guidelines of Research, Designs and Standards Organisation (RDSO). This resulted in embankment failure and bulging/slippage at different locations with consequential extra expenditure of ₹ 14.08 crore on rehabilitation work.

In order to obtain a fair idea[154] of the soil classification and characteristics on the proposed routes/route, the fieldwork during Preliminary Survey should cover a soil survey by sampling at suitable intervals. Further,

[154]Para 409 and 425 of the Indian Railways Code for the Engineering Department

during Final Location Survey detailed subsoil exploration[155] is necessary to check stability of structure against failure and to predict anticipated settlement[156].

As per Para 2.1 of Annexure –III of "guidelines for earthwork in Railway projects" (July 2003), the required minimum factor of safety should be greater than 1.40 for embankment construction. Moreover, soil with high plasticity[157] is prohibited in top three meter of embankment as per para 5.1.1. of Research, Designs and Standards Organisation (RDSO) guidelines No GE:G-I of July 2003.

A contract was awarded by South Eastern Railway (SER) in June 2015 for execution of earthwork[158] and other miscellaneous works at a cost of ₹ 24.35 crore in connection with the Andul - Baltikuri doubling work (length 1.4 Km between Ch: 2750 and Ch:4190). The entire length of the proposed work was adjacent to a stagnant/slow moving water body (pond). The target date of completion of work was December 2016. The work was completed in March 2018 and final bill for the work was passed in December 2018 for an amount of ₹ 0.66 crore with total contractual payment of ₹ 29.60 crore.

The drawing for the construction of retaining wall was approved by the Chief Engineer/Construction, in November 2015 (after award of the contract in June 2015). Contrary to codal provisions, no soil testing and slope stability analysis was carried out before award of the contract. In the approved drawing, it was specifically mentioned that "No Soil report is available".

Audit noted that the following failures occurred in the embankment:

(1) On 14 October 2017, the entire stretch of embankment constructed with retaining wall but without pile foundation (length 280 meter between Ch:3910 and Ch:4190) failed.

[155]Para 3.4.3, 4.4.3 and 5.1.1 of the Research, Designs and Standards Organization (RDSO)'s Guidelines for earthworks in Railway Projects

[156] Settlement means soil movement in the vertical direction typically induced by stress changes/ decrease in depth of embankment.

[157] Inorganic clays of CH type.

[158] Blanketing, major bridge, minor bridges, retaining wall, S&T relay room, end-goomties (Goomty is often used for small covered shelter. A small cabin, as for the guard at a level-crossing or even any small structure covering a lever frame or other fixed equipment).

(2) Subsequently, there were incidences of failure (August 2018) of the newly constructed goomty[159] between Ch: 2750 and Ch: 2890 and at two locations (Ch: 2890 and Ch: 3340) of the embankment (September 2018). Both incidences occurred in the stretch where embankment was provided without retaining wall. The primary cause of failure was differential settlement of the foundations supporting the structures.

RDSO was requested to investigate the cause of failure and suggest remedial measures (November 2017). RDSO, in their report (December 2017) identified the following lapses leading to failure of the embankment:

(i) The subsoil (foundation soil) was highly compressible in nature and of poor strength characteristics. No ground improvement work was done before undertaking embankment work.

(ii) CH type soil with high plasticity was used in the failed stretch which was not permitted as per RDSO guidelines.

(iii) Railway had not carried out any slope stability analysis before construction of embankment. In contravention of RDSO's Guidelines, factor of safety was 0.428, which was much lesser than the prescribed minimum factor of 1.40. However, the failed stretch (without pile foundation) had a factor of 0.428 only.

RDSO suggested a host of remedial measures for the failed embankment which included construction of retaining wall of 2.7 meter height with pile foundation and providing side slope of 3.75: 1 in the entire failed stretch.

On the basis of RDSO's recommendations, SER Administration took up the following rehabilitation works:

(i) Reconstruction of the embankment with pile foundation at Ch: 3910 to Ch: 4190. The work was awarded in March 2018 and completed in August 2019, an amount of ₹ 7.29 crore was paid to the contractor till March 2020.

(ii) Reconstruction of the failed goomty and two locations of the embankment between Ch: 2890 and Ch:3340. Pile foundation was used at both the failed locations. The work was awarded in May 2019 at a cost of ₹ 10.86 crore.

[159] Goomty is often used for small covered shelter. A small cabin, as for the guard at a level-crossing or even any small structure covering a lever frame or other fixed equipment.

The Railway Administration had to take up the above two rehabilitation works due to improper soil survey and absence of prescribed slope stability analysis, prescribed in RDSO's guidelines. This resulted in incurring avoidable extra expenditure of ₹ 14.08 crore[160]. This included ₹ 4.55 crore extra expenditure on rehabilitation of first failed location and ₹ 9.53 crore extra expenditure on rehabilitation of embankment and re-construction of failed goomty.

The matter was taken up with the Railway Administration in August 2019. In reply, Railway Administration stated (January 2020) that to avoid any delay in execution of work, tendering process was initiated simultaneously along with finalisation of drawing/ design. Where height of embankment was more than two meter retaining wall on pile foundation was provided. At locations where the height of embankment was less than two meter, the retaining wall was constructed without pile foundation.

Railway's reply was not acceptable because they did not consider soil report at the time of finalization of the drawing for retaining wall. Railway's decision to undertake embankment work by providing retaining wall without pile foundation between Ch:3910 and Ch:4190 was incorrect since initial embankment failure occurred only in this particular stretch. This was further substantiated from the fact that length of bank having retaining wall with RCC pile foundation was not affected. RDSO's failure report also indicated that CH type of soil was used, which was not permissible as per RDSO's Guidelines. No slope stability analysis was conducted to achieve minimum factor of safety.

The matter was taken up with MoR in August 2020; no reply was received (February 2021).

[160] (i) The cost of providing pile foundation at the first location of failure was assessed at ₹ 2.74 crore. Thus rehabilitation work resulted in extra expenditure of ₹ 4.55 crore (₹ 7.29 crore (-) ₹ 2.74 crore). (ii) For reconstruction work of failed goomty and two locations of embankment, contract was awarded at ₹ 10.86 crore (inclusive of piling work for ₹ 1.33 crore, which is an essential component). This resulted in extra expenditure of ₹ 9.53 crore (₹ 10.86 crore minus ₹ 1.33 crore).

3.6 Abnormal delay in construction of Road Over Bridge at Gudur leading to prolonged public inconvenience: South Central Railway

Road Over Bridges (ROBs) are built to facilitate safe movement of public by eliminating Level Crossings (LCs). Construction of ROB in lieu of LC was delayed on account of finalization of General Arrangement Drawing (GAD). Revision of GAD led to increase in cost as well as extra liability of ₹ 15.40 crore on the Railway Administration which should have been borne by the State Government. Construction of ROB was yet to be completed and the LCs were still in operation. Thus, the provision of ROB to the public is yet to fructify even after 20 years from the date of initial sanction.

Level Crossings (LCs) are potentially unsafe locations, which besides being operational bottlenecks for Railways, also are congestion points for road users. To overcome this, Railways build Road Over Bridge (ROB)/Road Under Bridge (RUB) with the participation of State Governments either on cost sharing or on deposit terms. In terms of Para 1816 of Engineering Code, cost of construction was to be shared between the Ministry of Railways (MoR) and State Government @ 50:50.

Gudur Junction is a busy junction station on the High Density Network connecting Vijayawada - Chennai and Vijayawada - Renigunta. The line branches into two on the Chennai side. Two LCs are situated on these two lines which connect East and West portions of Gudur Town as also the industrial area situated between these two lines.

Government of Andhra Pradesh requested for a ROB across the tracks for the benefit of public. Hence, MoR sanctioned (2001) the construction of ROB on cost sharing basis at an anticipated cost of ₹ 7.36 crore (Railway's Share ₹ 3.27 crore and State Government share ₹ 4.09 crore). During the joint survey, Railway Administration stated (August 2000) that there was no connection provided to the Industrial area between Chennai and Renigunta lines. Accordingly, the State Government may have to take necessary steps to provide this connection as deemed fit.

A General Arrangement Drawing (GAD)[161] is usually prepared initially which must be approved by all the parties concerned. There was delay from the State Government in approving the GAD. The GAD was finally

[161]GAD present the overall picture of the structure to be constructed.

approved (August 2006) without the connection between the Industrial area between Chennai and Renigunta lines (3rd Arm[162]).

During a joint inspection (November 2007), it was stated that a Detailed survey is to be conducted by Railways to study the feasibility of providing 3rd Arm. This survey was necessitated because in the original proposal the 3rd Arm was not covered. In the joint inspection, State Government officials requested Railways for provisioning a 3rd Arm. Based on the revised proposal, a revised GAD was prepared with provision of 3rd Arm which was approved by State Government in July 2010. Further, the SCR Administration prepared (2012) a Detailed estimate and submitted to MoR for sanction. MoR sanctioned (2012) the combined Detailed estimate at a cost of ₹ 43.09 crore which included the cost of 3rd Arm and Railway's total share was ₹ 18.67 crore.

Para 1815 of the Engineering Code stipulate that if the construction of a bridge is found necessary otherwise than in pursuance of Railway's liability under the Railway Act, its cost will be borne by the Railway if its necessity has arisen from railway requirements. In case, necessity has arisen from the growth of road traffic or other requirements of the Road Authority, the cost of additional facilities would be borne by Road Authority.

The work on the bridge portion and part of 3rd Arm was taken up by the Railways (January 2013) and completed by March 2015. Approach portion on the East side was taken up by the Government of Andhra Pradesh and completed but not connected to the bridge proper. The work on the West side was yet to be taken up (March 2019).

Figure 3.7: East Side (approach was completed but not connected to bridge proper-May 2020)

Figure 3.8: West Side (Approach work yet to be taken up - May 2020)

[162]It is the bridge portion that is required to be constructed to the industrial area situated between the two lines *i.e.* Vijayawada-Renigunta and Vijayawada - Chennai lines

MoR, while giving directions to address the inordinate delay in the ROB/RUB, had also stated (September 2011) that the sponsoring authority will give an undertaking in case of any increase in cost due to subsequent changes in the approval of GAD, the extra cost would be borne by the party initiating the change.

Audit observed that on account of abnormal delay by the Government of Andhra Pradesh in fixing the alignment and subsequent revision of

Figure 3.9: West Side (as on May 2020) 3rd Arm

proposal to include the 3rd Arm, there was delay in commencement of the work by a decade. The cost of the work increased from ₹ 7.36 crore (2001) to ₹ 43.09 crore (2011). Railway's share increased by ₹ 15.40 crore from ₹ 3.27 crore to ₹ 18.67 crore. Till date, only one approach on East side and part of 3rd Arm was completed and the remaining approach portion on West side was yet to be taken up by the Government of Andhra Pradesh on account of litigation issues. Therefore, the LCs could not be closed and is in operation at MoR's cost.

Thus, due to delay in fixation of alignment and subsequent revision of GAD, the provision of ROB to the public could not be built till date. In addition, the extra liability of 3rd Arm as well as increase in cost of the estimates by ₹ 15.40 crore is a liability to MoR. This extra liability should have been borne by the Government of Andhra Pradesh. The cost of operation and maintenance of LCs due to the above factors was an additional liability, which must be borne by the Government of Andhra Pradesh. Thus, an important public service of providing safe passage to general public is yet to fructify. The State Government's aim of providing

road connectivity to the industrial area between Chennai and Renigunta lines remains unachieved.

The matter was taken up with MoR in June 2020; no reply was received (February 2021).

3.7 Damage to Track: North Western Railway

Assurance was given by the Ministry of Railways in 2014 to Public Accounts Committee (PAC) that suitable action has been taken to eliminate the problem of damage to tracks. However, North Western Railway Administration failed persistently to properly plan the movement of loaded rakes by providing locomotives of suitable capacity and Banker locos in the sections having steep gradients. This led to damage to track in Ajmer Division and consequential avoidable expenditure of ₹ 6.96 crore on replacement/reconditioning of rails.

Each Railway Station is governed by the Station Working Rules (SWRs) for that particular station. The SWRs *inter-alia* mention gradients in the yard and the adjacent block sections along with the locations and any gradient which are steep enough to warrant special precautions in operations. The Section Controller is responsible for planning and running of goods trains through the best possible path. Depending on the load, a suitable loco is to be provided for its haulage by the Loco Controller.

The issue regarding loss due to damage to track in Ajmer Division of NWR was earlier reported through Paragraph 3.7 of Audit Report No. 34 of 2010-11 (Railways). It was reported that the track was damaged in certain stretches with steep gradients in Ajmer Division due to stalling/wheel burns/scabbing by excessive tractive effort applied by the locomotives to negotiate such gradients.

In the Action Taken Note, Ministry of Railways (MoR) stated (March 2014) that use of a single locomotive of higher horsepower (WDG4) equipped with latest technology had practically wiped off the problem of damage to track. It was further stated that a Joint Procedure Order (JPO) was issued in December 2009 based on the problem faced due to haulage of heavier loads by single locomotive to reduce and eliminate stalling and thereby damage to track. It was also stated that due to technological up-gradation in the locomotives, the wheel slipping and track damage due to stalling had also been practically eliminated.

The position of damage to track in Ajmer Division was reviewed (March 2019) afresh to evaluate the progress on assurance given by the MoR

that damage to track was a short lived problem and it had been eliminated.

Review of records of Engineering Branch of Ajmer Division revealed that during August 2014 to August 2018, four contracts at a cost of ₹ 3.13 crore were awarded for the work of reconditioning of wheel burnt rails by Spray - Powder technique in Madar - Palanpur section including one contract catering to Ajmer - Chittaurgarh section. These works were justified on the grounds of excessive wheel burns/scabbing of rails due to sudden application of brakes, wheel slips in steep gradient, absence of banking power *etc*. Due to these wheel burns, cupped weld joints and scabbed rails, there was a problem of frequent loose packing in 52 kg rails rendering the track prone to fracture and consequent problems in maintenance of track parameters. An expenditure of ₹ 3.77 crore was incurred against these four contracts on reconditioning of rails (up to July 2019).

Scrutiny further revealed that the cases of damage to track due to wheel burn/scabbing occurred frequently. The rails damaged due to wheel burn/scabbing amounting to ₹ 3.19 crore were replaced departmentally during 2015 to 2019. Excessive tractive effort applied by the Loco pilot to negotiate the gradient led to damage to track on account of wheel burns/scabbing. The damaged rails were not only being frequently attended to/repeatedly replaced but speed restrictions were also imposed in the sections where damage to track occurred. This was leading to excess fuel consumption and loss of earning capacity.

Audit also observed that goods trains were not being operated on right powering in Ajmer Division. In response to audit, Operating Department, Ajmer confirmed (June 2019) non-plying of goods trains with right powering arrangement because of non-availability of high capacity locomotives.

The issue regarding loss due to damage to track was taken up with General Manager/NWR in August 2019. In reply, Senior Assistant Financial Adviser/NWR, Jaipur stated (October 2019) that upgraded locos were being provided to trains as per the JPO. With the improved locomotives, the incidences of damage to track had been practically wiped off. The cases of stalling had been substantially reduced after issuance of JPO in December 2009. Due to technological inputs in the locomotives, the wheel slipping and damage to track had also been practically eliminated.

The reply of Railway Administration was not acceptable. Execution of four contracts for re-conditioning of rails (justified on the grounds of excessive

wheel burns/scabbing of rails) departmentally at a cost of ₹ 6.96 crore (during 2014 to 2019) amply proved that the damage to track occurred on a continuous basis. Wheel slipping and damage to track had not been practically eliminated as claimed by Railway Administration in their ATN as well as in the current reply.

Thus, Railway Administration failed to properly plan the movement of loaded rakes in the sections having steep gradients by providing locomotives of suitable capacity and Banker locomotives in the section warranting requirement. Hence, the problem of wheel slipping/burns/stalling of trains/scabbing of rails persisted for the last 12 years even after assurance given by MoR that this being a short-lived problem had been practically eliminated.

The matter was taken up with MoR in September 2020; no reply was received (February 2021).

3.8 Change in design and location of a bridge resulted in its abandonment and consequent infructuous expenditure: South East Central Railway

For the construction of a major bridge, contract conditions stipulated that soil test of the site was to be carried out by the contractor. However, Railway Administration conducted the soil test and handed over the report to the contractor. During execution, it was observed that the condition of the soil was not the same as was reported in the Railway's soil test report. Adverse soil condition prevented the contractor from completing the work. A new contract was awarded with a change of design and location of the bridge (Bridge No. 182) between IB and Brajrajnagar stations. This led to wasteful expenditure amounting to ₹ 6.73 crore incurred on the incomplete bridge, which was later on abandoned by the Railways.

Ministry of Railways (MoR) in August 1980[163]/October 2006[164], instructed that contracts for work should not be awarded unless soil test and site investigation have been completed. All plans, drawing and estimates should be duly approved/ sanctioned by the competent authority. The entire prerequisites may be completed in time before awarding of contracts.

[163] MoR's letter no. 80/W-2/3/33 dated 29 August 1980.
[164] MoR's letter no. 2005/BC/AP/3.3.12/2003-04 dated 17 October 2006.

A contract for construction of foundation, sub-structure, *etc.*[165] for a major bridge (Bridge No.182) between IB and Brajrajnagar station[166], was awarded (28 July 2010) to a contractor for ₹ 12.30 crore. The work was to be executed by well foundation and completed by 27 October 2012. As per the Schedule "A" of the contract, geotechnical investigation (soil test) of the site was to be carried out by the contractor. However, Railway Administration[167] did not allow the contractor to undertake the geotechnical investigation on the plea of infructuous expenditure and to save time. Railway Administration conducted the geotechnical investigation and handed over soil test report to the contractor for use in design of the bridge foundation.

Audit observed that in the geotechnical investigation conducted by Railway, the strata from bore hole A1 to P5 was found to be a mix of hard and soft black coal. For such conditions, well foundation was recommended. However, during execution of the work, it was observed by the contractor that the strata condition at site was hard rock.

The contractor could not complete the work within scheduled time as well sinking in hard rock had created a deadlock in progress of the work. After granting two extensions, the contract was finally terminated on 5 March 2014 after incurring an expenditure of ₹ 7.42 crore on this incomplete bridge.

After termination of the contract in March 2014, South East Central Railway (SECR) Administration engaged (January 2015) a consultant for soil investigation work and designing of bridge No.182. The suggestion of the consultant for a pile foundation on new alignment was accepted by the Railway Administration in July 2015.

Accordingly, a tender was floated in November 2015 for construction of bridge No. 182 at new location with pile foundation. The work was completed in May 2019 at a cost of ₹ 17.69 crore.

[165] Approaches including allied and miscellaneous works
[166] In connection with 3rd line between Champa-Jharsuguda
[167] Chief Engineer, Construction-I, Bilaspur.

Figure 3.10: Abandoned bridge constructed with Well foundation	*New bridge constructed with Pile foundation*

The matter regarding change in design as well as location of the Bridge No.182 between IB and Brajrajnagar station was brought to the notice of Railway Administration in August 2019. Railway Administration in October 2019 stated that as the geotechnical investigation was available and was part of GAD, there was no point in doing it again. There are always difficulties in well sinking encountered during construction work, which had to be rectified and for which provisions in the schedule were available. The decision of providing the well foundation had been taken by studying the geotechnical investigation report. Based on the advice of the consultant, decision was taken to go for pile foundation in place of well foundation. It was a technical decision to select appropriate option based on site/ time constraints.

The reply of Railway Administration was not acceptable because Railway's own soil investigation report was not conclusive (strata from bore hole A1 to P5 was a mix of both hard and soft black coal). However, during execution of the work, it was observed by the contractor that the strata condition at site was hard rock. Well sinking was a problem in the site due to presence of hard coal. Moreover, Railway Administration's reply was totally silent on the expenditure incurred on the unfinished bridge.

The fact remains that the work executed by the first contractor (₹ 7.42 crore) was abandoned and the work of construction of bridge was

awarded to another contractor at new/nearby location with pile foundation. There was a lapse in the decision making process and hence responsibility should be fixed.

Thus, change in design from well foundation to pile foundation as well as location of the Bridge No. 182 between IB and Brajrajnagar stations led to wasteful expenditure of ₹ 6.73 crore[168] on the incomplete abandoned bridge No.182.

The matter was taken up with MoR in May 2020; no reply was received (February 2021).

3.9 Non-implementation of Ministry of Railways directives resulted in non-realization of penalty from the contractors: South Central and East Coast Railways

Failure of Railway Administration to enforce the Ministry of Railways directives led to lack of coordination amongst the various agencies/departments resulting in non-realization of penalties.

Engineering works in connection with gauge conversion/doubling/third line require extensive digging work near the running track, in close vicinity of the working Signalling and Telecommunication (S&T) cables as well as electrical cables. While carrying out these works, cable cuts occur due to Joseph Cyril Bamford (JCB) machines moving along the tracks or by the digging works done by the contractors carrying out the Civil Engineering works. Such cable faults result in the failure of vital signal and telecommunication circuits and electrical installations.

Ministry of Railways (MoR) issued a Joint Procedure Order (JPO) in December 2004 for execution of works in the vicinity of working signal and telecommunication cables.

In order to minimize and control cable cuts while carrying out digging works near existing S&T and electrical cables, MoR issued (June 2013) a revised JPO[169]. The JPO stipulated, inter-alia, the following:

- S&T Department, RailTel and Electrical Departments shall provide a detailed cable route plan. The cable route plans shall be made

[168] The first contract was terminated on 5 March 2014. The work executed by the first contractor was abandoned after incurring ₹ 7.42 crore. Out of ₹ 7.42 crore, Railway Administration has recovered ₹ 61,53,350 (Bank Guarantee) and ₹ 7,28,300 (Security Deposit) as on 14 January 2020. Total recovery = ₹ 61,53,350 plus ₹ 7,28,300 = ₹ 68,81,650 or ₹ 0.69 crore. Hence, wasteful expenditure = ₹ 7.42 crore minus ₹ 0.69 crore = ₹ 6.73 crore.

[169] Telecom Circular No. 17/2013

available to the Divisional officers of the Engineering Department for circulation of the same down the line.

- Concerned Engineering Department has to take permission in writing from the S&T/Electrical department for any digging activity. Written permission and cable plan was to be issued to the contractor by the Engineering officials for commencement of work.
- In case, if damage was caused to Optic Fiber Cable (OFC)/quad cable during execution of the work, the contractor was liable to pay a penalty of ₹ one lakh to ₹ 1.5 lakh (depending on type of cable)per location for damaging the cable.
- If a cable was cut by an agency that was not permitted to execute any work, First Information Report (FIR) should be lodged with Railway Protection Force (RPF).
- No new OFC or quad cable shall be laid close to the existing track. It shall be laid close to the Railway Boundary on one side of the railway track to the extent possible to avoid any interference with the future works.

Review of records of S&T Department of South Central Railway and East Coast Railway for the period April 2013 to 2019 revealed the following:

South Central Railway

Cables were found damaged at 586 locations by the private contractors engaged by the Engineering Department while undertaking digging works. S&T Department had informed the concerned Departments for levying the penalty of ₹ 6.63 crore. No follow up action was taken to recover the amount due to lack of coordination among the Departments. Audit observed that cable plans were provided by the S&T Department to Engineering Department but the details of circulation of the same to the field units were not available on record. It was also observed that details of permission sought for/granted by Divisional Officers were not available on record and written permissions along with cable plans were not handed over by the engineering officials to the contractors. Contact numbers of the persons involved in the digging works were not made available by the engineering control to the test room. In respect of digging works executed without permission, no FIRs were lodged with the RPF.

Thus, non-implementation of MoR's orders resulted in non-realization of penalty of ₹ 6.63 crore.

East Coast Railway

The number of cable cut incidences in East Coast Railway during the period May 2015 to December 2019 was 498. Although MoR reiterated on minimizing the cable cuts, due to lack of coordination between S&T Department and executing Departments, there was no appreciable improvement in reducing the cable cuts. During May 2015 to November 2017, for 206 cases S&T Department raised bills for ₹ 2.47 crore with the Engineering Department and other agencies. However, only ₹ 0.12 crore was realized as penalty. Further during December 2017 to December 2019, 292 cable cuts occurred and penalty of ₹ 3.61 crore was raised against the concerned authorities. Even though the bills were raised, these were not followed up for realization of penalties. Thus, in ECoR, penalty amount of ₹ 5.96 crore was not recovered as stipulated in the MoR's orders.

The issue was raised with the Railway Administration in February 2020. The remarks were yet to be furnished by the Railway Administration.

Thus, non-implementation of MoR's directives resulted in non-realization of penalties from the various Departments/agencies in SCR and ECoR. An amount of ₹ 12.59 crore was still outstanding for recovery in 1,084 cases.

The matter was taken up with MoR in August 2020; no reply was received (February 2021).

3.10 Wasteful expenditure due to award of contracts for signaling works without finalization of Engineering Scale Plan and Signal Interlocking Plan: Western Railway

Injudicious decision of Railway Administration in awarding two signaling contracts without finalization of Engineering Scale Plan (ESP) and Signal Interlocking Plan (SIP), in violation of provisions of Indian Railway Code for Engineering Department led to wasteful expenditure of ₹ 4.78 crore.

Para 604 of Indian Railway Code for Engineering Department states that 'in case of yard re-modeling, line capacity works *etc*. estimates should be based on plans approved and signed by the concerned Departments'. Ministry of Railways (MoR)'s instructions[170] enjoin that detailed drawings and estimate should be available with the Executive. Adequate field data

[170] Ministry of Railways instructions dated 21 September 1972, 29 August 1980 and 22 February 1985

should be collected in time as accurately as possible for preparation of these drawings and plans before inviting tenders.

A work[171] was sanctioned (August 2006) by MoR at a lump sum cost of ₹ 15 crore. Revised estimate for ₹ 24.31 crore was sanctioned (October 2009) on account of cost escalation and change in scope of the work. This revised estimate included cost of related signaling work for which provision of ₹ 7.51 crore was made in the estimate.

Audit observed that two signaling contracts[172] were awarded in connection with the above work. The works of Phase-I were successfully commissioned in February 2011. M/s Siemens commenced supply of S&T material on 7 July 2010 and completed supply of 82 *per cent* of quantity by 25 October 2013. In respect of the other contract by M/s D.N.S.V Ramana Gupta, 78 *per cent* of work was executed till 20 September 2013 as per the contract agreements.

Engineering Scale Plan (ESP) is primarily used for yard plans exhibiting the track as a single line, showing all running lines, loop lines, other yard lines, sidings etc. Signal Interlocking Plan (SIP) is used for placing the signal apparatus on the track at appropriate places. SIP is prepared based on ESP. The Phase-II work could not be commenced due to non-finalization of the plans. Extensions on Railway account without levy of liquidated damages were repeatedly granted to both the contractors citing the reason 'Non-clarity of work due to non-finalization of ESP' and 'only tentative plan received'.

The contractors commenced their work from 7 July 2010 and 3 March 2010 respectively without finalization of ESPs and SIPs.

Finally, proposal for short closure of the contract awarded to M/s D.N.S.V Ramana Gupta was approved by the Dy. CSTE/C/BRC on 20 September 2013 on the grounds that 'ESP & SIP had not been finalized'. The contract awarded to M/s Siemens Ltd was approved for short closure by CAO/C/CCG on 24 September 2016 citing the reason 'plans not yet finalized and contract for indoor signaling work was very old and yard work was not feasible'.

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[171] Phase- I Providing platform and line No. 7 and Phase – II Conversion of line No. 2 as UP main line and line No. 4 as DN main line at Vadodara (BRC) (P)

[172] One contract for indoor signaling works awarded (November 2009) to M/s Siemens Ltd at a cost of ₹ 4.97 crore. Another contract for outdoor signaling work awarded (December 2009) to M/s D.N.S.V Ramana Gupta at a cost ₹ 1.96 crore.

Audit also noted that Railway Administration transferred (May 2017) material worth ₹ 2.01 crore supplied[173] by M/s Siemens Ltd to another work. This material was meant for a Route Relay Interlocking (RRI) work, while the work to which it was transferred was an Electronic Interlocking (EI) work. Thus, there was no possibility to use the transferred material. Further, cable worth ₹ 2.24 crore (supplied by Railway Administration) was laid in the yard but remained unutilized due to non-commissioning of RRI work. An amount of ₹ 0.52 crore paid to the contractor for outdoor work was unfruitful as the work remained incomplete due to short closure of the tender.

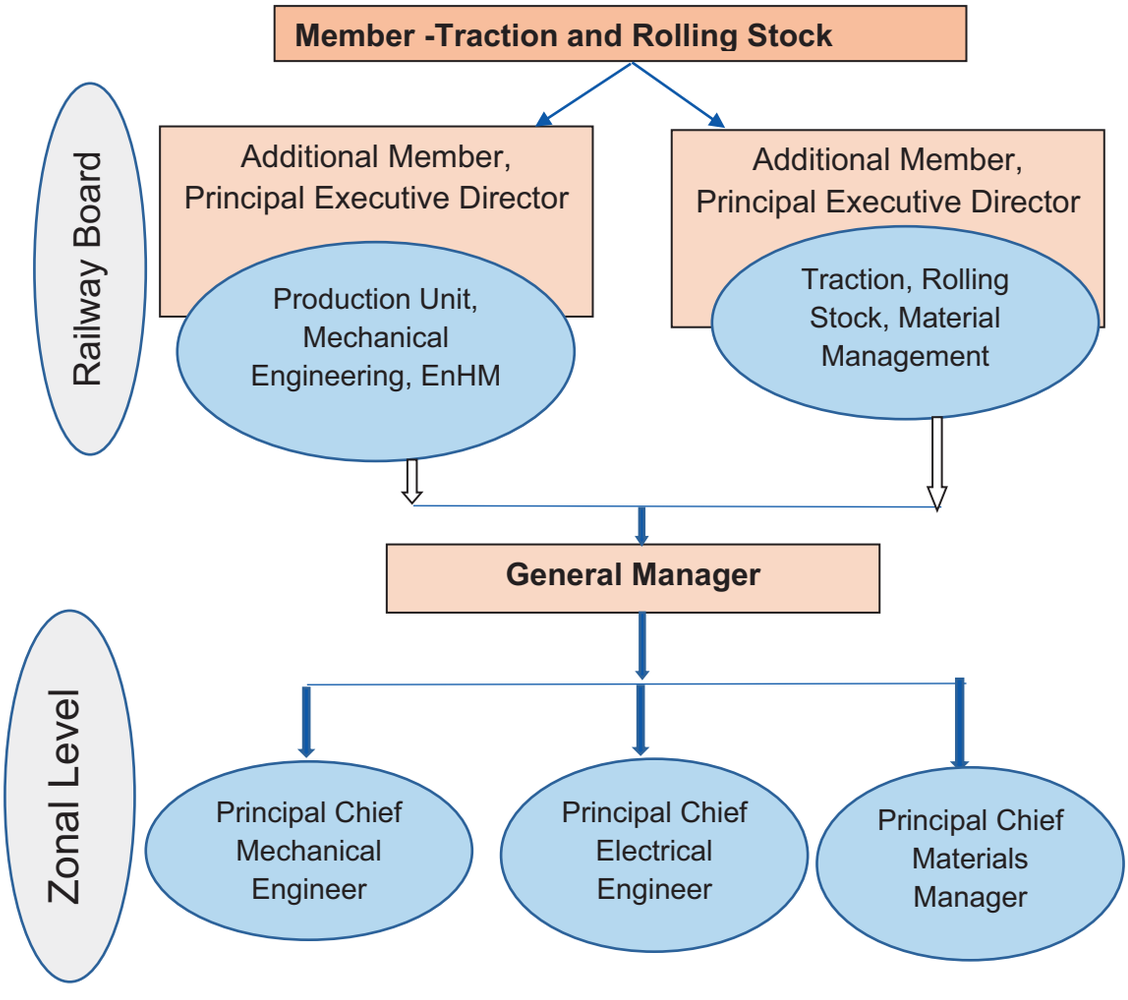
Thus, award of two signaling contracts without ensuring availability of the final ESP and SIP in violation of provisions contained in Para 604 of Indian Railway Code for Engineering Department and MoR's directives issued from time to time led to wasteful expenditure of ₹ 4.78 crore.

The matter was taken up with MoR in July 2020; no reply was received (February 2021).

[173] Material Received between 7 July 2010 and 25 October 2013

Chapter 4 – Traction and Rolling Stock

Member (Traction and Rolling Stock) at Railway Board is overall in-charge of Mechanical Department including Workshops and Production Units as well as Material Management Department. The works related to Electric Multiple Unit/Mainline Electric Multiple Unit (EMU/MEMU) and electrical maintenance of all coaching stock is also the responsibility of the Member (Traction and Rolling Stock). Member (Traction and Rolling Stock) is also responsible for Environment and Health Management (EnHM).



At Zonal level, Principal Chief Mechanical Engineer (PCME) is responsible for overall supervision and maintenance of all coaches, wagons *etc.* Chief Workshop Engineer (CWE) is overall in-charge of the workshops, which undertake maintenance of rolling stock and related items. Principal Chief Electrical Engineer is overall in-charge of electrical maintenance of electric rolling stock, which includes electric Locos, Electric Multiple Units etc. He is also in-charge of the Electric Loco

sheds, Electric Workshops, General services and Over Head Traction services.

Total revenue expenditure on repair and maintenance of rolling stock[174] in workshop during 2018-19 was ₹ 16,187.15 crore[175]. Operating expenses on rolling stock and equipment was ₹ 14,097.56 crore[176] during 2018-19. Further, capital expenditure on Production Units[177] during 2018-19 was ₹ 25,691.28 crore. During the year, apart from regular audit of vouchers and tenders, 1,009 offices of the Mechanical Department were taken up for inspection.

Materials Management Department is responsible for planning, procurement of various types of stores required for operations and maintenance of trains. These include supply of spare parts, components, fittings, sub-assemblies to production units, maintenance, and manufacturing workshops. The Department is also responsible for total inventory management of all stores, their purchasing and distribution to consignees. Besides this, Materials Management Department also carries out disposal of scrap items through public auction and tenders (selected items).

At the Zonal level, Principal Chief Materials Manager is the principal head of the Department who is assisted by Chief Materials Managers and Deputy Chief Materials Managers. The Division is headed by Senior Divisional Materials Manager reporting to Divisional Railway Manager. Total expenditure of the Stores Department during 2018-19 was ₹ 1,143.26[178] crore. During the year, apart from regular audit of vouchers and tenders *etc*., 196 offices of the Stores Department were inspected.

This Chapter includes a thematic para on 'Audit of Selected Stations in Indian Railways' and six individual paragraphs. These paragraphs cover compliance issues on Rolling stock and Materials Management.

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[174] including Carriages & Wagons, Plant & Equipment

[175] Sub head 3002-3003 (4)-Repair and maintenance of carriages and wagons and Minor head 300 of Sub head 3002-3003 (5)-Repair and maintenance of Plant and Equipment-Appropriation Accounts for 2018-19

[176] Sub head 3002-3003 (6)-Operating expenses-Rolling stock and equipment-Appropriation Accounts for 2018-19

[177] ICF/Chennai, RCF/Kapurthala, MCF/RaeBareli, RWP/Bela, RWF/Yelahanka, DMW/Patiala, DLW/Varanasi and CLW/Chittaranjan – Appropriation Accounts for 2018-19

[178] Minor Head 400 of Sub head 3002 (03)–General Superintendence and Services-Indian Railways Appropriation Accounts-2018-19

4.1 Audit of Selected Stations in Indian Railways

Audit of eight selected stations in seven Zonal railways covered the aspects of cleanliness, sanitation, environment management, safety, security and encroachment at railway stations.

Seventy-seven platforms were available in the eight selected stations. Cement concrete washable apron were not provided at 26 platforms. Despite having facilities of mechanized cleaning in the contract at all selected stations, the facility was underutilized due to non-availability of washable apron at 26 platforms of seven stations.

Indian Railway Water Policy 2017 stipulates that recycled water is to be used for non-potable purposes. Audit, however, observed that Zonal Railway Administration were yet to install water-recycling plants in these stations and groundwater was being used for all purposes.

Public Accounts Committee had recommended to increase the number of drinking water taps at all stations throughout the country. Against the requirement of 1,358 water taps as per prescribed norms, the availability of water taps was 1,062 (78 *per cent*). Availability of water cooler was 63 (41 *per cent*) against the requirement of 154 as per the prescribed norm (Minimum Essential Amenities-MEA).

Clause regarding segregation of waste as biodegradable and non-bio-degradable did not exist in the cleaning contracts at five stations.

Provision of boundary walls was not made in the circulating area at five stations. Security arrangement was also ineffective to maintain an encroachment free station premises. Audit observed that there were no norms prescribed for handling the footfalls in Foot Over Bridges.

4.1.1 Introduction

A railway station is an area where passengers board and alight from trains. Passengers expect visible and qualitative public utilities and amenities provided at the stations. With a view to meet the expectations of the passengers, Indian Railways (IR) had undertaken measures to provide improved facilities at the stations.

Indian Railways runs 13,523 passenger trains carrying 23.12 million passengers daily and has 7,321 stations. The sheer quantum of passenger operations put tremendous pressure on the existing infrastructure and calls for an effective system for maintenance of cleanliness and sanitation at stations. Providing passenger amenities like

drinking water, urinals, latrines, dustbins *etc.* at stations is an integral part of the various cleanliness related activities of the IR.

Provision of security arrangement and encroachment free station premises are the responsibilities of Indian Railways. Removal of encroachments in vicinity of stations is an imperative need to provide trouble-free entry/exit to the passengers.

4.1.2 Organizational set-up

Mechanical Department of Indian Railways is responsible for maintaining cleanliness and environmental management at stations. Member (Traction and Rolling stock) is in-charge of Environment and Housekeeping. He is assisted by Additional Member (EnHM).

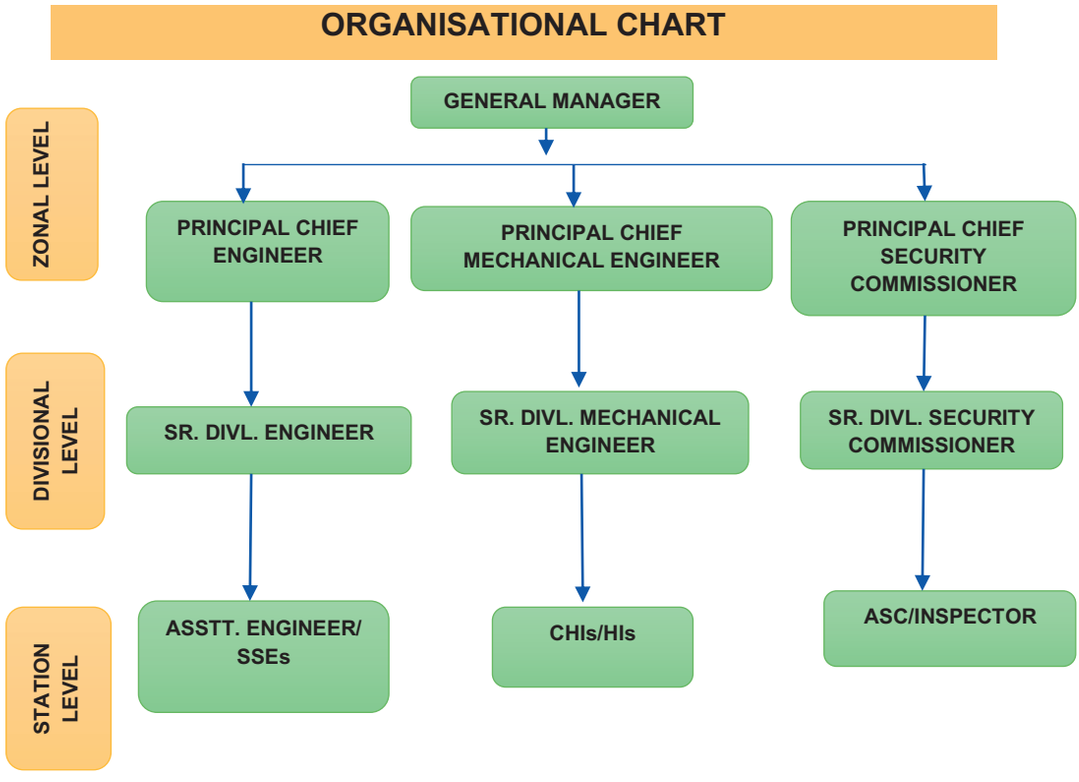
At the Zonal level, Principal Chief Mechanical Engineer (PCME) heads Mechanical department. PCME is assisted by Dy. CME/EnHM[179] at Headquarters level who is further assisted by Sr. DMEs/DME/AMEs (EnHM) at Divisional level. At implementation level (stations), Senior Section Engineers (SSEs) and Health Inspectors (HIs) are responsible for maintaining cleanliness at stations.

Engineering and Security (Railway Protection Force) Departments handle encroachments, safety and security arrangements.

Principal Chief Engineer heads the Engineering department and is assisted by Chief Engineers at Headquarters and Senior Divisional Engineer (Sr. DEN) at Divisional level. Assistant Engineer (AENs)/Senior Section Engineer (SSEs) (Land) are responsible for maintaining the records related to encroachments.

Railway Protection Force is headed by Principal Chief Security Commissioner who is further assisted by Divisional Security Commissioner at Division level and Assistant Security Commissioner/Inspectors at Stations.

[179] Environment and Health Management



4.1.3 Audit Objectives

This audit covered issues pertaining to cleanliness, sanitation, environmental management, encroachment, and security of railway passengers at station. The audit objectives were to obtain reasonable assurance:

- Whether action taken for maintenance of cleanliness, sanitation, environmental management, safety and security arrangements and removal of encroachments at stations were adequate, effective, and as per laid down guidelines/instructions; and
- Whether the monitoring and internal control within Indian Railways at various levels was adequate and effective?

4.1.4 Audit Scope and Methodology

The study covered a period of three years from 2016-17 to 2018-19. For the review, the following points were examined in detail:

- Action plan formulated by the Zonal Railways for maintaining cleanliness and sanitation, security arrangements, environmental management and removal of encroachments at stations;

- Action taken for implementation of various guidelines/orders issued from time to time by MoR/National Green Tribunal (NGT)/Pollution Control Boards (PCBs).
- Remedial measures taken by IR to address recurrence of the deficiencies brought out in the previous audit reports and on assurances rendered to Public Accounts Committee (PAC) through Action Taken Notes (ATNs).

4.1.5 Audit Criteria

The following were the source for audit criteria:

I. Guidelines and instructions issued by the MoR, NGT orders/guidelines and the orders/guidelines of CPCB with reference to environmental issues.
II. Recommendations made by Public Accounts Committee.

4.1.6 Sample Size

The following eight Stations (including two suburban stations) were selected for audit:

Table 1- Sample of Stations selected

S.No.	Name of the station	Station Code	Zone
1	Amritsar	ASR	NR
2	Hazrat Nizamuddin	NZM	NR
3	Agra Cantt.	AGC	NCR
4	Gorakhpur	GKP	NER
5	Gaya	Gaya	ECR
6	Sealdah	SDAH	ER
7	Dadar	DR	CR
8	Dadar	DDR	WR

4.1.7 Audit Findings

Results of the audit are given in the subsequent paragraphs:

4.1.7.1 Facility of mechanized cleaning and adequacy of washable aprons at stations

The pre-requisite for mechanized cleaning is creation of a cement concrete apron[180] (CC apron) on all platform tracks. Mechanized cleaning also becomes easier if even surfaces are present in platforms and circulating area. The operation of machines becomes easier in smooth and even surfaces. The CC aprons are essential to keep the tracks between platforms free from night soil and garbage.

[180] Apron is a Cement Concrete Bed along the entire length of the track in the Railway stations. This facilitates mechanised cleaning.

Ministry of Railways (MoR), in their Action Taken Note stated (December 2008) that washable aprons were planned to be provided at all major stations (A and B category) in a phased manner.

Washable aprons with water hydrant/jet system should be provided[181] at all platforms where morning trains stop for longer duration to ensure cleanliness and better maintenance.

The information on the status of availability of washable aprons is indicated in Table 2:

TABLE – 2: Status of availability of washable aprons at selected stations

Name of station	Name of Zone/ Division	Category of station	Total No. of PF	No. of PF provided with washable apron	No. of PF without washable apron (Col.4-5)
1	2	3	**4**	**5**	**6**
GAYA	ECR/MGS	NSG 2	10	2	8
SEALDAH	ER/SDAH	NSG 1	21	19	2
GORAKHPUR	NER/LJN	NSG 2	10	10	0
DADAR	CR/MUM	SG 1	8	2	6
AGRA CANTT	NCR/ AGC	NSG 2	6	5	1
AMRITSAR	NR/FZR	NSG 3	8	6	2
HAZRAT NIZAMUDDIN	NR/DLI	NSG 2	7	5	2
DADAR	WR/BCT	SG 1	7	2	5
TOTAL			**77**	**51**	**26**

(Source: Records of O/o the Chief Health Inspector of selected station)

- Out of 77 Platforms (PFs) available in the eight selected stations, Cement Concrete (CC) washable apron had not been provided at 26 Platforms. Twenty *per cent* of the platforms in Gaya and twenty five *per cent* of the platforms in Dadar were only covered with CC aprons.
- Gorakhpur was the only station having all the PFs with CC washable apron.

Senior Section Engineers (SSEs) and Health Inspectors (HIs) working under the Mechanical Department are responsible for maintaining cleanliness at stations.

Scrutiny of on-going contracts for mechanized cleaning, use of recycled water, maintenance of score card *etc*. revealed the following:

[181] Based on Comprehensive Guidelines on Cleanliness issued in September 2012.

- Despite having facilities of mechanized cleaning in the contract at all selected stations, the facility was underutilized due to non-availability of washable apron at 26 platforms of seven stations.
- Non-availability of CC aprons also resulted in blockage of drains with ballast on the track which ultimately resulted in creating unhygienic surroundings.

Figure 4.1: Sewage of Platform No.03/04 blocked with Ballast at Gaya (ECR).

Figure 4.2: Sewage of Platform No. 05/06 blocked with Ballast at Gaya (ECR).

- At Gaya Station, toilet waste and water were directly released on the track, making the environment polluted resulting in health hazard for the passengers and also damaging the tracks.

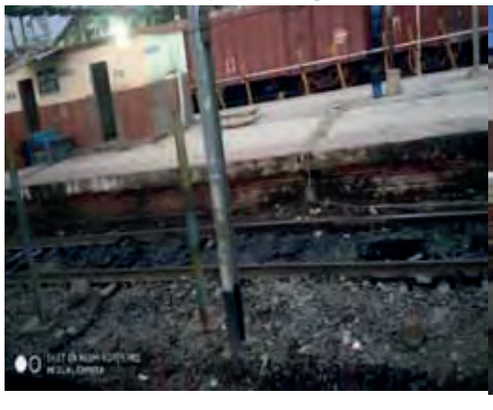


Figure 4.3: Waste/water of public toilet damaging the track on Platform No. 04/05 at Gaya (ECR)

Figure 4.4: Waste/water of public toilet damaging the track on Platform No. 02/03 at Gaya (ECR)

- Contract conditions for Gaya station stipulate that removal and disposal of accumulated garbage was to be done continuously during the entire day. Audit scrutiny of the records revealed that removal of these accumulated garbage was not done on a continuous basis throughout the day.
- Indian Railway Water Policy 2017, stipulate that recycled water is to be used for non-potable purposes (replacing the presently used

fresh water). Engineering Department is responsible for erection and maintenance of water recycling plants. Audit, however, observed that Zonal Railway Administration were yet to install water recycling plants in these stations. Exploitation of groundwater is being done and used for all purposes against the Water Policy.

- To evaluate the performance of cleaning contract, a Daily Score Card is to be maintained to assess the quality of cleanliness. Daily score card for evaluation of quality of cleaning was not being maintained at Agra Cantt, Hazrat Nizamduddin and Amritsar stations. It was being maintained at the remaining five selected stations. The details of availability of CC aprons, cleaning procedure and contract available in the eight selected stations are given in **Annexures 4.1 and 4.2.**

Thus, Engineering and Mechanical Departments are responsible for the prevailing unhygienic condition in the selected stations.

4.1.7.2 Adequacy of toilets and urinals at stations

Non-availability of required number of toilets/urinal and their unusable condition was highlighted in Audit Report No. 6 of 2007 (Railways) on 'Cleanliness and Sanitation on Indian Railways'. In February 2007, MoR issued comprehensive instructions specifying the revised norms and quantum of minimum essential amenities at various categories of stations. In the follow-up audit in 2012, it was noticed that there were 66 *per cent* shortfall in the number of toilets. Non-availability of toilets would be 74 *per cent* provided the number of toilets that were not in use were also taken into account.

Further, comprehensive guidelines for provision of passenger amenities were issued in September 2012 and April 2018. These guidelines stipulated the norms for provision of toilets and urinals. In addition, the guidelines stipulated that at least one-third toilets and urinals should be reserved for ladies. Review of adequacy of toilets and urinals at the selected station revealed that:

- Toilets were provided as per the norms at all the selected stations; however, urinals for ladies were not available at any of the selected station except Sealdah and Dadar (DR) (sub-urban station building).

- At Gorakhpur and Amritsar, 12 gents toilets at each station and ladies toilets numbering eight and four respectively at the above stations were either not in use or were closed.
- Audit observed an open sewage line near Platform No. 4 at Kalyan end of Dadar (DR) station, was giving out bad odour. Audit also noted an open sewage line along the tracks.

Figure 4.5: Open sewage at the end of Platform No. 4 at Dadar station

The details regarding the adequacy of toilets and urinals at these eight stations are given in **Annexure 4.3.** Commercial and Engineering Departments have to initiate action to provide prescribed passenger amenities at these stations.

4.1.7.3 Adequacy and quality of drinking water at stations

(i) Adequacy of water at Station

Inadequacy in drinking water supply at stations was brought out in Audit Report No. 6 of 2007 (Railways). PAC had also observed that the inadequate water supply compounded by dirt and unhygienic surroundings made the amenity unfit for use. PAC, therefore, desired that the number of taps be increased expeditiously in a phased manner at all

stations throughout the country. Accordingly, MoR had issued guidelines for maintaining a minimum number of taps and water cooler at each platform. MoR's prescribed norm - Minimum Essential Amenities (MEA), stipulated that a minimum of 20 taps of drinking water and two water coolers should be available at each PF of NSG-1[182] to NSG-4 category of stations. In respect of each PF of SG-1[183] to SG-3 category of stations, six taps and two water coolers should be made available.

Review of records revealed that taps and water coolers were not available as per prescribed norms as is tabulated at Table 3 and 4 below:

TABLE – 3: Norms vis-à-vis availability of water taps at selected stations

Name of station	Name of Zone/ Division	Category of station	Total no. of PF	No. of Water taps/ platform should be as per the Norms (MEA)	Total no. of Water taps should be available at station (col.4x5)	Total no. of Water taps actually available	Shortfall (Col. 6-7)
1	2	3	**4**	**5**	**6**	7	8
GAYA	ECR/MGS	NSG 2	10	20	200	113	87
SEALDAH	ER/SDAH	NSG 1	21	20	420	281	139
GORAKHPUR	NER/LJN	NSG 2	10	20	200	190	10
DADAR	CR/MUM	SG 1	6	6	36	13	23
		NSG1	2	20	40	20	20
AGRA CANTT	NCR/ AGC	NSG 2	6	20	120	175	(+)55
AMRITSAR	NR/FZR	NSG 3	8	20	160	116	44
HAZRAT NIZAMUDDIN	NR/DLI	NSG 2	7	20	140	127	13
DADAR	WR/BCT	SG-1	7	6	42	27	15
Total			**77**	**152**	**1,358**	**1,062**	**296**

(Source: Records of O/o the CHI at selected stations)

[182] Non Sub Urban
[183] Sub Urban

TABLE – 4 : Norms vis-à-vis availability of Water Cooler at selected stations							
Name of station	**Name of Zone/ Division**	**Category of station[184]**	**Total no. of PF**	**No. of Water cooler at platform should be as per the Norms (MEA)**	**Total no. of Water cooler should be available at station (col.4x5)**	**Total no. of Water cooler actually available**	**Shortfall (Col. 6-7)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
GAYA	ECR/MGS	NSG 2	10	2	20	5	15
SEALDAH	ER/SDAH	NSG 1	21	2	42	0	42
GORAKHPUR	NER/LJN	NSG 2	10	2	20	14	6
DADAR	CR/MUM	SG 1	6	2	12	4	8
		NSG1	2	2	4	3	1
AGRA CANTT	NCR/ AGC	NSG 2	6	2	12	12	0
AMRITSAR	NR/FZR	NSG 3	8	2	16	7	9
HAZRAT NIZAMUDDIN	NR/DLI	NSG 2	7	2	14	13	1
DADAR	WR/BCT	SG 1	7	2	14	5	9
TOTAL			**77**	**18**	**154**	**63**	**91**
(Source: Records of O/o SSE/Electrical at selected stations)							

From the tables above, it can be seen that :

- Against the requirement of 1,358 water taps as per prescribed norms, the availability of water taps was 1,062 (78 *per cent*).
- It was less than the prescribed norms at all the selected stations except at Agra Cantt station.
- Out of 281 taps available at 21 Platforms of Sealdah, 82 taps were sealed. Thus, passengers had access to only 199 operational taps.

Figure 4.6: Sealed Water Taps at Platform No 5 of Sealdah Station

[184] SG- Sub Urban NSG-Non Sub Urban

- Availability of water cooler was 63 (41 *per cent*) against the requirement of 154 as per the prescribed norm (MEA).
- Water coolers were not provided at any of the PFs of Sealdah station despite the fact that more than 1.3 lakh passengers visit this station every day.
- Similarly, it's availability was 25 *per cent* of the requirement at Gaya station and less than 50 *per cent* at Dadar (DR), Amritsar and Dadar (DDR) Stations.

(ii) Quality of drinking water

As per Para 913 of Indian Railway Medical Manual (IRMM), the Health Inspectors (HI) should check the presence of residual chlorine daily at various distribution points randomly and record of the same should be kept. According to Para 914 of IRMM, the Health Inspector should collect water samples for bacteriological examination at least once a month from each bigger/important station. Health Inspectors should also send water samples for chemical examination once in six months. Review of records related to quality of drinking water revealed that:

- Residual chlorine test was done as per the prescribed norms at all the selected stations except at Dadar (DR and DDR) and Agra Cantt stations. The desired level of chlorine (between 0.2 mg and 0.5 mg per litre) was not being maintained at Gaya station since the year 2008. Action for chlorination was yet to be taken up.
- Chemical analysis of water was not done by the Chief Health Inspector (CHI) at three[185] stations during the last three years. It was found to have been done only once in the year 2018-19 at two[186] stations.
- Bacteriological analysis of water was done at all the selected stations as per the norm. In case of Gaya station, the report was continuously "Unsatisfactory". Despite this, the Railway Administration took no remedial action. The authenticity of the reports was doubtful as the requisite official credentials were not marked on these reports.
- Water treatment plant had not been installed at Gaya station despite continuous reporting of contaminated and chemically un-potable water supply.

[185] DR, AGC and NZM
[186] Gaya and ASR

The details regarding the adequacy of water, quality of drinking water for passengers and monitoring the quality of drinking water at eight stations are given in **Annexures 4.4 and 4.5**.
Commercial and Engineering Departments have to initiate action to provide quality drinking water at these stations as per norms.

4.1.7.4 Waste Management at station

Railways generate a huge quantity of non-biodegradable and biodegradable waste. PAC had recommended that *IR must frame a policy on waste management and lay down a mechanism whereby the quantum of garbage generated at stations can be assessed realistically. This would help in setting up adequate collection, segregation and disposal facility along with necessary infrastructure.*

Further as per Solid Waste Management Rules, 2016[187], the duties of waste generators are as follows:

(1) Every waste generator shall:-

a. segregate and store the waste generated by them in three separate streams namely bio-degradable, non- biodegradable and domestic hazardous wastes in suitable bins. Handover segregated wastes to authorised waste pickers or waste collectors as per the direction or notification by the local authorities from time to time;
b. wrap securely the used sanitary waste like diapers, sanitary pads etc., in the pouches provided by the manufacturers or brand owners of these products or in a suitable wrapping material as instructed by the local authorities. Shall place the same in the bin meant for dry waste or non- bio-degradable waste;
c. store separately construction and demolition waste, as and when generated, in his own premises and shall dispose off as per the Construction and Demolition Waste Management Rules, 2016[188]; and
d. Store horticulture waste and garden waste generated from his premises separately in his own premises and dispose of as per the directions of the local body from time to time.

(2) No waste generator shall throw, burn or bury the solid waste generated by it, on streets, open public spaces outside his premises or in the drain or water bodies.

[187] In 2016 Ministry of Environment, Forests and Climate Change came up with new Solid Waste Management Rules.
[188] In 2016 Ministry of Environment, Forests and Climate Change came up with Construction and Demolition Waste Management rules, 2016.

(3) All waste generators shall pay such user fee for solid waste management, as specified in the byelaws of the local bodies.

The MoR, in its Action Taken Note, stated (April 2010) the garbage disposal system is already in place in IR. However, in Audit Report No. 21 of 2012-13 (Railways), on "Environment Management in Indian Railways-Stations, Trains and Tracks", it was observed that though a garbage disposal system was in place, the same was not effective due to lack of proper monitoring. The report had highlighted that the commitment of MoR for assessment and implementation of remedial measures to overcome the shortcomings in collection and disposal of garbage remained unfulfilled. Further, in compliance to the order of Hon'ble National Green Tribunal (NGT) dated 1 October 2018, IR was to draw an action plan for waste management.

Review of records pertaining to selected stations revealed the following:

- Clause regarding segregation of waste as bio-degradable and non-bio-degradable did not exist in the cleaning contracts of five[189] stations. As a result, mixed waste was being transported and dumped at landfills.
- Separate dustbins were not provided for bio-degradable and non-biodegradable waste at three[190] stations during the period of review.
- Separate dustbins were provided for wet and dry wastes at Gaya, Dadar (DR & DDR), Amritsar and Gorakhpur stations. However, all these were mixed at the time of removal from the station defeating the purpose of providing these separate bins.
- Centralized dumping yard was not provided at three[191] stations.
- No system/agreement with the local bodies existed for disposal of waste at the designated place. However, at Dadar (DDR) and Amritsar, it was being removed by the Municipal Corporation.
- Waste collected from different platforms accumulated at different unauthorized places at the station itself at Gaya and Amritsar stations. It was found to have not been removed even up to 5-6 days at Gaya Stations on many occasions.

[189] Gaya, GKP, AGC, ASR, and NZM
[190] SDAH, AGC and NZM (except PF 1)
[191] DR, AGC, and ASR

- Dismantled waste materials were dumped in the space between Central Railway and Western Railway with adverse consequences on cleanliness. This also has a potential of causing increase in rodent population.

Figure 4.7: Waste materials dumped at the space between Central and Western lines (Dadar)

- Incinerator was not available at any of the selected stations except in ladies waiting room at DR.

Details regarding the handling of waste generated and their disposal mechanism in the eight stations are given in **Annexure 4.6, 4.7 and 4.8.**

4.1.7.5 Measures adopted for Pollution control

For independent assessment of pollution of air, water and noise at station premises/sidings/sheds, Central Pollution Control Board (CPCB) in March 2012, conducted a study at the instance of Audit at 14 major stations spread over 12 zones. The study revealed that the IR was not complying with statutory guidelines for prevention and control of pollution. The CPCB observed that none of the stations had applied for consent under The Air (Prevention and Control of Pollution) Act, 1981 and The Water (Prevention and Control of Pollution) Cess Act, 1977. The consent for handling hazardous waste authorization under The Hazardous Wastes

(Management and Handling) Rules, 1989 was also not obtained. Monitoring of ambient air quality and noise by CPCB also revealed that various gaseous pollutants and noise level were exceeding the limit prescribed by it. The report also commented on the discharge of effluents from the stations without proper treatment.

Audit scrutiny revealed the following shortcomings:

- System to monitor the noise level as required under rules 3(1) and 4 (1) of the Noise Pollution (Regulation and Controls) Rules 2000" did not exist at any of the selected stations.
- Survey from passenger for noise level was also not being conducted by the railway authority at any of the selected stations.
- System for measurement of noise when passing/movement of trains did not exist at any of the selected stations.
- Procedure for monitoring and recording the quality and quantity of effluents generated was not adopted at any of the selected stations.

4.1.7.6 Safety and Security arrangement in Railway Stations

Adequate and effective security is imperative for the protection against hazards, damages, theft and criminal activities at stations. Security of railway stations, which includes passengers security and railway property, are one of the most important activities of railways. The entry of unauthorized persons, unauthorized coolies, unauthorized vendors and large number of visitors lead to unmanageable crowds on railway platforms. Security threats are further compounded by the existence of unmanned multi entry and exit points at the stations. Low ratios of security personnel to passengers also makes it difficult to provide security. Security on the stations is the joint responsibility of two agencies:

1. **Railway Protection Force (RPF) and the Railway Protection Special Force (RPSF- a specialized armed wing)** - Both these forces are under the administrative control of the railway authorities. The RPF and RPSF primarily deal with the protection of railway property. Since the year 2003, security of passengers and passenger areas has also been entrusted to the RPF.
2. **Government Railway Police (GRP)** – GRP is under the administrative control of the respective State Governments. This is a wing of the State Police which exclusively deals with prevention and detection of crime and maintenance of law and order in station premises/passenger areas and trains.

Further, based on the recommendations of a High Level Committee, 202 railway stations were identified (2008) as sensitive for the purpose of installation of an Integrated Security System (ISS) to strengthen surveillance mechanism at these stations. ISS includes use of Close Circuit Television (CCTV) Cameras, Access control, Personal and Baggage Screening System and Bomb Detection system *etc*. These issues were addressed by MoR and all the Zonal Railways were advised (September 2008 and June 2009) to ensure speedy implementation of ISS at all the identified sensitive stations.

Review of records revealed that despite clear guidelines of the High Level Committee for installation of Integrated Security System at the identified stations, it was not done at the selected stations.

It was observed that the High Level Committee (2008) recommended Access Control Solutions for railway stations for filtering bonafide passengers from potential miscreants and saboteurs. The committee recommended judicious use of Hand Held Metal Detectors (HHMD), Door Frame Metal Detectors (DFMD) and X-ray baggage scanners for random checking in passenger area in adequate numbers. Audit Scrutiny during the inspection of the stations and records revealed that:

- Door Frame Metal Detectors (DFMDs) were not even planned for installation at Gaya and Dadar (DDR). Information regarding required number of DFMDs was not available at Agra Cantt (AGC) and Hazrat Nizamudin (NZM) stations.
- Against the planning of forty and twenty five DFMDs at Sealdah (SDAH) and Dadar (DR) respectively, no DFMDs was installed at Sealdah (SDAH) and only ten DFMDs were installed at DR, out of which only three were operational.
- Four[192] out of the eight stations were having unauthorized entries. The two stations (Gaya and Gorakhpur) were open from all sides leading to the possibility of the entry of trespassers.

During the inspection of stations and scrutiny of the records on the installation of Baggage Scanners, the following were observed:

- Baggage Scanner was not planned at Gaya and Dadar (DDR).
- It was not planned at other five stations[193] with reference to the actual number of authorized entries at these stations. Only one baggage scanner was planned each for Dadar (DR) and Amritsar against the actual number of eleven and six authorized entries.

[192] Gaya, GKP, AGC and NZM
[193] SDAH, GKP, DR, AGC and ASR

- At Hazrat Nizamuddin, four number of Baggage Scanners were installed at all the four authorized entries. However, the arrangement was still inadequate due to availability of three unauthorized entries.

The status of installation of CCTV cameras at stations was studied. It was observed that:

- CCTV cameras were installed as per plan at two stations[194] only.
- Against the planning/requirement of 250, 44 and 133 number of CCTV cameras, 218, 17 and 85 CCTV cameras were installed at Sealdah, Amritsar and Hazarat Nizamuddin respectively. Thus, there was shortage of 32, 27 and 48 numbers of CCTV cameras at these stations.
- Sixty-seven numbers of CCTV cameras were installed at Gorakhpur station. During joint inspection, it was observed that out of 67 CCTV cameras, 41 CCTV cameras were out of order in August 2019. These cameras were being monitored by six LED screens installed in the control room of RPF post Gorakhpur. Out of these, three LED screens were found to be in out of order condition in August 2019.
- For the CCTV maintenance register at Dadar (DR), although breakdown time of CCTV system was mentioned in the register, date and time of restoration of the system was not found to have been recorded in the register. In the absence of restoration details, the total breakdown period could not be assessed.
- CCTV footage was not integrated to the command center at five stations[195].
- Bomb Detection and Disposal System was not available at five[196] stations.
- Deployment of RPF personnel even on the authorized entry/exit was absent at Gaya and Dadar (DDR) Stations.
- Provision of boundary walls was not made in the circulating area at four[197] stations.
- Security arrangement was also ineffective to maintain an encroachment free station premises. A total of 532 encroachments existed around the seven[198] stations premises.

[194] GKP and DR
[195] Gaya, SDAH (up to 25.03.2019), ASR, NZM and DDR
[196] Gaya, GKP, DDR, DR and AGC stations
[197] Gaya, SDAH, GKP, AGC
[198] Gaya - 53, SDAH-342, GKP-02, DR-05, ASR-89, DDR-40, AGC-01

The details regarding the availability of CCTV, Door Frame Metal Detector, Baggage Scanners, security aspects etc for the eight selected stations are given in **Annexures 4.9 and 4.10.**

Thus, all the components of ISS, were either not functional or available simultaneously at the eight selected stations depriving the control room from getting an overall assessment of the threat perception. The non-functionality/availability of ISS components indicates the persistence of security risks.

4.1.7.7 Crowd Management at station

MoR, in its Disaster Management Plan (2013), has prescribed that Zonal Railways will prepare Disaster Management Plan at Headquarters and Divisional Levels as per the provisions of Disaster Management Act, 2005. Duties are assigned to Government Railway Police (GRP)/Railway Protection Force (RPF) for effective crowd control and management of rush at Railway Stations during festivals. Specific defined areas of jurisdiction for crowd control and duties are assigned to GRP/RPF. They will monitor crowds and rush build up in the circulating areas, booking windows, station platforms and mainly on Foot Over Bridges (FOBs).

During review of position on crowd management, it was noticed that:

- Standardized Divisional plan for crowd management and arrangements did not exist at Amritsar and Hazrat Nizamuddin stations.
- There are six Foot Over Bridges (FOBs) at Dadar (DR) and structural audit of five FOBs was carried out by IIT, Bombay. Although IIT, Bombay had recommended that all the five FOBs are unsound and should be repaired immediately, no FOB was repaired at Dadar (DR) till date (March 2019).
- Audit observed that no norms were prescribed for handling the footfalls in the FOB. Annual inspections were carried out on the FOBs as per Para 116 of Indian Railway Works Manual (IRWM) 2000. However, there were no criteria to evaluate the load which can be sustained by the FOB. Railway Administration stated that the criteria of sustained load by FOB was not evaluated and no-load testing was being done to evaluate the strength of the FOBs to ensure the safety of the structure.

Thus, non-repair of FOBs in disregard to the recommendation of IIT, Bombay coupled with absence of load bearing testing poses a safety risk to 8.5 lakh passengers, who pass through these FOBs every day. Details

of the arrangements made for handling crowd during festive occasions at the eight selected stations are given in **Annexure 4.11.**

4.1.7.8 Encroachments at stations and station premises

Proper maintenance of land boundary is the first and effective step towards prevention of encroachment. Guidelines for demarcation of land boundaries, laying of boundary stones, boundary walls, fencing *etc*. have been explicitly enumerated in Paras 808 to 813 of Indian Railway Works Manual (IRWM).

The procedures to be followed for handling encroachments have been stated in Para 1048 of Indian Railways Code for Engineering Department (demarcations and periodic verification of the boundaries). The provisions of Paras 813 to 814 of Indian Railway Permanent Way Manual (IRPWM) also indicate the periodical verifications to be carried out by the Section Engineer in charge. In addition, periodical directives are issued by MoR and the Joint Procedure Orders are also issued by the Zonal Railways on the issue of encroachments.

Scrutiny of records for selected stations revealed the following:

- All selected stations except Agra Cantt and Nizamuddin had encroachments within the station premises. At three[199] stations, there were commercial encroachments[200]. At Dadar (DDR), there were forty residential encroachments. In all these cases, no eviction proceeding was initiated under PPE Act[201] till date.

Review of status of encroachment (as on 31 March 2019) tabulated in Table 5 revealed the following:

TABLE – 5: Status of encroachments as on 31 March 2019

Name of station	Name of Zone/ Division	Total no. of encroachments	Type of encroachments	Area encroached
1	2	3	4	5
GAYA	ECR/MGS	**50**	Soft (commercial)	NAV
		3	Hard (commercial	4300 sqft
SEALDAH	ER/SDAH	**332**	Soft (commercial)	Not available
		10	Residential	
GORAKHPUR	NER/LJN	**2**	Religious	76.5 sqm

[199] Gaya, SDAH and ASR
[200] 53, 332 and 89 number of shops respectively
[201] Public Premises (Eviction of Unauthorized Occupants) Act, 1971

DADAR	CR/MUM	**5**	Religious	143.665 sqm
AGRA CANTT	NCR/ AGC	**1**	Religious	Not available
AMRITSAR	NR/FZR	**88**	Commercial	982.34 sqm
		1	Commercial	18.42 sqm
HAZRAT NIZAMUDDIN	NR/DLI	**NIL**	Not Applicable	Not Applicable
DADAR	WR/BCT	**40**	Residential	4460 Sq.ft
Total		**532**		
(Source: Records of O/o AEN at selected stations)				

- A total of 53 encroachments existed around Gaya Railway station. The year when such encroachments occurred and area covered by the 50 soft encroachments were not maintained by the Zonal Railway Administration. Even though, these encroachments were removed in February 2017 and November 2016, they re-surfaced.
- At Amritsar, encroachments covering an area of 982.34 sqm in 88 locations were existing since 1981 and one encroachment covering an area of 18.42 sqm existed since 1992.
- All the 332 encroachments (shops) at Sealdah Station were existing for more than 20 years. All these encroachments were soft in nature and no records regarding area covered/age-wise break up was maintained by the Railway Administration.
- The South Section of Sealdah Station had 10 residential encroachers along the tracks within 500 metres of the station.
- In the high level Co-ordination Committee Meeting held on 02 February 2018, the General Manager/ER stated that the encroachment issue hampered the safety of passengers and trains. He urged the officials for taking up the issue in the right spirit. No eviction programme was found on record, except some correspondences at higher level.
- There were 40 old hard encroachments (residential premises and temple) spread over an area of 4,460 sqft for more than 15 years at Dadar (DDR). Railway Administration was yet to initiate any action for removal of these encroachments, despite the fact that these encroachments were in Safety Zone *i.e.*, land within 15 meters from the centre line of the track in PF No. 5.

Figure 4.8: 40 Nos. of old hard encroachment within safety Zone at Dadar (DDR)

Figure 4.9: Encroachment on boundary wall adjoining Platform No.1 (southern end) at Dadar(DDR)

- Encroachment Inspection Register was not maintained at Gaya and Sealdah stations. At Gorakhpur, though the encroachment register was being maintained, the same was never submitted to AEN.
- There were 171 authorized vendors at the platforms of Gorakhpur station and no unauthorized vendors were given access to the platforms. Surprise and regular security checks were being conducted from time to time by Railway Authorities. As per the information furnished by the RPF Inspector 315, 399, and 304 unauthorized vendors were arrested from the platforms during 2016-17 to 2018-19.
- In addition to the commercial and residential encroachments, there were also Religious Encroachments (five Temples at Dadar (DR), one Masjid at Agra Cantt and one Mazar and one temple at Gorakhpur). The Mazar and Temple at Gorakhpur were more than 60 and 20 years old respectively. All the five temples at Dadar (DR) were in existence since 1995. There was no record for the existence of Masjid at Agra Cantt.
- NER Administration had allowed space for daily market on "Tehbazari" basis which was near to the railway track at Gorakhpur station. This is within the safety limit of train operations. In case of any accident, the chances of mass casualties could not be ruled out. Further, the residual and waste generated from this market was being disposed off in a pond in the vicinity of the railway colony. This is polluting the environment due to decomposition of the waste in the pond.

Figure 4.10: Market allowed by railway administration on "Tehbazari" basis near railway track within safety limit at GKP

- As per recent proposal (August 2019), boundary wall for a length of 12,250 meter was to be constructed at Gaya station. During the period 2016-17 to 2018-19, around 1800 meter of length was programmed for construction. However, only 400 meter (22 *per cent*) was constructed during the last three years.
- At Amritsar (ASR), as a preventive measure to check encroachment, there was a requirement of 2000 meter boundary wall in 2016-17 and 2017-18. This was subsequently increased to 5,000 meter in 2018-19. However, only 1,000 meter of boundary wall (400 meter in 2017-18 and 600 meter in 2018-19) was constructed during the period under review. Work for the construction of remaining portion of the boundary wall was not planned during the period under review.
- There was no demarcation of land between Railway and Mumbai Municipal Corporation on East side of Dadar (DR) station. This resulted in blocking of railway land by illegal vendors causing inconvenience to the passengers during entry and exit from main gate and terminus station of Dadar.
- Boundary wall was neither constructed nor planned to be constructed at Sealdah (SDAH) station as of 31 March 2019.
- NER Administration was to construct 4,000-meter boundary wall for Gorakhpur station based on the MoR's directives. Despite proposals for construction of boundary wall initiated by the Senior Section Engineer (SSE-Works) to the Sr. DEN during December 2014, October 2017 and July 2019, the same has not been sanctioned till the date of audit (March 2019).

- The target for plantation was 10,000 plants per annum at Gaya. However, 1,000 plants (10 *per cent*) were planted each year during 2016-17 to 2018-19. At Gorakhpur 400, 200 and 3,000 plantations were targeted and planted during the years 2016-17 to 2018-19 respectively. In Amritsar 29,000, 2,000, 5,425 plantations were planted against the target of 29,000, 15,000 and 15,000 respectively during the period 2016-17 to 2018-19.
- Planning and/or execution of plantations around the Station was not noticed at Sealdah, Dadar (DR), Agra Cantt stations. At Hazrat Nizamuddin and Dadar (DDR) there was no target fixed for plantations during 2016-17 and 2017-18.

The details of encroachments, monitoring them and preventive measures taken to check encroachments at eight stations are given in **Annexures 4.12 to 4.16.**

The procedures to be followed for preventing encroachment on railway land has been enumerated in IRWM, IRPWM and code for Engineering Department. However, the instances of encroachment as shown in Table-5 and above narration leads to the conclusion that the system is not effective. MoR needs to re-visit its policy/procedures on prevention of encroachment for making the system robust.

4.1.7.9 Conclusion

Based on the recommendations made by the PAC, MoR had initiated measures to improve the level of cleanliness and sanitation at stations. However, these measures did not translate in improving the cleanliness/sanitation at stations. Absence of CC aprons at stations resulted in piling up of garbage on tracks. Absence also led to blockage of drains with ballast resulting in unhygienic surroundings. Drinking water supply arrangements to the passengers and the quality of water does not match the norms fixed by MoR. Waste Management Policy was not effective as there was no segregation of bio-degradable and non-biodegradable waste. The provisions of Water Policy were not followed and was evident with absence of water recycling plants in all the selected stations. Further, groundwater was being exploited which was against the norms.

Measures adopted for pollution control were not effective as none of the stations had obtained consent for operation under Air and Water Pollution Control Acts. The procedure for monitoring and recording the quality and quantity of effluents generated was not adopted at any of the selected

stations. IR had not framed measures to monitor and control noise pollution.

Absence of ISS components indicated the persistence of security risks. The policy/procedures of IR for preventing encroachment was not effective.

4.1.7.10 Recommendations

- ***Ministry of Railways needs to frame a separate Waste Management Policy and comply to Board/NGT's instructions to overcome the shortcomings of Waste Management at the Stations.***
- ***Ministry of Railways needs to take adequate measures for planning and implementation of water management, which includes availability of sufficient water, water treatment plant, water recycling plant etc.***
- ***Ministry of Railways needs to take appropriate measures to remove encroachments.***
- ***Ministry of Railways needs to provide adequate Integrated Security System as per recommendations of the High Level Committee.***

The matter was taken up with MoR in October 2020; no reply was received (February 2021).

4.2 Avoidable stabling of Diesel Locomotives due to inefficient planning : Northern Railway

Two Diesel Locomotives remained stabled[202] in Diesel Loco shed for a period of five and seven years due to inefficient material planning and delay in taking decision for their repairs. This resulted into loss of earning capacity of locomotives amounting to ₹ 97.27 crore besides blocking of capital of ₹ 22.84 crore.

Indian Railways, to achieve the maximum possible availability and reliability in service, follows the system of preventive maintenance[203] of rolling stock. System of preventive maintenance envisages a schedule for maintenance at regular specified intervals including replacement of components. It aims to replace the components before they actually fail in service due to ageing, wear and tear, while also endeavoring to obtain maximum life possible for the components.

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[202] Stabling of Locomotive in the shed i.e. parking of Locomotive in the shed for repair and maintenance

[203] Indian Railway Maintenance Manual for Diesel Locomotives (December 2013)

In Indian Railways, Diesel Locomotives are manufactured by Diesel Locomotive Works (DLW)/Varanasi[204]. Maintenance of Diesel Locomotives is undertaken in Diesel Loco sheds of the Zonal Railways. Hence, for undertaking periodical maintenance, Diesel Loco sheds are required to maintain inventory in efficient manner.

In Diesel Loco Shed, Alambagh (DSL/AMV) of Northern Railway, audit noticed inordinate delays of approximately five to seven years in repair of two locomotives as mentioned below:

(i) Diesel Locomotive No.12292

WDG-4[205] Diesel Locomotive No. 12292[206] (attached to DSL/AMV) failed (20 March 2013) during service due to Interface Module being defective. This non-stock item was not available in DSL/AMV. Against the indent for this item of April 2013, Controller of Stores/Northern Railway placed order[207] almost after a delay of one year in March 2014. The item was received in November 2015 *i.e.* after a gap of about 32 months due to delay in import. Audit observed that before receipt of the item, two vital assemblies (Computer Chassis Assembly and Optic Fiber Cable) of this Locomotive were cannibalized in the maintenance of other Locomotives. The indents for these assemblies were placed in February 2014 and July 2014 respectively, however, these assemblies were not received. Due to non-receipt of the indented assemblies costing ₹ 9.59 lakh[208], DSL/AMV approached (12 September 2017) DLW/Varanasi to arrange a complete AC-AC System of EMD make for this locomotive. The complete AC-AC system costing ₹ 2.44 crore was received in October 2017 in DSL/AMV. Finally, the locomotive was repaired and put to service on 4 January 2018.

Thus, the said Locomotive remained stabled in the shed for a period of almost five years (i.e. 58 months) due to inefficient material planning. This resulted in loss of earning capacity of the Locomotive (₹ 37.71 crore[209]) besides blocking of capital of ₹ 11.42 crore (cost of Locomotive). As the indented assemblies could not be received, the Locomotive was repaired at an extra cost of ₹ 2.34 crore by replacing with complete set of AC-AC system.

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[204] Renamed as Banaras Locomotive Works,Varanasi
[205] Broad Gauge Diesel Locomotive for Goods Train
[206] commissioned in May 2010
[207] Controller of Stores/Diesel Locomotive Works/Varanasi
[208] Estimated cost ₹ 9.59 lakh (Computer Chassis Assembly-₹ 3.30 lakh, Optic Fiber Cable-₹ 6.29 lakh)
[209] Loss has been worked out after allowing six months as import content is involved for repair of this diesel loco

(ii) Diesel Locomotive No.12300

Another WDG-4 Locomotive No. 12300[210] (attached to DSL/AMV) was damaged (10 January 2012) in an accident in Samastipur Division of East Central Railway. The Locomotive was brought back to DSL/AMV in damaged condition in March 2012 for repair. The Locomotive was beyond repair as its cabin, computer control brake system, underframe *etc.* required complete replacement. DSL/AMV authority proposed (March 2012) Northern Railway Headquarters to send the Locomotive to Diesel Locomotive Works/Varanasi (DLW/BSB) for special repair. The DLW/BSB refused to repair the said Locomotive and advised to get the same attended in Loco Workshop/Charbagh/Lucknow. The Locomotive was sent to Loco Workshop/Charbagh in September 2012 for replacement of damaged Driver Cab. Locomotive was received back in November 2012 in DSL/AMV. However, Locomotive could not be put to use due to some other deficiencies in Traction Motor, compressor, undergear components etc. The Locomotive remained stabled in DSL/AMV in damaged condition since March 2012 to September 2017. The Locomotive was sent (September 2017) to Golden Rock (GOC) Workshop/Trichy/Southern Railway for rehabilitation in compliance of MoR's instructions of June 2016[211]. However, reasons for delay of 15 months in sending the Locomotive to GOC Workshop were not on record. The Locomotive was received back from GOC Workshop in February 2019 after 17 months. Records pertaining to follow up by the DSL/LKO with GOC Workshop expediting repair of defective Locomotives were not produced to audit. The Locomotive could not be utilized for more than seven years (86 months) between January 2012 and February 2019. The Locomotive was re-commissioned on 25 February 2019. Thus, the said Locomotive remained under repair for a period of seven years. This resulted in loss of earning capacity of Locomotive (₹ 59.56 crore[212]) besides blocking of capital of ₹ 11.42 crore.

Thus, due to inefficient planning in arranging vital spares for repair of Locomotive and delay in taking decision to send the Locomotive for rehabilitation to GOC Workshop, two new Locomotives remained idle for five and seven years, respectively. This resulted in loss of earning capacity of Locomotive of ₹ 97.27 crore besides blocking capital of ₹ 22.84 crore.

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[210] commissioned in May 2010

[211] for special repair of accident damaged High Horse Power Diesel Locomotives

[212] Loss has been worked out after allowing four months for repair of accidental Diesel Locomotive.

The matter was taken up with the Diesel Loco shed authorities in June 2016 and June 2017. They stated (July 2016) that in respect of Locomotive No. 12292, detention/stabling was due to delay in procurement of imported spares as unit exchange was not available in the shed. They further stated that cannibalized parts of this Locomotive were utilized in emergency situation to prevent grounding of other Locomotives. Reply in respect of Locomotive No. 12300 was, however, not furnished.

Reply of Diesel Loco shed authorities was indicative of inadequate material management in arranging vital spares for repairs of Locomotives. Also, there was delay in taking decision to send the Locomotive (No.12300) to GOC Workshop for rehabilitation.

Matter was taken up with the Northern Railway Administration in June 2019. In the interim reply of 30 December 2019, they reiterated that Locomotive No.12292 was of M/s EMD Make (USA) and the defective Interface Module was required to be imported from USA. Import of material requires a number of legal and financial sanctions/foreign currency, which was time consuming process. The other sub-assemblies (Computer chassis and OFC cable) were utilized in other EMD Locomotive nos. 12220 and 12722 in emergency situation to prevent grounding of these Locomotives. For Locomotive No. 12300, they stated that condition of Locomotive (involved in accident) was beyond repair. Control cables, lugs and connectors *etc*. were damaged and required replacement. This Locomotive was equipped with AC - AC traction system of S1 type, which got completely damaged and procurement of this system was stopped by DLW/Varanasi. After joint inspection with RDSO and DLW on 6 and 10 November 2016, it was found that Locomotive can be put back into service after major repair and replacement of its assembly. Finally, after joint inspection with GOC on 25 July 2017, this Locomotive was sent (12 September 2017) to GOC Workshop for rehabilitation.

It is evident from the reply that the joint inspection of the accidental Locomotive was conducted only after a lapse of four years from the arrival date of Locomotive to the shed. In other case, the import difficulties of spare parts cited by Railway Administration do not justify the undue delay of five years.

The matter was taken up with MoR in May 2020; no reply was received (February 2021).

4.3 Loss of earning capacity and avoidable empty haulage of Wagons: South Central Railway

Ministry of Railways had issued detailed guidelines for attending repairs to wagons during Periodical Overhaul (POH) and Routine Overhaul (ROH). Prolonged detention and unwarranted empty haulage were observed at depots and workshops leading to loss of earning capacity of wagons. The loss of earning capacity of these wagons has been assessed in audit as ₹ 14.48 crore and avoidable empty haulage of ₹ 0.24 crore.

Safety of freight operations is dependent on proper maintenance of wagons. For ensuring optimum performance of wagons, it is necessary that preventive maintenance is done timely and defects are attended. Detention during examination and repairs are to be kept minimum so that the wagons are made available for traffic use for optimum utilization.

Ministry of Railways (MoR) issued (July 2016) instructions that wagons with heavy body damages are allowed to be sent to Workshop for major body repairs provided that the date of Periodical Overhaul[213] (POH) becoming due within the next three months. Railways were required to handle the wagons which are not due for POH in appropriate manner in open line instead of sending them to workshops (NPOH in railway terminology).

Accordingly, wagons which had been received in the wagon depots for repairs had to be examined to identify the extent of repairs to be carried out. If the wagons were due for POH within the next three months these wagons were sent to Workshops and repairs were carried out along with the periodical over haul. In other cases, the repairs which were minor in nature had to be attended in the wagon depots itself.

A scrutiny of records of the wagons, which were received in the Wagon Depots for identification of extent of repairs in South Central Railway (SCR) was carried out. Audit observed that 120 wagons (during the period July 2016 to March 2019) with heavy structural damages were received in the Wagon Depots[214] for identification of repairs. After the identification of

[213] POH means Periodical Overhaul. The time period of POH is six years for wagons.
[214] Wagon depots Vijayawada (BZA), ROH depots at Ramagundam (RDM) and Gooty (GY)

repairs, the wagons were either to be attended in the depots itself or sent to Wagon Workshop[215].

At the Wagon Depots (BZA, RDM and GY), there was delay in examination of the wagons (58 wagons) in identifying the extent of repairs to be undertaken. The delays ranged from 1 to 133 days after allowing a grace period of eight days. Forty-two wagons which were sent to Wagon Workshop (RYPS) were sent back to Wagon Depots without attending to any repairs stating that these were wrongly received. Sixteen wagons could not be traced in the records of Wagon Workshop. Delay in examination of these 58 wagons led to loss of earning capacity of ₹ 2.46 crore (assessed by Audit).

Further scrutiny of records of the Wagon Workshop and Wagon Depots revealed that:

- There was delay in carrying out the repairs (POH) for 41 wagons at Wagon Workshop. The delays ranged from 20 to 809 days resulting in loss of earning capacity of ₹ 8.65 crore.
- There was delay in carrying out the repairs (ROH[216]) to seven wagons at the Wagon Depots. The delays ranged from 3 to 874 days. This resulted in loss of earning capacity of ₹ 3.37 crore.
- Further, 40 wagons were shuttling between Wagon Depot and Wagon Workshop without being attended to. The avoidable haulage charges on account of this was assessed in audit as ₹ 0.24 crore

The issue was raised with the MoR in April 2020. In reply, MoR stated (July 2020) that necessary instructions were issued and the same was being followed except for some exemption where specific permission was granted.

The fact remains that due to non-observance of MoR's guidelines, there were cases of unwanted booking for POH leading to detention and unnecessary haulage of wagons. The loss was recurring inspite of instructions issued by MoR and not being enforced effectively.

Thus, there was loss of earning capacity of ₹ 14.48 crore and avoidable empty haulage of ₹ 0.24 crore due to non-observance of MoR's guidelines.

[215] Wagon Workshop at Rayanpadu (RYPS) if the wagon is due for POH in the next three months

[216] ROH means Routine Over Haul. The time period for ROH is 12 to 24 months depending upon type of wagon.

4.4 Lack of internal control resulted in non-recovery of cost of wagon damages: North Eastern Railway

NER Administration failed to comply with the instructions issued by the Ministry of Railways with regard to timely raising of bills and recovery of cost of wagon damages from the concerned siding owners. This resulted in non-recovery of cost of wagon damages to the tune of ₹ 6.89 crore from Private Siding Owners.

Ministry of Railways (MoR) issued (July 2005) "Standard form of Agreement of Private Siding" wherein it was clearly mentioned (Para 18) that the siding owner is entirely responsible for damage to the engines, damages and deficiencies of rolling stock (Railway Wagons) or other property of Railway Administration from any cause and shall make good on demand for all such losses.

The MoR issued (September 2015) detailed instructions on prevention of damages to wagons during loading/unloading operations over Indian Railways as a "Joint Procedure Order (JPO) on Wagon Damages". In the JPO, it was mentioned that Zonal Railways may ensure timely raising of bills and recovery of cost for the wagon damages from the concerned siding owner. Similarly, in case of wagons damaged during handling in Railway goods shed, cost of damages may be recovered from the concerned customer/handling agent. The recoverable amount should reflect in the "Bills Recoverable" Register maintained by the Sr. DFM of the division. These instructions were again re-iterated in May 2019 by the MoR.

East Central Railway (ECR) in September 2018 informed Principal Financial Adviser (PFA)/NER, Gorakhpur regarding arrival of damaged wagons of BOXN/E rakes unloaded at different sidings over NER. Review of the records of Senior Divisional Commercial Manager (Sr. DCM)/NER/Lucknow revealed (January 2019) that the wagons were damaged due to mishandling at various sidings, which led to their detachment during maintenance. It was further stated that the necessary deduction of cost may be realized. Based on information furnished by the ECR, Office of the General Manager (Commercial), NER intimated (October 2018) to all Sr. Divisional Commercial Managers of three Divisions[217], the status of BOXN/E rakes with damaged wagons as reported by ECR. The Sr. DCMs were also asked to look into the matter regarding damages to wagons and get these damaged wagons checked

[217] Varanasi, Lucknow, Izzatnagar

by deputing staff, recover the repair cost and furnish report in detail for further action.

Audit, however, noticed that the repair cost of the damaged wagons was not recovered by the respective Sr. DCMs/NER despite clear instructions issued by the MoR in the JPO with regard to the recovery of cost of damaged wagons. Audit assessed the total amount as ₹ 6.93 crore **(Annexure 4.17)** for the period from October 2015 to October 2019, which was not recovered. Thus, NER Administration failed to recover the amount to that extent from various siding owners for repair cost of the damaged wagons despite the written requests made by the ECR from time to time.

Further, on verification of the maintenance of records and steps taken for recovery of the damage charges *etc,* audit observed that "Bills Recoverable" registers, as prescribed in the JPO are not being maintained in NER. It was also noticed that the division wise position of outstanding amount of such damage charges were not being maintained either by Accounts Department or by the Commercial Department.

On this being pointed out by Audit, Sr. Divisional Mechanical Engineer (Sr. DME)/C&W/Varanasi stated (August 2019) that the Commercial Department was requested (July 2014, September 2014, February 2018 and March 2019) for the recovery, as the same were to be made by them. However, the Commercial Department (Varanasi) stated (August 2019) that in two cases, the siding owners were requested to deposit the damage charges and in remaining cases, they had not received the details of recovery.

The Assistant Commercial Manager of Izzatnagar Division stated (August 2019) that an amount of ₹ 3.94 lakh was realized from the Siding Owners and steps were being taken for recovery of the balance amount of ₹ 4.44 lakh.

Thus, lack of internal control at the level of Divisional and Zonal Railway of NER for maintenance of records as prescribed in the JPO and non-compliance to the instructions of MoR resulted in non-recovery of cost of wagon damages of ₹ 6.89 crore from the Private Siding Owners.

The matter was taken up with MoR in May 2020; no reply was received (February 2021).

4.5 Loss due to premature condemnation and replacement of Spherical Roller Bearings and non-enforcement of warranty clause thereon: East Coast Railway

Carriage Repair Workshop of East Coast Railway (ECoR) scrapped 6,332 number of Spherical Roller Bearings during the period April 2016 to May 2019. 71 *per cent* of these (4,481) had not completed even half of the codal life leading to their premature replacement, which entailed extra expenditure. Moreover, ECoR did not maintain record of date of commissioning of bearings and therefore warranty in case of failed bearings was reckoned from the date of manufacture rather than date of their commissioning. Premature replacement of Spherical Roller Bearings and failure to take advantage of warranty clause thereon, led to a loss of ₹ 5.30 crore.

Spherical Roller Bearings is a vital anti frictional element, which improves service life of rolling stock by reducing the heat produced[218]. Of the various types of Spherical Roller Bearings, the bearing No. 22326-C/C3 type[219] is being used on Integral Coach Factory (ICF) coaches of Railways. Research Designs and Standards Organisation (RDSO) prescribed a codal life of 20 years for Spherical Roller Bearings type 22326 (16.25 t) used on Broad Gauge (BG) coaches. Para 3.1 of RDSO specification No. C-8257 prescribes that supplier shall be completely responsible for the satisfactory and efficient performance of the roller bearings in service. This is irrespective of any approval given by purchaser/RDSO for the design features or tests/ inspection carried out by the purchaser/RDSO. Further, as per Para 3.3 of the specification, the contractor shall replace the roller bearings failing or proving unsatisfactory[220] within a period of 36 month or 4,00,000 km from the date of commissioning into service whichever is later. The period of warranty shall stand extended by the duration for which the roller bearings remain inoperative under exercise of this clause.

Wheel Shop of Carriage Repair Workshop at Mancheswar (CRW/MCS) of ECoR replaces the defective roller bearings during overhauling of coaches. Roller bearings used in ICF coaches of Indian Railways are centrally procured through the Controller of Stores of ICF. The suppliers

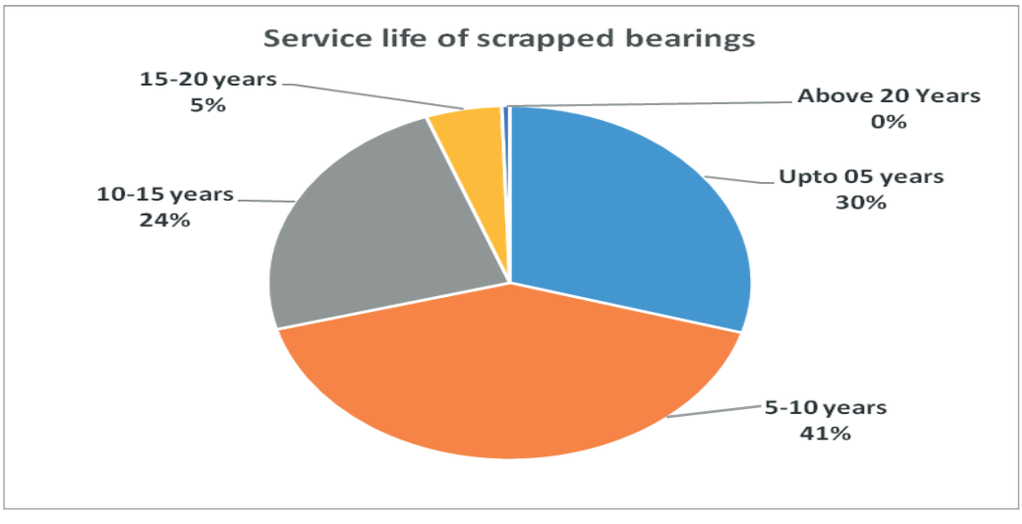
[218] Para 1.0 of Indian Railways handbook on maintenance of Spherical Roller Bearings of CAMTECH vide No. IRCAMTECH/M/12-13/Bearing/1.0
[219] Conforming to RDSO Specification No. C-8257 (Rev.01) with Amendment slip No. 1 and 2 suitable for 16.25 tonnes and 13 tonnes axles
[220] Attributed to defective/faulty design, defective material or poor workmanship

directly deliver the bearings to the consignee of ECoR i.e Senior Material Manager/CRW/MCS after obtaining the RITES inspection certificate. Two firms viz. M/s FAG Bearing India Limited (FAG) and M/s National Engineering Industries Limited (NBC make) had supplied Spherical Roller Bearings type 22326C/C3 to CRW/MCS in lots from time to time. The suppliers had also submitted work test and guarantee certificate to replace the failed bearings[221].

It was noticed by Audit that during overhauling of coaches at MCS, total 6,332 number of bearing were replaced during the period April 2016 to May 2019 due to various defects as shown below:

Manufacturing firm	Period of service life of scrapped bearings (in years)					
	Up to 05	5-10	10-15	15-20	Above 20	Total
FAG	1,155	1,127	637	157	17	3,093
NBC	717	1,482	858	165	17	3,239
TOTAL	**1,872**	**2,609**	**1,495**	**322**	**34**	**6,332**

Age analysis of the defected/scrapped bearings as available in the records of Wheel Shop, MCS was as follows:



- Above age analysis shows that 4,481 bearings (*71 per cent*) were scrapped as defective within half of their codal[222] life. Out of that, 1,872 bearings had failed before completion of five years (*i.e.* one-fourth of codal life) from date of manufacturing. This raises doubt about the quality of the bearings supplied to the Railway.

[221] Within a period of 36 month or 4,00,000 km from the date of commissioning into service or 48 months from the date of receipt whichever is earlier

[222] RDSO prescribed a codal life of 20 years for spherical roller bearings type 22326 (16.25 t)

- Warranty claim was to be raised against the bearings, which had failed within 36 months from the date of induction into service. No such record was maintained by the Railway. As such, month and year of manufacturing stamped on the scrapped bearing was reckoned for warranty claim.
- In respect of 515 bearings which had failed within three years of manufacturing, warranty claims were raised against the suppliers viz. FAG and NBC Ltd. Out of that, 280 bearings were jointly inspected by the suppliers and only 107 bearings were accepted by the firms for replacement under warranty. For the remaining 173 bearings, the firms refused to honour the warranty claims. The firms citied that there was no material defect, poor workmanship, faulty design and quality lapse since the bearings had been in service for a period ranging between six and 36 months. The suppliers also stated that the replacements of failed bearing were accepted not by virtue of contractual obligation but as a goodwill gesture and good business relationship. Such justification given by the firms were never contested by the Railway Administration which allowed the firms to escape from their contractual obligation.
- M/s FAG Ltd[223] did not respond to the warranty claim for 235 bearings which failed during June 2017 to May 2019[224]. The firms accepted the warranty claims against some of the defects[225] in bearings but at the same time many other bearings with same defects were not accepted for replacement under warranty. Hence, no consistent criteria for acceptance or rejection of warranty claim of defective bearings was adopted by the suppliers. As such, Railway Administration failed to safeguard the interest of Railway by not enforcing the warranty clause to get replacement of all such failed bearings.

The matter was brought to the notice of Ministry of Railways (MoR) in May 2020. MoR, in its reply, stated (December 2020) the following:

(a) Previously warranty was claimed for few bearings only. Since December 2013 claiming of warranty for all failed bearing during service period (36 months) has started at CRW/MCS.

(b) It was practically not possible to maintain the running kilometers of each bearing. Due to non-availability of running kilometers of

[223] Since M/s NBC has accepted 25 bearings as on August 2019 for replacement, their portion is not mentioned here.
[224] Joint inspection by M/s FAG Ltd had not been conducted since June 2017.
[225] like outer race pitted, flaked, rusted *etc*.

individual bearing and date of its first induction into service, CRW/MCS have started the warranty claim for failed bearings during service period[226]. Records for the date of commissioning of roller bearings are being maintained for new bearings put into service since February 2019.

(c) Though the codal life may be 20 years, the health of the bearing depends on many external factors[227] which are not possible to factor in while deciding upon the service life of a bearing.

(d) Concerned OEMs were asked to conduct the Joint Inspection at CRW/MCS. During Joint Inspection, the firm accepted some quantity of failure of bearing for replacement. For balance, the firm stated that the failure occurred due to lapses in maintenance practices and not due to any manufacturing defects.

The reply of MoR was not acceptable in view of the following:

(a) The Audit observations cover deficiencies in warranty claims of failed bearings during the period April 2016 to May 2019. It was noticed that due to non-maintenance of records of date of procurement and date of commissioning of bearings, date of manufacturing of roller bearings was taken into account for claiming warranty instead of date of induction into service.

(b) It was also noticed that the age of bearings which failed within warranty period ranged between two months and three years from the date of manufacturing. Since Railway is not maintaining the records of installation of individual bearings, many more bearings eligible for warranty claim went unclaimed.

(c) The firm (FAG) did not visit the CRW/MCS workshop since July 2017 and as a result 345 failed bearings were awaiting joint inspection (as of May 2020).

Thus, due to non-maintenance of records of procurement and date of commissioning of bearings, Railways had forfeited the right of proper warranty claim. Premature failure of large number (71 *per cent*) of the RDSO approved and RITES inspected bearings raises concern about their quality. Thus, Railway sustained a loss of ₹ 5.30 crore[228] due to premature condemnation and replacement of Spherical Roller Bearings

[226] 36 months from the date of manufacturing of the bearings
[227] Like track geometry, track defect, overloading, wheel profile *etc.*
[228] ₹ 0.49 crore on account of failure in securing replacement under warranty (+) ₹ 4.81 crore due to premature replacement of 3,966 bearings which failed before completion of half of their codal life

and non-enforcement of warranty clause thereon during the period April 2016 to May 2019.

4.6 *Procurement of complete Rotor and Stator of Traction Motor at higher rates resulted in avoidable extra payment: Chittaranjan Locomotive Works*

Chittaranjan Locomotive Works (CLW) purchased 769 Rotors and 450 Stators, for assembling Traction Motor, from trade at higher prices during 2018-19. Prices of these items had shown a downward trend since last five years. Despite this, CLW did not ascertain the reasonability of rates and purchased the items at higher rates. This had resulted in avoidable extra payment of ₹ 15.88 crore.

Central Vigilance Commission's (CVC) guidelines for improvements of Contracts (November 2002) stipulate that preparation of estimates for contracts needs special emphasis. The estimated rate is a vital element in establishing the reasonableness of prices. Thus, it should be worked out in a realistic and objective manner. For arriving at the estimated rate, the prevailing market rates, last purchase prices, economic indices for the raw material/labour, other input costs, Indian Electrical & Electronics Manufacturers' Association (IEEMA) formula, wherever applicable should be factored.

Chittaranjan Locomotive Works (CLW) produces 3-phase locomotives for Indian Railways. For production of the 3-phase locomotives (Version WAG-9 or WAP-7), Traction Motors (TM) are required. CLW manufactures the TM by assembling them in-house by utilizing Rotors and Stators. CLW also purchases complete TM from trade in case of requirements that are beyond their in-house production capacity.

During the year 2018-19, CLW procured 769 Rotors at the rate of ₹ 5.97 lakh per unit and 450 Stators at the rate of ₹ 8.15 lakh per unit (basic rate without GST) for assembling 3-Phase Traction Motors through two separate tenders.

At the time of evaluation, the Tender Committee (TC) observed that there was a decreasing trend in basic purchase prices of Rotors and Stators during the period 2013-14 to 2016-17. In case of Rotors, the basic purchase prices had decreased from ₹ 5.91 lakh per unit in 2012-13 to ₹ 4.36 lakh per unit in 2016-17. Similarly, in case of Stators, the basic purchase prices per unit had decreased from ₹ 9.25 lakh in 2012-13 to ₹ 6.43 lakh in 2016-17. The basic purchase price per unit had marginally increased to ₹ 6.90 lakh in 2017-18.

However, in spite of the above observations regarding decreasing trend of prices, the TC finalized the procurement of Rotors at the rate of ₹ 5.97 lakh per unit and Stators at the rate of ₹ 8.15 lakh per unit.

The main justifications for acceptance of the higher rates by the TC were as follows:

i) DMW had procured the same items in July 2018 at the rate of ₹ 5.97 lakh and ₹ 8.15 lakh;
ii) Urgent nature of the purchases; and
iii) Reduction of demand of these items during 2016-18 resulting in price decrease. However, during 2018-19, the firms anticipated increase in demand and therefore increased the prices.

The Finance Member in the TC was not convinced about the reasonableness of rates. The Finance Member had recorded that DMW had ordered very small quantity of Rotors and Stators and the firm did not provide volume discounts.

Audit also noted that the offered rate of items for DMW was for only 77 Rotors and Stators each as against 1,219 (769 rotors and 450 Stators) procured by the CLW. The procurement by CLW was 16 times more than that of DMW quantity in 2018-19. Thus, the TC did not take into consideration the 'economies of scale' in these procurements by CLW.

DMW had started production of 3-phase locos with effect from 2016 only and till 2018-19 had manufactured only 60 locos. In comparison, CLW had manufactured 968 WAP-7 and WAG 9 locos during the same period (2016-19). Hence, finalizing rates relying on the rates finalized by DMW was unreasonable.

It was further observed that in contravention of the CVC guidelines (2002) the TC did not make any independent rate analysis on the basis of prevailing market rates, last purchase prices, economic indices for the raw material/labour, other input costs *etc*., for arriving at the reasonability of the rates quoted by the vendor.

The TC further justified acceptance of higher rates due to the 'urgent' nature of the purchase. Audit however observed that the grounds of urgency cited by Technical Members were not correct as the delivery schedule of the procured items was to commence after five months of TC finalization.

Further, the CLW had in-house production facility of Rotors and Stators as well as procurement of complete traction motor to meet-up any urgent

requirement for production. Records of CLW did not indicate that it had planned, in advance, to purchase these items for emergency situation or the ordered quantity was reduced to the extent for meeting emergency requirement. Moreover, the nature of urgency or any details about it was not available in the deliberation records of the TC.

The contention of the TC that the rates were reduced by the firms correspondingly so as to become competitive and secure the purchase orders from Railways was also not correct. During the previous five years, Railways had only three approved vendors for supply of rotors, stators and traction motors. Therefore, the competition was limited to these three vendors only during all the five years. Further, the demand had steadily increased over the past five years in respect of Rotors and Traction Motors as is clear from the fact that procurement of Rotors had continuously increased from 92 units in 2012-13 to 826 units in 2016-17 whereas procurement of Traction Motors had increased from 283 in 2012-13 to 540 in 2017-18. Thus, the TC's justification that the demand had reduced around last two years was not correct.

Thus, CLW had made procurements of Rotors and Stators at higher rates which resulted in avoidable payment of ₹ 15.88 crore[229] by CLW.

The matter was taken up with MoR in June 2020; no reply was received (February 2021).

4.7 Procurement of Driver Display Unit at higher rate: Chittaranjan Locomotive Works

Non-consideration of lower price offer of an established supplier for procurement of Driver Display Units (DDUs) resulted in extra expenditure of ₹ 10.92 crore.

Indian Railways (IR) introduced three-phase drive (Insulated Gate Bipolar Transistor) propulsion for fitment on locomotives[230] at Chittaranjan Locomotive Works (CLW) in 2009. This propulsion system consists of nine[231] major equipment including Driver Display Unit (DDU)[232]. CLW

[229]Rates for previous purchases (a) Rotors purchased in 2016-17 @ ₹ 4.59 lakh per unit, Stators purchased in 2017-18 @ ₹ 6.98 lakh per unit, Rate for purchases during 2018-19 Rotors: ₹ 5.97 lakh per unit, Stators ₹ 8.15 lakh per unit, (b) Avoidable payment is difference in current rate and previous rate * No. of Rotors/Stators = ₹ 1.38 lakh*769 + ₹ 1.17 lakh*450 = ₹ 1,061.22 lakh+ ₹ 526.50 lakh = ₹ 1,587.72 lakh

[230]WAG9 , WAG9H and WAP7 classes of locomotives

[231]Traction converter/inverter, Auxiliary Converter/Inverter, Cooling System, Control Communication & Protection System, Driver Display Unit, Interface with other equipments, Apparatus for ensuring safety of operating and maintenance personnel,

procured these nine equipment individually from trade. However, after May 2012, it also started procuring propulsion system (including all nine equipment) as a whole.

Audit noted that CLW procured 83 full propulsion systems[233] (with two DDUs in each system) from M/s Medha Servo Drive Pvt. Ltd (Medha) during April 2013 to March 2018.

Additionally, CLW continued to procure DDUs (an individual component of propulsion system) from trade. Audit noted that procurement of DDUs was done from July 2013 through a single vendor viz. M/s Advanced Rail Controls Pvt. Ltd (ARC). During 2015-16 to 2017-18, CLW had procured 1,706 DDUs against three tenders[234]. In these tenders, M/s Medha's offer of ₹ 2.70 lakh per unit was rejected whereas ARC's higher offer of ₹ 3.34 lakh per unit was accepted.

Audit observed that:

- The lower offer of M/s Medha was rejected, even though it had successfully supplied[235] the propulsion systems to CLW during the same period.
- The price offer of M/s Medha was rejected on the grounds that it was a Part-II vendor[236]. Audit however noted that CLW had earlier placed bulk orders on M/s ARC when it was a Part-II vendor.
- Audit further could not find on record any efforts made by CLW for convincing M/s ARC to match the lower rate quoted by M/s Medha. This would have saved ₹ 0.64 lakh per unit (₹ 3.34 lakh per unit minus ₹ 2.70 lakh per unit) in procurement of 1,706 DDUs in the above three tenders.

Traction Motor Speed Sensors & Source code and compiler of software of traction/auxiliary converter *etc*.

[232]DDU displays important information relevant to the driver, such as operational aspects, fault status / messages *etc*.

[233]Traction converters, auxiliary converters, vehicle control units (VCUs) and other associated sub-systems (total nine equipments) Specification No. RDSO/2008/EL/SPEC/0071.

[234] Tender nos. 71/15/5090, 71/16/5090 and 71/17/5090.

[235]As per RDSO letter dated 1 July 2014 (F/820 of offer Vol.I), the locomotive was offered for traffic from 23 January 2014. It had completed 64,000 kms without any problem and therefore, its performance was considered satisfactory.

[236] Vendors are classified as Part-I and Part II. Part I vendors are approved by RDSO. Part II vendors are those who are capable of supplying items to Railways and are encouraged for Development orders resulting in vendor development.

Thus, lapse on the part of CLW for not considering the lower offer of Medha at the time of finalisation of the rates of procurement of DDU resulted in extra expenditure of ₹ 10.92 crore.

The matter was taken up with MoR in June 2020; no reply was received (February 2021).

New Delhi
Dated: 28 June 2021

(ROY MATHRANI)
Deputy Comptroller and Auditor General

Countersigned

New Delhi
Dated: 30 June 2021

(GIRISH CHANDRA MURMU)
Comptroller and Auditor General of India

Annexure

Anneure 1.1 (Reference Para 1.8)								
Year-wise Pendency position of Action Taken Notes (ATNs) – (As on 30 September 2020)								
Sl.No	Report year	Total number of Paras in the Report (s)	No. of Paragraphs on which ATNs finalized	No. of Reports/ Paras on which ATNs have not been submitted even for the first time	No. of Reports/ Paras on which revised ATNs are awaited	No. of ATNs which have been finally vetted by Audit but pending with Ministry for submission to PAC	No. of ATNs pending with Audit for vetting	Total No. of pending ATNs
1	2012-13	30	30	0	0	0	0	0
2	2013-14	47	45	0	1	0	1	2
3	2014-15	44	40	0	3	0	1	4
4	2015-16	45	36	0	7	0	2	9
5	2016-17	46	23	0	12	1	10	23
6	2017-18	2	0	0	1	0	1	2
Total		**214**	**174**	**0**	**24**	**1**	**15**	**40**

Status of Public Account Committee's Action Taken Reports (ATRs) of 16th and 17th Lok Sabha (as on 30 September 2020)					
Report No.	Total number of Paragraph	No. of Paragraphs on which ATR finalised	No. of Paragraphs on which ATRs are pending		
			ATR vetted by Audit and pending with Ministry	Vetted ATR sent to Ministry with comments	ATR pending with Audit for vetting comments
4th	5	5	0	0	0
84th	2	2	0	0	0
86th	3	3	0	0	0
88th	7	7	0	0	0
93rd	8	8	0	0	0
99th	3	3	0	0	0
100th	3	3	0	0	0
108th	3	3	0	0	0
109th	10	10	0	0	0
116th	2	2	0	0	0
117th	1	1	0	0	0
119th	5	5	0	0	0
Total	**52**	**52**	**0**	**0**	**0**

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
1	ECoR	Khurda Road	KPJG-ANGL	150/4	150/6	0.06	Odisha	
2			TLHR-BDPK	485/37	484/25	1.36	Odisha	
3			RJGR-JRZ	427/29	427/23	0.18	Odisha	
4			RJGR-JRZ	426/23	426/13	0.3	Odisha	
5			RJGR-JRZ	429/01	437/0	7.94	Odisha	
6			RJGR-GJTA	419/0	417/0	2	Odisha	
7			RJGR-GJTA	417/1	417/03	0.06	Odisha	
8			RJGR-GJTA	415/25	415/12	0.36	Odisha	
9			RJGR-GHNH	427/26	427/28	0.06	Odisha	
10			RJGR-GHNH	427/6	428/24	1.48	Odisha	
11			RJGR-GHNH	429/2	429/04	0.06	Odisha	
12			BYY-SDJR	385/9	385/12	0.12	Odisha	
13			SQQ-CBT	403/20	403/28	0.24	Odisha	
14			SQQ-CBT	404/17	404/24	0.18	Odisha	
15			DNDL-SSPR	450/31	464/0	13	Odisha	
16			SSPR-HND	455/15	458/17	3.06	Odisha	
17			SSPR-HND	483/0	484/02	1.06	Odisha	
18			KDJR-NKW	16/0	23/11	5.3	Odisha	Wrong notification in Km.
19			RBA-HMA-GAM	557/19	568/07	11	Odisha	

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
20		Sambalpur	MANE-HATB	17/01	17/02	0.1	Odisha	
21			MANE-HATB	19/01	19/02	0.1	Odisha	
22			HATB-JUJA	28/01	29/0	0.9	Odisha	
23			HATB-JUJA	31/01	31/9	0.8	Odisha	
24			HATB-JUJA	35/9	36/1	0.2	Odisha	
25			JUJA-CHAR	40/2	40/3	0.1	Odisha	
26			JUJA-CHAR	44/6	44/7	0.1	Odisha	
27			JUJA-CHAR-RAIR	47/0	64/0	17	Odisha	
28			RAIR-BAMR	81/0	83/0	2	Odisha	
29			BONA-JRPD	122/05	129/05	7	Odisha	
30			KPJG-ANGL	149/04	151/05	2	Odisha	
31			LJR-AMB	252/12	262/04	9.5	Odisha	
32			AMB-DKLU	264/04	274/03	9.9	Odisha	
33		Waltair	RUL-TKRI	94/13	94/01	0.12	Odisha	
34			BGUA-DMNJ	32/0	25/0	7	Odisha	
1	ECR	Dhanbad	BRKA-GHD	245/33	245/37	0.113	Jharkhand	
2			KQR-HZBN	45/8	24/09	0.07	Jharkhand	

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
1	NER	Izatnagar	HLDD-LKU	62/0	63/0	1	Uttarakhand	
2			PBW-LKU	60/2	61/4	1.2	Uttarakhand	
3		Lucknow	MIN-MUH	121/0	123/0	2	Uttar Pradesh	
4			MIN-MUH	128/0	132/0	4	Uttar Pradesh	
5			NSA-MJPB	155/0	164/0	9	Uttar Pradesh	
6			MJPB-TQN	173/0	176/0	3	Uttar Pradesh	
7			TQN-BXM	193/0	194/0	1	Uttar Pradesh	
8			BXM-DDW	194/0	221/4	27.4	Uttar Pradesh	
9			BXM-DDW	222/5	222/10	0.5	Uttar Pradesh	
10			DDW-PLK	228/5	228/7	0.2		
1	NFR	Rangiya	PNVT-GLPT	44/9	46/4	1.5	Assam	
2			PNVT-GLPT	49/9	50/0	0.1	Assam	
3			DDNI-KRNI	65/7	68/3	2.6	Assam	
4			AMGA-RGJI	90/1	90/2	0.1	Assam	
5			RGJI-DPRA	93/7	93/8	0.1	Assam	
6			AZA-KYQ	163/0	168/0	5	Assam	
7			RNY-MZS	101.4	103.6	2.2	Assam	

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
8				105.5	108	2.5	Assam	
9				113.5	116.3	2.8	Assam	
10				118.3	120.9	2.7	Assam	
11				124.2	128.5	4.3	Assam	
12				130.1	131.7	1.6	Assam	
13				142.6	146.9	4.3	Assam	
14				148.7	151.2	2.5	Assam	
15				164	164.3	0.3	Assam	
16				179.2	184.9	5.7	Assam	
17				196	202	6	Assam	
18				321.8	332.4	10.6	Assam	
19			RPAN-DKGN	5	9.3	4.3	Assam	
20				10.4	12.3	1.9	Assam	
21				13.9	14.2	0.2	Assam	
22				5.7	5.9	0.2	Assam	
23			BVU-BHNG	7.7	9	1.3	Assam	
24				15.8	15.9	0.1	Assam	
25				6.4	7.9	1.5	Assam	

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
26			HMY-GMTO	15/5	17/0	1.5	Assam	
27		Katihar	BORA-NAK	15/5	17/0	1.5	West Bengal	
28		Lumding	PHI-TKC	25/7	26/4	0.7	Assam	
29			PNB-DGU	38/0	41/0	3	Assam	
30			HWX-LKG	166/6	170/0	3.4	Assam	
31			HWX-LKG	171/5	172/8	1.3	Assam	
32			HWX-LKG	174/1	174/4	0.3	Assam	
33			LKG-PKB	179/4	179/7	0.3	Assam	
34			LKG-PKB	180/4	180/8	0.4	Assam	
35			LKG-PKB	188/2	188/4	0.2	Assam	
36			LCT-NLN	207/0	210/0	3	Assam	
37			DPU-DLDE	228/3	231/6	3.3	Assam	
38			DLDE-DSR	236/5	236/8	0.3	Assam	
39			DMV-KHKT	263/3	265/2	1.9	Assam	
40			KHKT-BXJ	268/0	270/5	2.5	Assam	
41		Tinsukia	CMA-MXN	80/7	82/0	1.3	Assam	
42			CMA-MXN	82/6	83/3	0.7	Assam	
43			CMA-MXN	373/6	371/6	2	Assam	
44			DBY-TII	14/0	20/0	6	Assam	

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
45			DBY-TII	20/0	21/0	1	Assam	
46		Alipurduar	SVQ-GLMA	16/5	27/7l	11.2	West Bengal	
47			CLD-NKB	65/2	68/9	3.7	West Bengal	
48			CLD-NKB	68/9	73/0	4.1	West Bengal	
49			NKB-CRX	79/0	80/9	1.9	West Bengal	
50			CRX-BNQ	82/0	88/0	6	West Bengal	
							West Bengal	
51			CRX-BNQ	82/0	104/4	22.4	West Bengal	
52			CRX-BNQ	84/0	86/0	2	West Bengal	
53			MDT-HAS	128/1	130/8	2.7	West Bengal	
54			HSA-KCF	140/2	141/3	1.1	West Bengal	
55			RVK-APDJ	159/0	164/0	5	West Bengal	
56			SGUJ-BRQ	27/7	34/2	6.5	West Bengal	
57			CRX-DLO	81/6	100/6	19	West Bengal	
58			MJE-APDJ	114/0	168/0	54	West Bengal	
59			NKB-CLD	65/2	73/0	7.8	West Bengal	
60			CRX-DLO	85/5	104/4	18.9	West Bengal	
61			MDT-HAS	128/1	130/8	2.7	West Bengal	
62			HAS-KCF	140/2	141/3	1.1	West Bengal	

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
63			KCF-RVK	154/0	157/1	3.1	West Bengal	
64			GLMA-BRQ	22/9	23/0	0.1	West Bengal	
65			SVQ-BRQ	30/8	33/8	3	West Bengal	
66			NMZ-NKB	59/4	64/9	5.5	West Bengal	
67			RVK-APDJ	157/0	168/0	11	West Bengal	
68			LTG-BDS	18/08	22/03	3.5	West Bengal	
1	NR	Moradabad	MOTC-RWL	34/0	34/1	0.1	Uttarakhand	
2			RWL-QSR	40/5	40/6	0.1	Uttarakhand	
3			RWL-QSR	40/14	40/15	0.12	Uttarakhand	
4			RWL-QSR	40/17	40/18	0.1	Uttarakhand	
5			RWL-QSR	41/1	41/2	0.1	Uttarakhand	
6			RWL-QSR	46/14	46/15	0.1	Uttarakhand	
7			RWL-QSR	47/8	47/9	0.1	Uttarakhand	
8			RWL-QSR	48/7	48/8	0.1	Uttarakhand	
9			NBD-KTW	14/05	14/06	0.1	Uttar Pradesh	
10			NBD-KTW	15/05	15/06	0.1	Uttar Pradesh	

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
11			NBD-KTW	20/02	20/03	0.1	Uttar Pradesh	
1	SER	Chakradharpur	SWR-MOU	332/1	367/1	35	Jharkhand	Fencing provided on cost sharing basis at km 362/21-364/34 with forest department (3.3 km) and Railway
2			MOU-JRA	377/25	378/11	0.672	Jharkhand	
3			MOU-JRA	381/5	382/19	0.49	Jharkhand	
4			JRA-BUL	385/21	387/4	1.5	Odisha	
5			BNDM-BZR	400/22	400/24	0.07	Odisha	
6			SXN-JPH	450/32	460/32	10	Odisha	
7			DIH-DTV	487/1	504/1	17	Odisha	
8			TATA-BDO	285/1	286/7	1.6	Jharkhand	
9			TATA-BDO	286/7	287/10	1.3	Odisha	
10			KIJ-BMPR	335/5	337/8	2.3	Odisha	
11			A'CAB-DMF	410/2	410/4	0.07	Odisha	
12			DMF-LTK	414/1	416/1	2	Odisha	
13			CJQ-PSJ	433/1	444/1	11	Odisha	
14			PSJ-BUF	447/1	450/1	3	Odisha	
15			BUF-BXF	455/5	462/15	7.75	Odisha	

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
16			BUF-BXF	466/6	472/1	5.82	Odisha	
17			KMPD-KRBU	488/9	493/4	4.66	Jharkhand	
18			MLKA-DPS	356/20	366/4	9.43	Jharkhand	
19			DPS-NOMD	367/5	374/5	6.54	Jharkhand	
20			NOMD-BJMD	379/26	379/28	0.06	Jharkhand	
21			BJMD-GX	391/16	392/12	0.787	Jharkhand	
22			PDPH-JKDA	372/30	379/13	7	Jharkhand	
23			JKDA-DJHR	379/30	386/10	6.59	Odisha	
24			BSPX-JRLI	400/01	408/01	8	Odisha	
25			JRLI-NYG	409/10	415/06	5.75	Odisha	
26		Kharagpur	KKQ-SUA	124/1	138/1	14	West Bengal	One elephant dashed at km. 133/23-25 on 27.09.2017. Only 40 kmph + OES caution order issued as per advice of DFO during elephant movement time.

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
27			CKU-GII	173/5	179/5	6	West Bengal & Jharkhand	Three elephants dashed, died at km. 172/15-17 on 07.08.2018. Only 40 kmph + OES caution order issued as per advice of DFO during elephant movement time.
28			DVM-KKPR	199/1	201/1	2	Jharkhand	40 kmph + OES caution order imposed as per advice of DFO during elephant movement time.
29			JER-ARD	186/21	193/19	7	Odisha	40 kmph + OES caution order imposed as per advice of DFO during elephant movement time.
30			ARD-BTS	202/1	210/1	8	Odisha	40 kmph + OES caution order imposed as per advice of DFO during elephant movement time.

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	Zone	Division	Section	Km from	Km to	Length of passage in Km.	State involved	Remarks
31			RPO-BTQ	00/05	23/00	23	Odisha	40 kmph + OES caution order imposed as per advice of DFO during elephant movement time.
32			ROP-BTQ	41/8	48/6	7	Odisha	40 kmph + OES caution order imposed as per advice of DFO during elephant movement time.
33		Adra	ODM-PBA	205	183	22	West Bengal	Death of one elephant in 2015 at km 201/27-29 between ODM-VSU section and death of 03 elephants in 2016 at km 195/23-25 between VSU-PBA section.
34			GBA-CDGR	174	170	4	West Bengal	Elephant passing observed very frequently.
35			CDGR-SLB	158	155	3	West Bengal	Elephant passing observed very frequently.

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	**Zone**	**Division**	**Section**	**Km from**	**Km to**	**Length of passage in Km.**	**State involved**	**Remarks**
36			SLB-GSL	142	151	9	West Bengal	Elephant passing observed very frequently.
37			GSL-MDN	135	137	2	West Bengal	Elephant passing observed very frequently.
38		Ranchi	BLRG-LOM	438/10	438/11	0.07	Jharkhand	
39			KRRA-GBX	461/01	461/14	1	Jharkhand	
40				462/09	462/14	0.35		
41				463/16	464/05	0.28		
42			BKPR-PKF	482/09	482/02	0.3	Jharkhand	
43			PKF-PMC	490/01	490/04	0.28	Jharkhand	
44			MCZ-BANO	513/14	514/02	0.25	Jharkhand	
45				514/22	515/10	0.5		
46			SLF-KITA-GATD-JONA (UP & DN)	364/29	372/13	7.5	Jharkhand	
47			KITA-GATD (UP)	375/00	377/23	2.8	Jharkhand	Death of 02 no. of wild animals (Elephant) on 26.09.2016.
48				380/00	382/49	3		
49			JONA-GAG (DN)	391/36	391/42	0.2	Jharkhand	

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	**Zone**	**Division**	**Section**	**Km from**	**Km to**	**Length of passage in Km.**	**State involved**	**Remarks**
50			GAG-TIS (DN)	396/18	396/28	0.3	Jharkhand	
51				399/00	399/08	0.15		
52				400/12	400/25	0.15		
1	SR	Pallakad	MDKI-ETMD (A line)	497/600	499/400	1.8	Tamil Nadu	
2			ETMD-WRA (A Line)	505/000	510/100	5.1	Tamil Nadu & Kerala	
3			MDTI-ETMD (B Line)	497/300	499/300	2	Tamil Nadu	
4			ETMD-WRA (B Line)	505/000	509/100	6.1	Tamil Nadu & Kerala	The B line is longer than A line due to ghat section.
5			WRA-KJKD (B Line)	510/100	518/000	8.9	Kerala	The B line is longer than A line due to ghat section.
6			WRA-KJKD (A Line)	510/000	513/700	3.7	Kerala	
7			KJKD-KTKU (A&B Line)	525/100	527/700	2.6	Kerala	

Anneure 2.1 Statement of identified elephant passages in Indian Railways {Para 2.1.5 & 2.1.6(i)}								
Sl No.	**Zone**	**Division**	**Section**	**Km from**	**Km to**	**Length of passage in Km.**	**State involved**	**Remarks**
1	SWR	Hubbali	UBL-LD	531/9	532/2	0.3	Karnataka	
2			UBL-LD	533/8	534/0	0.2	Karnataka	
3			UBL-LD	537/7	537/5	0.2	Karnataka	
4			UBL-LD	540/7-540/5	540/5	0.2	Karnataka	
5			UBL-LD	550/4-550/1	550/1	0.3	Karnataka	
6			LD-MRJ	564/4-564/8	564/8	0.4	Karnataka	
7			LD-MRJ	570/0-570/1	570/1	0.1	Karnataka	
8		Bengaluru	SBC-JTJ	231/5-237/5	237/5	6	Tamil Nadu	
9			SBC-SA	126/0-134/0	134/0	8	Tamil Nadu	
10		Mysore	HAS-MAQ	71/0-71/2	71/2	0.2	Karnataka	
			194 Passages			**769.162**		

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
ECoR	RJGR-JRZ	426/23-426/13	Speed restriction of BLW+SLO+S DIR imposed permanently since 19.01.2013	Yes	Retro-reflective	Inside the Passage	Yes	No	No	No	No	No	No
ECoR	RJGR-GJTA	419/0-417/0	Speed restriction of BLW+SLO+S DIR imposed for Km 417/05-417/15 since 18.01.2013	Yes	Hand Painted	Inside the Passage	Yes	No	No	No	No	No	No
ECoR	RJGR-GHNH	427/26-427/28	Speed restriction imposed for 50kmph(Down line) on daily basis from 18.00 hrs to 07.00 hrs. However no caution order imposed on Up line	Yes	Hand Painted	Before beginning of the passage	No	No	No	No	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
ECoR	SQQ-CBT	403/20-403/28	Permanent caution order of BLW+SLO imposed from Km 403/31-403/29 Upline and 402/18-402/19 Down line since 24.01.2013	Yes	Hand Painted	Before beginning of the passage	Yes	No	No	No	No	No	No
ECoR	DNDL-SSPR	450/31-455/10	Temporary speed restriction of 50kmph imposed regularly from 1800 hrs to 0700 hrs as per advice of Forest department	Yes	Retro-reflective	Before beginning of the passage	Yes	Yes (LC No-44 at Km)	No	No	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
ECoR	SSPR-HND	455/15-458/17	Speed restriction of 50kmph imposed temporarily as advised by control office/KUR	Yes	Retro-reflective	Before beginning of the passage	Yes	No	No	No	No	No	No
ECoR	KDJR-BSTP	66/01-68/01	Permanent Speed Restriction of BLW+SLO+DIR has been imposed since 16.10.2018	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
ECoR	RBA-HMA-GAM	557/19-568/07	Permanent caution order of BLW+DIR+SLO for Km555/17-21 to 562/7-9, 555/09-01 to 564/16-17 and 556/32-30 to 568/6-8 both Up and Down lines since 26.06.2013	Yes	Hand Painted	Beginning of the passage	Yes	No	No	No	No	The solar fencing was dismantled by Forest department.	No
ECoR	BONA-JRPD	122/05-129/05	Caution order of BLW+SLO+proceed at Km121/00-127/00 w.e.f 04.11.2018 (for night time) and from 22.11.2018 (for day time)	Yes	Hand Painted	Before beginning of the passage	Yes	No	No	No	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
ECoR	LJR-AMB	252/12-262/04	Caution order of BLW+ Look & proceed for entire section between LJR-AMB (both Up & Down line) since 19.06.2013	Yes	Hand Painted	Before beginning of the passage	Yes	No	No	No	No	No	No
ECR	BRKA-GHD	245/33-245/37	Yes (25kmph)	Yes	Retro-reflective	Before beginning of the passage	Yes	No	No	No	No	No	No
ECR	KQR-HZBN	45/8-45/9	Not necessary since overpass has already exist	Yes	Retro-reflective	Before beginning of the passage	Yes	No	Yes	No	No	No	No
NER	NSA-MJPB	150/0-164/0	Yes (30 Kmph)	No	Not applicable	Not applicable	Yes	No	No	Yes	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}													
Zonal Railway	**Name of the identified passage jointly inspected**	**Location (from-to km)**	**Imposition of speed Restriction**	**Availablity of signage board**	**Types of signage Board**	**Signae Provided at the location**	**Vegetation clearance**	**Installation of Honey bee sound device**	**Construction/ Proposal of overpass/ underpass**	**Whether any food items found near the track which would attract elephants**	**Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations**	**Wheher barricade/ fencing of the section is proposed/ completed.**	**Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area**
NER	MJPB-KYBR	173/0-176/0	Yes (30 Kmph)	Yes	Hand Painted	Inside the Passage	Yes	No	No	Yes	No	No	No
NER	BXM-DDW	193/0-194/0	Yes (30 Kmph)	No	Not applicable	Not applicable	Yes	No	No	Yes	No	No	No
NER	BXM-DDW	194/0-221/4	Yes (30 Kmph)	Yes	Hand Painted	Inside the Passage	Yes	No	No	Yes	No	No	No
NER	DDW-PLK	222/5-222/10	Yes (30 Kmph)	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	Yes	No	No	No
NER	DDW-PLK	228/5-228/7	Yes (30 Kmph)	Yes	Hand Painted	Beginning of the passage	Yes	No	No	Yes	No	No	No
NER	MIN-MUH	128/0-132/0	Yes (30 Kmph)	No	Not applicable	Not applicable	Yes	No	No	Yes	No	No	No
NER	MIN-MUH	121/0-123/0	Yes (30 Kmph)	No	Not applicable	Not applicable	Yes	No	No	Yes	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
NER	LKU-HLDD	62/0-63/0	Yes (30 Kmph)	No	Not applicable	Not applicable	Yes	No	No	No	No	No	No
NER	LKU-PBW	60/2-61/4	Yes (30 Kmph)	Yes	Hand Painted	Beginning of the passage	Yes	No	No	Yes	No	No	No
NFR	RGJI-AMGA	85/0 to 92/0	60 KMPH between 90/1-90/2.	No	Not applicable	Not applicable	Yes	No	No	No	No	No	No
NFR	AZA-KYQ	163/0-168/0	30 KMPH	Yes	Retro-reflective	Before beginning of the passage	Yes	Yes	No	No	No	No	No
NFR	DKJR-NMM	101/4-108/0	45 KMPH	Yes	Hand Painted	Before beginning of the passage	Yes	At LC Gate No. RM/56, RM/57 & RM/58	No	No	No	Fencing Proposed between 101/0 to 132/0.	No
NFR	RPAN-BVU	125/4-131/7	30 KMPH	No	Not applicable	Not applicable	Yes	At LC Gate No. RM/106, RM/107 & RM/108	Proposal exists at Km. 125/5-7	No	No	No	No
NFR	BVU-DQL	132/5-146/9	45 KMPH	Yes	Hand Painted	Before beginning of the passage	Partial vegetation	At LC Gate No. RM/113, RM118 & RM119	No	No	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
NFR	RPAN-BKTB	2/0-9/3	30 KMPH	No	Not applicable	Not applicable	Partial Vegetation	At LC Gate No RT/3 working & RT/4 defunct.	No	No	No	No	No
NFR	BNQ-CRX	82/0-104/0	30KMPH	No	Not applicable	Not applicable	Partial vegetation	No	No	No	No	No	No
NFR	CLD-NKB	65/0-73/0	50KMPH	Yes	Retro-reflective	Before beginning of the passage	Partial vegetation	One at Km. 69-3/4	No	No	No	No	No
NFR	GLMA-SVQ	16/5-27/7	30 KMPH	Yes	Retro-reflective	Before beginning of the passage	No	No	Underpass at 21/2-3(34/A)/G-Bridge at 24 (45/A)	Yes, along the track in some places	No	Fencing between Km. 25/9-26/2-3	No
NFR	KCF-HAS	140/2-141/3	30KMPH	Yes	Retro-reflective	Before beginning of the passage	Yes	At LC Gate No. SK/34,	No	No	No	One side Railing (Left) between section.	No
NFR	RVK-APDJ	157/0-168/0	30KMPH	No	Not applicable	Not applicable	Partial Vegetation	At LC Gate No Sk/119 (164-6/7),Sk/124 (158-7/8)	No	Yes at one place (158/3)	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
NFR	RVK-KCF	154/0-157/1	30KMPH	No	Not applicable	Not applicable	Partial Vegetation	At 155-2/3 (SK/126), Defunct	No	No	No	No	No
NFR	PHI-TKC	25/7-29/6	50KMPH	No	Not applicable	Not applicable	Heavy vegetation at both side	No	No	Yes	No	No	No
NFR	HWX-LKG	166/6-174/4	45 KMPH	Yes	Retro-reflective	Before beginning of the passage	Partial vegetation	No	08 Underpass & 01 overpass proposed	No	No	No	No
NFR	TII-DBY	14/0-21/0	20KMPH	Yes	Retro-reflective	Inside the Passage	Partial Vegetation	At TII & ML/3	Proposal of under pass b/w 20/4-5 by PWI/MRG	No	No	No	No
NR	NBD-SNX	14/5-14/06	15 Kmph (Permanent)	No	Not applicable	Not applicable	Yes	No	No	No	No	No	No
NR	NBD-SNX	15/5-15/06	15 Kmph (Permanent)	No	Not applicable	Not applicable	Yes	No	No	No	No	No	No
NR	RWL-QSR	46/14-46/15	35KMPH from 2200 hrs to 0600 hrs	No	Not applicable	Not applicable	No	No	No	No	No	No	Yes (at RWL and QSR)

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
NR	RWL-QSR	47/08-47/09	35KMPH from 2200 hrs to 0600 hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	Yes (at RWL and QSR)
NR	RWL-QSR	48/07-48/08	35KMPH from 2200 hrs to 0600 hrs	No	Not applicable	Not applicable	Yes	No	No	No	No	No	Yes (at RWL and QSR)
NR	RWL-QSR	40/05-40/06	35KMPH from 2200 hrs to 0600 hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	Yes (at RWL and QSR)
NR	RWL-QSR	40/14-40/15	35KMPH from 2200 hrs to 0600 hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	Yes (at RWL and QSR)
NR	RWL-QSR	40/17-40/18	35KMPH from 2200 hrs to 0600 hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	Yes (at RWL and QSR)
NR	RWL-QSR	41/1-41/2	35KMPH from 2200 hrs to 0600 hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	Yes (at RWL and QSR)
NR	MOTC-RWL	34/00-34/01	35KMPH from 2200 hrs to 0600 hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	Yes (at MOTC and RWL)

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
SER	ODM-PBA	205/0-183/0	Yes (40 kmph)	Yes	Hand Painted	Inside the Passage	Yes	No	Not proposed	No	No	Not proposed	No
SER	GBA-CDGR	172/8-172/28	Yes (40 kmph)	No	Not applicable	Not applicable	Yes	No	Not proposed	No	No	Not proposed	No
SER	GSL-MDN	135/10-137/16	Yes (40 kmph)	No	Not applicable	Not applicable	Yes	No	Not proposed	No	No	Not proposed	No
SER	JER-ARD	186/21-193/19	Yes (40 kmph)	Yes	Retro-reflective	Beginning of the passage	Yes	No	Not proposed	Yes (Paddy fields near by track)	Yes	Not proposed	No
SER	ARD-BTS	202/1-210/1	Yes (40 kmph)	Yes	Retro-reflective	Beginning of the passage	Yes	No	Not proposed	Yes (Paddy fields near by track)	Yes	Not proposed	No
SER	ROP-BTQ	00/05-23/00	No	Yes	Hand painted	Beginning of the passage	Yes	No	No proposal	No	No	Not proposed	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
SER	ROP-BTQ	41/08-48/06	No	Yes	Hand painted	Beginning of the passage	Yes	No	No proposal	No	No	Not proposed	No
SER	KKQ-SUA	124-138	Yes (40 kmph)	No	Not applicable	Not applicable	Yes	No	Not proposed	No	No	Not proposed	No
SER	CKU-GII	173/5-179/5	Yes (40 kmph)	No	Not applicable	Not applicable	Yes	No	Not proposed	No	No	Not proposed	No
SER	DVM-KKPR	199-201/1	Yes (40 kmph)	No	Not applicable	Not applicable	Yes	No	Not proposed	No	No	Not proposed	No
SER	DIH-DTV	487/1-504/1	Yes (40 kmph)	Yes	Retro-reflective	Inside the Passage	Yes	No	Not proposed	No	Yes	Yes (UP-2.67 km & DN-2.23 km)	No
SER	SWR-MOU	332/1-367/1	No	Yes	Hand Painted	Inside the Passage	Yes	No	No record found	No	Yes	Yes (3.3 Km)	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
SER	KITA-GATD (UP)	380/0-382/49	No	No	Not applicable	Not applicable	No	No	No	No	No	Not proposed	No
SR	MDKI-ETMD	497/6-499/4 (A Line)	Permanent Speed Restriction of 45Kmph has been imposed due to frequent crossing of elephant from 18:00 hrs to 06:00hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	No
SR	ETMD-WRA	505/0-510/10 (A Line)	Permanent Speed Restriction of 45Kmph has been imposed due to frequent crossing of elephant from 18:00 hrs to 06:00hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}													
Zonal Railway	**Name of the identified passage jointly inspected**	**Location (from-to km)**	**Imposition of speed Restriction**	**Availablity of signage board**	**Types of signage Board**	**Signae Provided at the location**	**Vegetation clearance**	**Installation of Honey bee sound device**	**Construction/ Proposal of overpass/ underpass**	**Whether any food items found near the track which would attract elephants**	**Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations**	**Wheher barricade/ fencing of the section is proposed/ completed.**	**Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area**
SR	MDTI-ETMD	497/3-499/3 (B Line)	Permanent Speed Restriction of 45Kmph has been imposed due to frequent crossing of elephant from 18:00 hrs to 06:00hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	No
SR	ETMD-WRA	505/0-509/10 (B Line)	Permanent Speed Restriction of 45Kmph has been imposed due to frequent crossing of elephant from 18:00 hrs to 06:00hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
SR	WRA-KJKD	510/1-518/0 (B Line)	Permanent Speed Restriction of 45Kmph has been imposed due to frequent crossing of elephant from 18:00 hrs to 06:00hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	Rail fencing from Km. 510/5 to 518/0 is proposed. Solar electric fencing provided by Kerala Forest dept. between Km.510/5-517/2	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
SR	WRA-KJKD	510/0-513/7 (A Line)	Permanent Speed Restriction of 45Kmph has been imposed due to frequent crossing of elephant from 18:00 hrs to 06:00hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	Rail fencing from Km 510/02 to 513/0 is proposed.	No
SR	KJKD-KTKU	525/1-527/7 (A&B Line)	Permanent Speed Restriction of 45Kmph has been imposed due to frequent crossing of elephant from 18:00 hrs to 06:00hrs	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	No	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}

Zonal Railway	Name of the identified passage jointly inspected	Location (from-to km)	Imposition of speed Restriction	Availablity of signage board	Types of signage Board	Signae Provided at the location	Vegetation clearance	Installation of Honey bee sound device	Construction/ Proposal of overpass/ underpass	Whether any food items found near the track which would attract elephants	Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations	Wheher barricade/ fencing of the section is proposed/ completed.	Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area
SWR	UBL-LD	531/9-532/2	No	Yes	Hand Painted	Beginning of the passage	Yes	Yes	No	Yes	No	Yes	No
SWR	UBL-LD	533/8-534/0	No	Yes	Hand Painted	Beginning of the passage	Yes	No	No	No	No	Yes	No
SWR	UBL-LD	537/7-537/5	No	Yes	Hand Painted	Beginning of the passage	Yes	No	No	No	No	Yes	No
SWR	UBL-LD	540/7-540/5	No	Yes	Hand Painted	Beginning of the passage	Yes	No	No	Yes	No	Yes	No
SWR	UBL-LD	550/4-550/1	No	Yes	Hand Painted	Beginning of the passage	Yes	Yes	No	Yes	No	No	No

Annexure 2.2-Steps taken in identified passages to prevent train elephant collision {Para 2.1.6 (iii)}													
Zonal Railway	**Name of the identified passage jointly inspected**	**Location (from-to km)**	**Imposition of speed Restriction**	**Availablity of signage board**	**Types of signage Board**	**Signae Provided at the location**	**Vegetation clearance**	**Installation of Honey bee sound device**	**Construction/ Proposal of overpass/ underpass**	**Whether any food items found near the track which would attract elephants**	**Whether staff/ pasengers were senistised through banner/ poster/ announcement at the adjacent stations**	**Wheher barricade/ fencing of the section is proposed/ completed.**	**Whether separate wireless commu-nication has been provided at the station falling within the vul-nerable Area**
SWR	LD-MRJ	564/4-564/8	No	Yes	Hand Painted	Beginning of the passage	Yes	Yes	No	Yes	No	No	No
SWR	LD-MRJ	570/0-570/1	No	Yes	Retro-reflective	Beginning of the passage	Yes	No	No	Yes	No	No	No
SWR	SBC-JTJ	231/5-237/5	No	No	Not applicable	Not applicable	Yes	No	No	No	No	No	No
SWR	HAS-MAQ	71/0-71/2	No	Yes	Non retroreflective	Beginning of the passage	Yes	No	No	No	No	No	No
SWR	SBC-SA	126/0-134/0	Yes (50kmph)	Yes	Non retroreflective	Beginning of the passage	Yes	No	No	No	No	No	No
	77 Passages Jointly Inspected												

Anneure 2.3-Statement showing avoidable expenditure due to non-withdrawal of uneconomic/ experimental stoppages (Para 2.3)											
Sl. No.	Station	Train details			Start date of stoppage	Average Earnings per train per day		Stoppage cost of Diesel/ Electric (Amount in ₹)	Avoidable expenditure per day (Amount in ₹)	Approximate days run (from 24.02.2016 to 31.03.2019	Total avoidable expenditure for more than three years (24.02.2016 to 31.03.2019) (Amount in ₹)
		Power Type(D/E)	Train number	Running frequency		Passenger (No.)	Earnings (Amount in ₹)				
1	Sahjanwa	ELECTRIC	12531	7	09.05.2009	96	11082	12717	1635	1131	1849185
2	Sahjanwa	ELECTRIC	12532	7	09.05.2009	21	2480	12717	10237	1131	11578047
3	Colonelganj	ELECTRIC	12531	7	27.02.2009	128	6799	12717	5918	1131	6693258
4	Colonelganj	ELECTRIC	12532	7	27.02.2009	33	2442	12717	10275	1131	11621025
5	Jarawal Road	ELECTRIC	12531	7	01.01.2014	22	1599	12717	11118	1131	12574458
6	Jarawal Road	ELECTRIC	12532	7	01.01.2014	3	327	12717	12390	1131	14013090
7	Babhnan	ELECTRIC	12531	7	01.01.2013	139	11951	12717	766	1131	866346
8	Babhnan	ELECTRIC	12532	7	01.01.2013	40	4142	12717	8575	1131	9698325
9	Mahmudabad	ELECTRIC	15211	7	10.05.2011	1	239	12717	12478	1131	14112618
10	Mahmudabad	ELECTRIC	15212	7	10.05.2011	1	172	12717	12545	1131	14188395
11	Nababganj	DIESEL	14213	7	01.01.2013	2	154	23578	23424	1131	26492544
12	Nababganj	DIESEL	14214	7	01.01.2013	30	1659	23578	21919	1131	24790389
13	Katra	DIESEL	14213	7	24.02.2014	17	602	23578	22976	1131	25985856
14	Katra	DIESEL	14214	7	24.02.2014	24	1446	23578	22132	1131	25031292
15	Maskanwa	ELECTRIC	11123	7	01.07.2013	46	6771	12717	5946	1131	6724926
16	Maskanwa	ELECTRIC	11124	7	01.07.2013	38	3946	12717	8771	1131	9920001
17	Laxmipur	DIESEL	15019	6	18.11.2013	40	3850	23578	19728	970	19136160

Anneure 2.3-Statement showing avoidable expenditure due to non-withdrawal of uneconomic/ experimental stoppages (Para 2.3)											
Sl. No.	Station	Train details			Start date of stoppage	Average Earnings per train per day		Stoppage cost of Diesel/ Electric (Amount in ₹)	Avoidable expenditure per day (Amount in ₹)	Approximate days run (from 24.02.2016 to 31.03.2019	Total avoidable expenditure for more than three years (24.02.2016 to 31.03.2019) (Amount in ₹)
		Power Type(D/E)	Train number	Running frequency		Passenger (No.)	Earnings (Amount in ₹)				
18	Laxmipur	DIESEL	15020	6	18.11.2013	45	4550	23578	19028	970	18457160
19	Khalilabad	DIESEL	15001/ 5005	3	10.02.2014	66	10923	23578	12655	485	6137675
20	Khalilabad	DIESEL	15002/ 5006	3	10.02.2014	55	7558	23578	16020	485	7769700
21	Swami narain chhapia	ELECTRIC	19038/ 19040	7	01.04.2012	19	5335	12717	7382	1131	8349042
22	Swami narain chhapia	ELECTRIC	19037/ 19039	7	01.04.2012	10	2971	12717	9746	1131	11022726
23	Basti	ELECTRIC	12211	1		5	3804	12717	8913	161	1434993
24	Basti	ELECTRIC	12212	1		13	9156	12717	3561	161	573321
25	Maskanwa	DIESEL	22531	3		23	4291	23578	19287	483	9315621
26	Maskanwa	DIESEL	22532	3		23	3637	23578	19941	483	9631503
27	Mankapur	ELECTRIC	15707	7	24.02.2014	82	9849	12717	2868	1131	3243708
28	Mankapur	ELECTRIC	15708	7	24.02.2014	37	6108	12717	6609	1131	7474779
29	Panchpedwa	DIESEL	15009	7		24	2334	23578	21244	1131	24026964
30	Panchpedwa	DIESEL	15010	7		24	2333	23578	21245	1131	24028095
31	Maniram	DIESEL	15009	7		14	1782	23578	21796	1131	24651276
32	Maniram	DIESEL	15010	7		4	341	23578	23237	1131	26281047

Anneure 2.3-Statement showing avoidable expenditure due to non-withdrawal of uneconomic/ experimental stoppages (Para 2.3)											
Sl. No.	Station	Train details			Start date of stoppage	Average Earnings per train per day		Stoppage cost of Diesel/ Electric (Amount in ₹)	Avoidable expenditure per day (Amount in ₹)	Approximate days run (from 24.02.2016 to 31.03.2019	Total avoidable expenditure for more than three years (24.02.2016 to 31.03.2019) (Amount in ₹)
		Power Type(D/E)	Train number	Running frequency		Passenger (No.)	Earnings (Amount in ₹)				
33	Pepeganj	DIESEL	15009	7		50	3680	23578	19898	1131	22504638
34	Peperganj	DIESEL	15010	7		23	2557	23578	21021	1131	23774751
35	Uska bazar	DIESEL	15009	7		49	5447	23578	18131	1131	20506161
36	Uska bazar	DIESEL	15010	7		21	2136	23578	21442	1131	24250902
37	Brijmanganj	DIESEL	15069	7		18	1539	23578	22039	1131	24926109
38	Brijmanganj	DIESEL	15070	7		29	1805	23578	21773	1131	24625263
39	Babhnan	ELECTRIC	12541	7	17.03.2016	28	4597	12717	8120	1113	9037560
40	Babhnan	ELECTRIC	12542	7	17.03.2016	8	470	12717	12247	1113	13630911
41	Khalilabad	ELECTRIC	12542	7		8	10651	12717	2066	1131	2336646
42	Parsa Tiwari	DIESEL	55027	7		6	80	23578	23498	1131	26576238
43	Parsa Tiwari	DIESEL	55028	7		25	430	23578	23148	1131	26180388
44	Munderwa	ELECTRIC	11123	7		16	1337	12717	11380	1131	12870780
45	Munderwa	ELECTRIC	11124	7		3	185	12717	12532	1131	14173692
46	Bhawanipur	DIESEL	75008	6		30	421	23578	23157	970	22462290
47	Bhawanipur	DIESEL	75007	6		13	260	23578	23318	970	22618460
48	Chainwa	DIESEL	14005	7	18.10.2007	20	4000	23578	19578	1131	22142718
49	Chainwa	DIESEL	14006	7	18.10.2007	10	500	23578	23078	1131	26101218
50	Lar Road	DIESEL	14006	7	15.04.2011	35	1925	23578	21653	1131	24489543
51	Jakhania	DIESEL	14005	7	24.10.2012	70	6700	23578	16878	1131	19089018

Anneure 2.3-Statement showing avoidable expenditure due to non-withdrawal of uneconomic/ experimental stoppages (Para 2.3)											
Sl. No.	Station	Train details			Start date of stoppage	Average Earnings per train per day		Stoppage cost of Diesel/ Electric (Amount in ₹)	Avoidable expenditure per day (Amount in ₹)	Approximate days run (from 24.02.2016 to 31.03.2019	Total avoidable expenditure for more than three years (24.02.2016 to 31.03.2019) (Amount in ₹)
		Power Type(D/E)	Train number	Running frequency		Passenger (No.)	Earnings (Amount in ₹)				
52	Jakhania	DIESEL	14006	7	24.10.2012	40	1400	23578	22178	1131	25083318
53	Jiradei	ELECTRIC	15027	7	01.01.2009	15	1000	12717	11717	1131	13251927
54	Jiradei	ELECTRIC	15028	7	01.01.2009	30	4500	12717	8217	1131	9293427
55	Mairwa	ELECTRIC	15210	7	01.01.2009	58	5000	12717	7717	1131	8727927
56	Deoria sadar	DIESEL	22531	3	02.06.2009	105	19600	23578	3978	483	1921374
57	Deoria sadar	DIESEL	22532	3	02.06.2009	20	1300	23578	22278	483	10760274
58	Bankata	DIESEL	15105	6	23.02.2009	183	5600	23578	17978	970	17438660
59	Bankata	DIESEL	15106	6	23.02.2009	4	120	23578	23458	970	22754260
60	Duraundha	DIESEL	15105	6	15.02.2012	65	3500	23578	20078	970	19475660
61	Duraundha	DIESEL	15106	6	15.02.2012	25	750	23578	22828	970	22143160
62	Nunkhar	DIESEL	15105	6	23.02.2009	65	1950	23578	21628	970	20979160
63	Nunkhar	DIESEL	15106	6	23.02.2009	1	20	23578	23558	970	22851260
64	Ekma	DIESEL	15106	6		100	4000	23578	19578	970	18990660
65	Ekma	DIESEL	15105	6		15	1000	23578	22578	970	21900660
66	Bhatpar rani	DIESEL	15105	6		360	10330	23578	13248	970	12850560
67	Bhatpar rani	DIESEL	15106	6		12	360	23578	23218	970	22521460
68	Khadda	ELECTRIC	15212	7	14.10.2010	20	650	12717	12067	1131	13647777
69	Khadda	ELECTRIC	19039	3	14.10.2010	10	500	12717	12217	483	5900811
70	Khadda	ELECTRIC	15274	7	14.10.2010	50	2500	12717	10217	1131	11555427

Anneure 2.3-Statement showing avoidable expenditure due to non-withdrawal of uneconomic/ experimental stoppages (Para 2.3)												
Sl. No.	Station	Train details			Start date of stoppage	Average Earnings per train per day		Stoppage cost of Diesel/ Electric (Amount in ₹)	Avoidable expenditure per day (Amount in ₹)	Approximate days run (from 24.02.2016 to 31.03.2019	Total avoidable expenditure for more than three years (24.02.2016 to 31.03.2019) (Amount in ₹)	
		Power Type(D/E)	Train number	Running frequency		Passenger (No.)	Earnings (Amount in ₹)					
71	Ghughli	ELECTRIC	15212	7	01.08.2011	20	1000	12717	11717	1131	13251927	
72	Sadat	DIESEL	15103	7	02.10.2011	68	2360	23578	21218	1131	23997558	
73	Siwan	DIESEL	19601	1	02.12.2012	50	9000	23578	14578	161	2347058	
74	Siwan	DIESEL	19602	1	02.12.2012	20	1500	23578	22078	161	3554558	
75	Deoria sadar	DIESEL	15021	1	30.01.2013	21	620	23578	22958	161	3696238	
76	Deoria sadar	DIESEL	15022	1	30.01.2013	81	12655	23578	10923	161	1758603	
77	Siswa Bazar	DIESEL	12557	7	15.02.2013	70	9200	23578	14378	1131	16261518	
78	Siswa Bazar	ELECTRIC	12558	7	15.02.2013	20	1500	12717	11217	1131	12686427	
79	Kaptanganj	ELECTRIC	12557	7	24.12.2013	78	11890	12717	827	1131	935337	
80	Kaptanganj	ELECTRIC	12558	7	24.12.2013	25	2595	12717	10122	1131	11447982	
81	Khorasan Road	DIESEL	13509	1	27.03.2013	8	400	23578	23178	161	3731658	
82	Khorasan Road	DIESEL	13510	1	27.03.2013	45	7800	23578	15778	161	2540258	
83	Mohammadabad (MMA)	DIESEL	13509	1	27.03.2013	8	400	23578	23178	161	3731658	
84	Mohammadabad (MMA)	DIESEL	13510	1	27.03.2013	45	7600	23578	15978	161	2572458	
85	Suraimanpur	DIESEL	15111	7	20.06.2013	75	7000	23578	16578	1131	18749718	

Anneure 2.3-Statement showing avoidable expenditure due to non-withdrawal of uneconomic/ experimental stoppages (Para 2.3)											
Sl. No.	Station	Train details			Start date of stoppage	Average Earnings per train per day		Stoppage cost of Diesel/ Electric (Amount in ₹)	Avoidable expenditure per day (Amount in ₹)	Approximate days run (from 24.02.2016 to 31.03.2019	Total avoidable expenditure for more than three years (24.02.2016 to 31.03.2019) (Amount in ₹)
		Power Type(D/E)	Train number	Running frequency		Passenger (No.)	Earnings (Amount in ₹)				
86	Suraimanpur	DIESEL	15112	7	20.06.2013	2	100	23578	23478	1131	26553618
87	Dullahpur	DIESEL	15111	7	14.09.2013	110	4400	23578	19178	1131	21690318
88	Dullahpur	DIESEL	15112	7	14.09.2013	25	825	23578	22753	1131	25733643
89	Jakhania	DIESEL	15111	7	30.06.2016	140	4200	23578	19378	1001	19397378
90	Jakhania	DIESEL	15112	7	30.06.2016	30	1700	23578	21878	1001	21899878
91	Mahpur	DIESEL	15111	7	30.06.2016	20	600	23578	22978	1001	23000978
92	Aunrihar	DIESEL	15111	7		25	750	23578	22828	1131	25818468
93	Aunrihar	DIESEL	15112	7		15	600	23578	22978	1131	25988118
94	Bhulanpur	DIESEL	12791	7	15.07.2013	5	350	23578	23228	1131	26270868
95	Bhulanpur	DIESEL	12792	7	15.07.2013	12	1250	23578	22328	1131	25252968
96	Gyanpur Road	ELECTRIC	12561	7	25.11.2013	2	500	12717	12217	1131	13817427
97	Gyanpur Road	ELECTRIC	12562	7	25.11.2013	5	700	12717	12017	1131	13591227
98	Suraimanpur	DIESEL	19045	5	26.11.2013	10	400	23578	23178	805	18658290
99	Suraimanpur	DIESEL	19046	5	26.11.2013	20	6000	23578	17578	805	14150290
100	Kerakat	DIESEL	15231	7		30	2500	23578	21078	1131	23839218
101	Kerakat	DIESEL	15232	7		12	1400	23578	22178	1131	25083318

Anneure 2.3-Statement showing avoidable expenditure due to non-withdrawal of uneconomic/ experimental stoppages (Para 2.3)											
Sl. No.	Station	Train details			Start date of stoppage	Average Earnings per train per day		Stoppage cost of Diesel/ Electric (Amount in ₹)	Avoidable expenditure per day (Amount in ₹)	Approximate days run (from 24.02.2016 to 31.03.2019	Total avoidable expenditure for more than three years (24.02.2016 to 31.03.2019) (Amount in ₹)
		Power Type(D/E)	Train number	Running frequency		Passenger (No.)	Earnings (Amount in ₹)				
102	Ballia	DIESEL	19052	1	17.02.2014	40	2000	23578	21578	161	3474058
103	Deoria sadar	ELECTRIC	12491	1	01.03.2014	35	8640	12717	4077	161	656397
104	Deoria Sadar	ELECTRIC	12492	1	01.03.2014	26	2480	12717	10237	161	1648157
105	Deoria Sadar	ELECTRIC	12408	1	26.02.2014	22	4840	12717	7877	161	1268197
106	Mohammadabad (MMA)	DIESEL	13137	1	11.03.2014	5	150	23578	23428	161	3771908
107	Mohammadabad (MMA)	DIESEL	13138	1	11.03.2014	60	10000	23578	13578	161	2186058
108	Mohammadabad (MMA)	DIESEL	15025	2	11.03.2014	70	12000	23578	11578	322	3728116
109	Mohammadabad (MMA)	DIESEL	15026	2	11.03.2014	5	150	23578	23428	322	7543816
110	Yusufpur	DIESEL	15053	7	05.03.2015	100	13500	23578	10078	1131	11398218
111	Yusufpur	DIESEL	15054	7	05.03.2015	50	3900	23578	19678	1131	22255818
112	Nunkhar	DIESEL	15007	7	17.03.2016	50	2800	23578	20778	1113	23125914
113	Nunkhar	DIESEL	15008	7	17.03.2016	10	300	23578	23278	1113	25908414

Anneure 2.3-Statement showing avoidable expenditure due to non-withdrawal of uneconomic/ experimental stoppages (Para 2.3)											
Sl. No.	Station	Train details			Start date of stoppage	Average Earnings per train per day		Stoppage cost of Diesel/ Electric (Amount in ₹)	Avoidable expenditure per day (Amount in ₹)	Approximate days run (from 24.02.2016 to 31.03.2019	Total avoidable expenditure for more than three years (24.02.2016 to 31.03.2019) (Amount in ₹)
		Power Type(D/E)	Train number	Running frequency		Passenger (No.)	Earnings (Amount in ₹)				
114	Siswa Bazar	DIESEL	19269	2	17.03.2016	18	775	23578	22803	318	7251354
115	Siswa Bazar	DIESEL	19270	2	17.03.2016	30	6325	23578	17253	318	5486454
116	Dullahpur	DIESEL	18201	2	30.06.2016	7	450	23578	23128	286	6614608
117	Dullahpur	DIESEL	18202	2	30.06.2016	38	3200	23578	20378	286	5828108
118	Sadat	DIESEL	15017	7	30.06.2016	30	1340	23578	22238	1001	22260238
119	Sadat	DIESEL	15018	7	30.06.2016	120	8100	23578	15478	1001	15493478
120	Nandganj	DIESEL	14007	2	30.06.2016	3	200	23578	23378	286	6686108
121	Nandganj	DIESEL	14008	2	30.06.2016	4	420	23578	23158	286	6623188
122	Gazipur City	DIESEL	19051	1	04.07.2016	20	540	23578	23038	142	3271396
123	Gazipur City	DIESEL	19052	1	04.07.2016	50	20000	23578	3578	142	508076
124	Karimuddinpur	DIESEL	15160	7	15.09.2016	25	1350	23578	22228	931	20694268
125	Revati	DIESEL	15159	7	08.10.2016	80	11000	23578	12578	903	11357934
126	Revati	DIESEL	15160	7	08.10.2016	20	1200	23578	22378	903	20207334
127	Dobhi	ELECTRIC	22419	4	07.06.2017	35	5000	12717	7717	376	2901592
128	Dobhi	ELECTRIC	22420	4	07.06.2017	10	700	12717	12017	376	4518392

Anneure 2.3-Statement showing avoidable expenditure due to non-withdrawal of uneconomic/ experimental stoppages (Para 2.3)											
Sl. No.	Station	Train details			Start date of stoppage	Average Earnings per train per day		Stoppage cost of Diesel/ Electric (Amount in ₹)	Avoidable expenditure per day (Amount in ₹)	Approximate days run (from 24.02.2016 to 31.03.2019	Total avoidable expenditure for more than three years (24.02.2016 to 31.03.2019) (Amount in ₹)
		Power Type(D/E)	Train number	Running frequency		Passenger (No.)	Earnings (Amount in ₹)				
129	Siswa Bazar	ELECTRIC	12537	3	07.06.2017	15	1250	12717	11467	282	3233694
130	Siswa Bazar	ELECTRIC	12538	3	07.06.2017	12	700	12717	12017	282	3388794
131	Bilaspur Road	DIESEL	15036	7	28.02.2009	113	8084	23578	15494	1131	17523714
132	Fatehgarh	DIESEL	22531	3		69	4140	23578	19438	483	9388554
133	Fatehgarh	DIESEL	22532	3		85	6375	23578	17203	483	8309049
134	Barrajpur	DIESEL	15037	7	06.03.2014	99	5000	23578	18578	1131	21011718
135	Barrajpur	DIESEL	15038	7	06.03.2014	80	2500	23578	21078	1131	23839218
136	Rudain	DIESEL	15038	7	15.04.2011	32	1440	23578	22138	1131	25038078
137	Rudain	DIESEL	15037	7	15.04.2011	46	2990	23578	20588	1131	23285028
138	Daryaoganj	DIESEL	15041	7	17.03.2016	48	5440	23578	18138	1113	20187594
139	Daryaoganj	DIESEL	15042	7	17.03.2016	6	210	23578	23368	1113	26008584
140	Bajpur	DIESEL	14615	7	20.11.2013	135	22000	23578	1578	1131	1784718
141	Roshanpur	DIESEL	15034	3		30	2325	23578	21253	483	10265199
Total											**2013959075**

Annexure--3.1 --Sample Selection-PVC Cases Reviewed (Para 3.1.4)						
Sl.No.	**Railway/Unit**	**No. of cases checked for compliance of provisions of GCC etc. on PVC**	**No. of cases checked for compliance of GFR provisions**	**Below ₹ 50 lakh**	**Below ₹ 5 crore**	**Total selected contracts**
1	**CR**	58	20	31	23	132
2	**NCR**	50	10	8	12	80
3	**ECR**	50	1	10	10	71
4	**NFR**	50	5	0	0	55
5	**NWR**	50	11	10	3	74
6	**SECR**	50	2	10	7	69
7	**SR**	52	9	8	7	76
8	**SWR**	50	10	10	10	80
9	**WR**	50	10	10	10	80
10	**ECOR**	50	10	10	2	72
11	**ER**	50	9	10	8	77
12	**METRO Rly.**	36	8	3	5	52
13	**NER**	50	10	12	1	73
14	**NR**	50	12	10	9	81
15	**WCR**	50	10	10	5	75
16	**SCR**	50	7	11	0	68
17	**SER**	50	9	9	4	72
18	**CLW**	16	2	16	0	34
19	**DLW**	24	9	10	7	50
	Total	886	**164**	**198**	**123**	**1371**

Annexure-4.1-Facility of Mechanised cleaning and adequacy of washable aprons-(Para 4.1.7.1)																
Name of Zone/ Division	Name of station	Category of station	Total no. of passengers dealt per day	Washable apron					Performance of Cleaning Contract					Whether cleaning at station were monitored by zonal/ divisional/ station level?	Remarks.
				Total no. of PF	No. of PF provided with washable aprons	Cleaning by departmentally or by outside agency?	Whether mechanised means of cleaning is adopted? (Yes/No)	Whether recycled water is being used? (Yes/No)	Whether assessment/ work evaluation of quality of cleanliness has been exist? (Yes/No)	Whether regular maintenance of "Daily Score Card" is being maintained? (Yes/No)	Whether score provided for cleanliness matches the actual quality of cleanliness? (Yes/No)	Provision for penalty in case of unsatis-factory cleanliness.	Action taken in case of unsatis-factory clean-liness		
ECR/ MGS	GAYA	A1/NSG2	23190	10	2	Outside Agency	Yes$	No	Yes	Yes	No	Yes	Penalty imposed as per agreement clause	Divisional/ Zonal level	Nil
ER/ SDAH	SDAH	A1/NSG1	130103	21	19	Outside Agency	Yes	No.	Yes	Yes	Yes	Yes	Penalty imposed as per agreement clause	Yes	Nil
NER/ LJN	GKP	A1/NSG2	150000	10	10	Outside Agency	Yes$	No	Yes	Yes	Yes	Yes	Penalty imposed as per agreement clause	Only Station Level	Rs. 1.21 crore had been deducted in three years on unsatifactory cleanliness
CR/ CSTM	DR	A1/SG1	850000	8	2	Outside Agency	Yes	No	Yes	Yes	Yes	Yes	Penalty imposed as per agreement clause	Only Station Level	Nil
NCR/ AGRA	AGC	A1/NSG2	15898	6	5	Departmentally & Outside Agency	Yes	No	Yes	No	NAP	Yes	Penalty imposed as per agreement clause	Divisional/ Station level	Nil
NR/ FZR	ASR	A1/NSG3	42821	8	6	Outside Agency	Yes	No	Yes	No	NAP*	Yes	Penalty imposed as per agreement clause	Yes	Nil

Annexure-4.1-Facility of Mechanised cleaning and adequacy of washable aprons-(Para 4.1.7.1)																
Name of Zone/ Division	Name of station	Category of station	Total no. of passengers dealt per day	Washable apron					Performance of Cleaning Contract					Whether cleaning at station were monitored by zonal/ divisional/ station level?	Remarks
				Total no. of PF	No. of PF provided with washable aprons	Cleaning by departmentally or by outside agency?	Whether mechanised means of cleaning is adopted? (Yes/No)	Whether recycled water is being used? (Yes/No)	Whether assessment/ work evaluation of quality of cleanliness has been exist? (Yes/No)	Whether regular maintenance of "Daily Score Card" is being maintained? (Yes/No)	Whether score provided for cleanliness matches the actual quality of cleanliness? (Yes/No)	Provision for penalty in case of unsatis-factory cleanliness.	Action taken in case of unsatis-factory clean-liness		
NR/ DLI-Dn	NZM	A1/NSG2	42302	7	5	Outside Agency	Yes	No	Yes	No	NAP	Yes	Penalty imposed as per agreement clause	Yes	Nil
WR/ BCT	DDR	A1/SG1	1300000	7	2	Outside Agency	Yes	No	Yes	Yes	Yes	Yes	Penalty imposed as per agreement clause	Yes	Mecha-nised clean-ing carried out from January 2019
* No Score card is maintained for cleaning work of station permises. This is required for train services only.															
$ Machanised & Manual															
NAP: Not applicable															

Annexure--4.2 --Cleaning Contract at Selected Station-(Para 4.1.7.1)													
Name of Zone/ Division	**Name of station**	**whether work awarded for mechanized cleaning or manually**	**Date of awarding for such cleaning contract**	**Name of machine utilized for cleaning**	**No. of machine should be available as per agreement**	**No. of machine actually available**	**Shortage**	**Name of material as per agreement**	**Material should be available**	**Material actually kept in stock**	**Shortage/ Excess**	**Frequency of cleaning at each PF shift-wise**	**Remarks**
ECR/ MGS	GAYA	Mechanised & Manual	22-06-2018	Rider Scrubber cum dryer	4	4	NIL	Lime Power	40 Kg/day	60 kg	(+) 20 Kg	3 Times	Nil
				High Pressure Cold Water Jet Machine	1	1	NIL	Disinfecting Fluid	01 litre/day	08 litre	(+) 7 litre		
				Vacuum Cleaner (wet & dry)	1	1	NIL	Bleeching Power	10 kg/day	20 kg	(+) 10 Kg		
				Marut Spray Machine	1	0	1	Acid	200 g/day	2200 g	(+) 2000 g		
				Mini Floor Cleaner Machine	3	3	NIL	Nepthaline Balls	2 kg/ month	NIL	(-) 2 Kg		
								Novan	1 litre/ month	NIL	(-) 1 Litre		
								Vim Power	0.5 kg/day	7.0 kg	(+) 6.5 Kg		
								Mosquitto Repellent	40 ml/day	460 ml	(+) 420 ml		
								Odonil	5 nos. /month	NIL	(-) 5 nos		
								Room Freshner	06 nos./ month	NIL	(-) 06 nos		
								Pine oil	01 litre/ day	02 Litre	(+) 1 litre		

Annexure--4.2 --Cleaning Contract at Selected Station-(Para 4.1.7.1)													
Name of Zone/ Division	**Name of station**	**whether work awarded for mechanized cleaning or manually**	**Date of awarding for such cleaning contract**	**Name of machine utilized for cleaning**	**No. of machine should be available as per agreement**	**No. of machine actually available**	**Shortage**	**Name of material as per agreement**	**Material should be available**	**Material actually kept in stock**	**Shortage/ Excess**	**Frequency of cleaning at each PF shift-wise**	**Remarks**
ER/ SDAH	SDAH	Mechanized	12-09-2017	H.P.Diesel jet,	5	9	NIL	Broom coco	Quantity not mentioned in the Agreement	Yes	Nil	dry 4 times & wet - 2 times	Nil
				Ride on sweeper Vacuum cleaner,	1		NIL	D. liquid					
				Ride on Scr &Drier	2		NIL	Acid					
				Mini Scrubber & drier	1		NIL	Liquid soap					
								Wheel barrow					
								Scrubbing Brush					
								Napt. Ball					
								Duster cotton,					
NER/ LJN	GKP	Semi mechanised	A new contract was in force from 13.08.2019	Jet cleaning machine	7	7	Nil	Bleaching	1200Kg	1200 Kg	Nil	Continuous	Nil

Annexure--4.2 --Cleaning Contract at Selected Station-(Para 4.1.7.1)													
Name of Zone/ Division	**Name of station**	**whether work awarded for mechanized cleaning or manually**	**Date of awarding for such cleaning contract**	**Name of machine utilized for cleaning**	**No. of machine should be available as per agreement**	**No. of machine actually available**	**Shortage**	**Name of material as per agreement**	**Material should be available**	**Material actually kept in stock**	**Shortage/ Excess**	**Frequency of cleaning at each PF shift-wise**	**Remarks**
NER/ LJN	GKP	Semi mechanised	A new contract was in force from 13.08.2019	Ride on scrubber drier	7	7	Nil	perfumed floor liquid	250Ltr	250Ltr	Nil	Continuous	
				Walk behind scrubber	2	2	Nil	Acid(harpic etc)	100	100			
								Lime	3000Kg	3000Kg			
				wet and dry vacuum cleaner	3	3	Nil	Odonil	50 pack	50 pack			
								Napthaline	8 Kg	8 Kg			
				Hand held scrubbing machine for vertical surface	2	2	Nil	Biodegradable bags	800Kg	800Kg			
								colin	45 bottle	45 bottle			
				Automatic escalator cleaner	2	2	Nil	Oil of citronella	5Litre	5Litre			
								Room freshner	10 bottle	10 bottle			
				Manual sweaper	10	10	Nil	caustic soda	50 Kg	50 Kg			
								Detergent	60Kg	60Kg			

Annexure--4.2 --Cleaning Contract at Selected Station-(Para 4.1.7.1)													
Name of Zone/ Division	**Name of station**	**whether work awarded for mechanized cleaning or manually**	**Date of awarding for such cleaning contract**	**Name of machine utilized for cleaning**	**No. of machine should be available as per agreement**	**No. of machine actually available**	**Shortage**	**Name of material as per agreement**	**Material should be available**	**Material actually kept in stock**	**Shortage/ Excess**	**Frequency of cleaning at each PF shift-wise**	**Remarks**
CR/ CSTM	DR	Mechanized	04-10-2018	High pressere water jet cleaner (Nos-02)	2	2		Bucket	All the material available as per contract agreement	Material actually kept in stock	NIL	3 Shifts continuous basis	New contract awarded from 4-10-2018
				Wet and dry vacuum cleaner	3	3		Long brooms,					
				Manual mechanical sweeper	4	4		Brushes					
				Single disc floor scrubber machine	2	2		Face mask					
				Push behind auto scrubber drier (Battery operated)	6	6		Hand gloves					
				Arial cleaning machine	1	0	1	Florescent jacket					
				Mobile high pressure jet machine	2	2		gumboots					
				Steam cleaner	1	1		Disinfectant					

Annexure--4.2 --Cleaning Contract at Selected Station-(Para 4.1.7.1)													
Name of Zone/ Division	**Name of station**	**whether work awarded for mechanized cleaning or manually**	**Date of awarding for such cleaning contract**	**Name of machine utilized for cleaning**	**No. of machine should be available as per agreement**	**No. of machine actually available**	**Shortage**	**Name of material as per agreement**	**Material should be available**	**Material actually kept in stock**	**Shortage/ Excess**	**Frequency of cleaning at each PF shift-wise**	**Remarks**
CR/ CSTM	DR	Mechanized	04-10-2018	Mini Scrubber	2	2		Bleaching powder					
				Battery Operated stand on scrubber drier	1	1		Carbo phemol power,					
								Fragrant lemon base floor cleaner					
								Naphthalene ball					
								sodium liquid					
								Biodegrable HDPE small (packd)					
								Biodegrable HDPE big					
								Biodegrable HDPE Jumbo					
NCR/ AGRA	AGC	Mechanized Cleaning	11-12-2017	1. Ride on	16	16	Nil	ISI Mark	Yes	As per agreement	Nil	3 Times	
				Single disc									
				High Jet Pressure									
				Walk Behind Wet & Dry									
				vaccum Cleaner									

Annexure--4.2 --Cleaning Contract at Selected Station-(Para 4.1.7.1)													
Name of Zone/ Division	**Name of station**	**whether work awarded for mechanized cleaning or manually**	**Date of awarding for such cleaning contract**	**Name of machine utilized for cleaning**	**No. of machine should be available as per agreement**	**No. of machine actually available**	**Shortage**	**Name of material as per agreement**	**Material should be available**	**Material actually kept in stock**	**Shortage/ Excess**	**Frequency of cleaning at each PF shift-wise**	**Remarks**
NR/ FZR	ASR	Mechanized cleaning	12.03.2016 Agreement no. MC/37051/CC/ASR dt.19.02.2016 , Date of start of work 12.06.2016 further extended upto 04.07.2019.	Jet Machine= 6, Walk behind scrrubber= 1, Ride on Scrubber= 1, Ride on sweeper= 1 Total = 9	9	9	Nil	Broom Goa- 50kg, Polythene bag =50Kg , Lime powder=2250 kg,Bio floor =60ltrs, Sponge cloths=50 no ,Hussain cloth (pocha)=30mtrs, Room fresher= 2 pc,Gum boots= 79 nos, Face masks =790 nos, Soap liquid = 150 ltrs, Acid HCL =80 ltrs, Green bamboos=8pcs,Colin= 10 ltrs, Hand glove= 79 nos, Luminous jacket=158 nos per year,Uniforms = 158 PA, Water proof aprons=21 nos PA.	Broom Goa- 50kg, Polythene bag =50Kg , Lime powder=2250 kg,Bio floor =60ltrs, Sponge cloths=50 no ,Hussain cloth (pocha)=30mtrs, Room fresher= 2 pc,Gum boots= 79 nos, Face masks =790 nos, Soap liquid = 150 ltrs, Acid HCL =80 ltrs, Green bamboos=8pcs,Colin= 10 ltrs, Hand glove= 79 nos, Luminous jacket=158 nos per year,Uniforms = 158 PA, Water proof aprons=21 nos PA.	As per stock ledger :- Broom Goa- 50kg, Polythene bag =50Kg , Lime powder=2250 kg,Bio floor =60ltrs, Sponge cloths=50 no ,Hussain cloth (pocha)=30mtrs , Room fresher= 2 pc,Gum boots= 79 nos, Face masks =790 nos, Soap liquid = 150 ltrs, Acid HCL =80 ltrs, Green bamboos=8pcs ,Colin= 10 ltrs, Hand glove= 79 nos. Issued to workmen :- Luminous jacket=158 nos per year,Uniforms = 158 PA, Water proof aprons=21 nos PA.	NIL	Every two Hours	No remarks

Annexure--4.2 --Cleaning Contract at Selected Station-(Para 4.1.7.1)													
Name of Zone/ Division	**Name of station**	**whether work awarded for mechanized cleaning or manually**	**Date of awarding for such cleaning contract**	**Name of machine utilized for cleaning**	**No. of machine should be available as per agreement**	**No. of machine actually available**	**Shortage**	**Name of material as per agreement**	**Material should be available**	**Material actually kept in stock**	**Shortage/ Excess**	**Frequency of cleaning at each PF shift-wise**	**Remarks**
NR /DLI-Dn	NZM	Mechanized Cleaning	20-11-2018	Floor scrubber cum drier machine (Roots make)	01 Nos.	01 Nos.	Nil	Phenyl or equivalent	150 PM	150 PM	Nil	3 Times	Nil
NR/ DLI-Dn	NZM	Mechanized Cleaning	20-11-2018	Walk behind Floor Scrubber cum drier machine (Roots make)	02 Nos	02 Nos.	Nil	Vim Powder or equilenent	60 PM	60 PM	Nil	3 Times	
				Wet and dry vacuum cleaner 80 Ltr.	02 Nos.	02 Nos.	Nil	Bleaching Powder (In Kgs)	750 PM	750 PM	Nil		
				Single disk scrubber electric operated (Roots make)	02 Nos	02 Nos.	Nil	Line powder (in Kg)	3000 PM	3000 PM	Nil		
				Steam cleaning machine	02 Nos.	02 Nos.	Nil	Room Fresheners (R5)	15 PM	15 PM	Nil		
				Hilgh Pressure jet machine with 200 Ltr. tank	05 Nos.	05 Nos.	Nil	Naphthalene Balls (In Kgs)	8 kg.	8 kg.	Nil		
				Battery operated vehicle	02 Nos.	02 Nos.	Nil	Glass cleaner	15 PM	15 PM	Nil		
				Knepsack sprayer 10 Ltr.	01 Nos.	01 Nos.	Nil	Brooms	225 PM	225 PM	Nil		
				Fogging machine	01 Nos.	01 Nos.	Nil	Wiper	30 PM	30 PM	Nil		
								Gum boots (once in year)	163 per year	163 PY	Nil		
								Hand gloves & Mast (floor in a month)	652 PM	652 PM	Nil		

Annexure--4.2 --Cleaning Contract at Selected Station-(Para 4.1.7.1)													
Name of Zone/ Division	**Name of station**	**whether work awarded for mechanized cleaning or manually**	**Date of awarding for such cleaning contract**	**Name of machine utilized for cleaning**	**No. of machine should be available as per agreement**	**No. of machine actually available**	**Shortage**	**Name of material as per agreement**	**Material should be available**	**Material actually kept in stock**	**Shortage/ Excess**	**Frequency of cleaning at each PF shift-wise**	**Remarks**
WR/ BCT	DDR	Mechanized and manual (2018-19)	18-12-2018	1.Vacuum Cleaner 2. Flipper Machine 3. Hand Scrubber 4. Steam Cleaner 5. Dry Back pack Vacuum Cleaner 6. Compact Scrubber drier	11	11	Nil	Floor cleaning concentrate, Toilet Floor Cleaner, Pest Control, Oil and Grese remover, Hand Wash, Toilet Paper, Naphthalee Balls etc.	Yes	Yes	Nil	2 times	Mechanized cleaning started from January 2019

Annexure-4.3 -Adequacy of Toilets & Urinals at Stations (For Passengers)-(Para 4.1.7.2)														
Name of Zone/ Division	Name of station	Location	Category (A1/A)	No. of toilets and Urinals to be provided as per the scale laid down		No. of toilets and Urinals actualy available		No. of Pay and Use toilets and urinals (Out of Col. 7 & 8)		No. of toilets and urinals 'Closed' or "Out of use'		whether covered dustbin were provided	Frequency of cleaning of toilet	Remarks
				Men	Women	Men	Women	Men	Women	Men	Women			
ECR/ MGS	GAYA	Station Building including circulating area.	A1/NSG2	U-8, T-8	U-4, T-4	U-14 & T-4	U-0 & T-3	U-15 & T-20	U-0 & T-16	0	0	NIL**	Three times/ day	At Pay & Use Toilet at PF -1: 03 Flex Difective At Pay & Use Toilet at PF -2 & 3: Some time safety tank chocked up At Pay & Use Toilet at PF -4 & 5: Some time safety tank chocked up At Pay & Use Toilet: 05 flex diffective and 01 door defective
ER/SDAH	SDAH	SDAH	A1/NSG1	U-8, T-8	U-4, T-4	U-15 & T-59	U-14 & T-26	U-15 & T-59	U-14 & T-26	0	0	No	3 times daily	In addition, for Divyangjan 03 Nos. Toilet available. (P.F. - 1A, 5, 8)
NER/LJN	GKP	Station Building including circulating area.	A1/NSG2	U-8, T-8	U-4, T-4	U-21 T-29	U-0 & T-25	U-37 & T-38*	U-0, T-24	12	8	Yes	two times in each shift or as per need	* including PH (4)
CR/CSTM	DR	Station building (sub-urban)	A1/SG1	U-3, T-3	U-1, T-1	U-31, T-13	U-4, T-11	U-28, T-08	U-4, T-07	0	0	Yes	Four times in a day	# including PH (01)
		Station Building (non-sub-urban)		U-8, T-8	U-4, T-4	U-4, T-3#	U-0, T-1	U-4, T-2	U-0, T-1	0	0	Yes	Continuous basis	One toilet for handicap person
NCR/AGRA	AGC	AGC Station	A1/NSG2	U-8, T-8	U-4, T-4	U-0, T-28	U-0, T-13	U-0, T-28	U-0, T-13	0	0	Yes	3 times/day	

Annexure-4.3 -Adequacy of Toilets & Urinals at Stations (For Passengers)-(Para 4.1.7.2)														
Name of Zone/ Division	**Name of station**	**Location**	**Category (A1/A)**	**No. of toilets and Urinals to be provided as per the scale laid down**		**No. of toilets and Urinals actualy available**		**No. of Pay and Use toilets and urinals (Out of Col. 7 & 8)**		**No. of toilets and urinals 'Closed' or "Out of use'**		**whether covered dustbin were provided**	**Frequency of cleaning of toilet**	**Remarks**
				Men	**Women**	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**			
NR/FZR	ASR	511.09 on SNL-ATT Sec.	A1/NSG3	U-8, T-8	U-4, T-4	U- 34 , T-26	U-0, T-19	U- 4 , T-15	U-0, T-13	12	4	Yes	24 Hrs.	Col. 11&12:- These toilets provided by IRCTC are closed and is proposed to be shifted due to foul smell
NR/DLI-Dn	NZM	DLI-NDLS - Palwal Section 10.39 kms	A1/NSG2	U-8, T-8	U-4, T-4	U-51, T-27	U-0, T-27	U-30, T-7	U-0, T-8	**0**	**0**	Dustbins having Plastic body were covered lid and Steel body dustbins were uncovered.	At the interval of 2 hrs.	NAP
WR/BCT	DDR	Station Building including circulating area.	A1/SG1	U-3, T-3	U-1, T-1	U-27, T-12	U-0, T-10	U-13, T-12	U-0, T-10	0	0	Yes	Twice / Thrice a day	Pay & Use toilets

U-Urinal; T-Toilet

		Urinal		Toilet			
		Men	Women	Men	Women		# including one toilet for Handicaped

Annexure-4.3 -Adequacy of Toilets & Urinals at Stations (For Passengers)-(Para 4.1.7.2)														
Name of Zone/ Division	Name of station	Location	Category (A1/A)	No. of toilets and Urinals to be provided as per the scale laid down		No. of toilets and Urinals actualy available		No. of Pay and Use toilets and urinals (Out of Col. 7 & 8)		No. of toilets and urinals 'Closed' or "Out of use'		whether covered dustbin were provided	Frequency of cleaning of toilet	Remarks
				Men	Women	Men	Women	Men	Women	Men	Women			
* Parcel Office		2	0	0	0		## Not a single water tap is available at all urinal							
Waiting room(1st class)		2	0	04#	3									
Dormatry AC		1	0	3	0									
Dormatry Non-AC		2	0	2	0									
Retiring Room (AC)		0	0	2	0									
Retiring Room (Non AC)		0	0	5	0									

** Passenger was not utilising the covered dustbin properly. They pick and litering over covered dustbin. So that cover of dustbin had to be removed. However, covered dustbin were provided at Pay & Use Toilet. The freqency not mentioned in the contract however it is maintained/cleaned all the times at Pay and Use Toilet.
NAP: Not applicable

Annexure-4.4 -Adequacy and quality of drinking water at Stations for Passenger.(Para 4.1.7.3)										
Name of Zone/ Division	**Name of station**	**Category of station**	**Total no. of platform**	**Total no. of drinking water taps should be available as per norms**	**Total no. of drinking water taps available per platform**	**Total no. of Water Cooler should be available at PF as per norms**	**Total no. of Water cooler available on platform**	**Whether water is treated by Railway? (Yes/No)**	**Whether maintainance of water booths in good and hygienic condition is being done regularly? (Yes/No)**	**Remarks (specify) whether prescribed norms is adequate)**
ECR/ MGS	GAYA	A1/NSG2	10	20/PF	PF-1&1A-45	02/PF	1	No	Yes	Nil
					PF-1B-Nil		0			
					PF-2&3-26 PF-4&5-22		2			
					PF-6&7-20		2			
ER/SDAH	SDAH	A1/NSG1	21	20/PF	PF-1A-20	02/PF	0	Yes	Yes	Yes
					PF-1&2-20					
					PF-3&4-20					
					PF-4& 4A -20, PF- 4A (Green)- 20					
					PF-5-20, PF-6&7-20					
					PF-8&9-21, PF-9C-20					
ER/SDAH	SDAH	A1/NSG1	21	20/PF	PF-9A&9B-20	02/PF	0	Yes	Yes	Yes
					PF-10&10A-20					
					PF-10 &11-20					
					PF-12&13-20					
					PF-14&14A-20					

Annexure-4.4 -Adequacy and quality of drinking water at Stations for Passenger.(Para 4.1.7.3)										
Name of Zone/ Division	**Name of station**	**Category of station**	**Total no. of platform**	**Total no. of drinking water taps should be available as per norms**	**Total no. of drinking water taps available per platform**	**Total no. of Water Cooler should be available at PF as per norms**	**Total no. of Water cooler available on platform**	**Whether water is treated by Railway? (Yes/No)**	**Whether maintainance of water booths in good and hygienic condition is being done regularly? (Yes/No)**	**Remarks (specify) whether prescribed norms is adequate)**
NER/ LJN	GKP	A1/NSG2	10	20/PF	PF-1,2&2A-71	02/PF	5	Yes	Yes	Nil
					PF-3&4-26		3			
					PF-5&6-37		3			
					PF-7&8-28		1			
					PF-9-28		2			
CR/CSTM	DR	A1/SG1	6	6/PF	PF-1&2-2	02/PF	0	No	Yes	#
					PF-3&4-4		1			
					PF-5-4		2			
					PF-6-3		1			
		A1/NSG1	2	20/PF	PF-7&8-20	02/PF	3			
NCR/AGRA	AGC	A1/NSG2	6	20/PF	PF-1&6-52	02/PF	2	Yes	Yes	Nil
					PF-2&3-71		6			
					PF-4&5-52		4			
NR/FZR	ASR	A1/NSG3	8	20/PF	PF-1A&1-36	02/PF	3	Yes	Yes	Nil
					PF-2&3-24		3			
					PF-4&5-24		1			
					PF-6&7-32		0			
NR/DLI-Dn	NZM	A1/NSG2	7	20/PF	PF-1-26	02/PF	2	Yes	Yes	Nil
					PF-2&3-33		4			
					PF-4&5-29		5			
					PF-6&7-39		2			
WR/BCT	DDR	A1/SG1	7	6/PF	PF-1- 0	02/PF	0	Yes	Yes	Nil
					PF-2&3-0		0			
					PF-4-0		0			
					PF-5&6-19		3			
					PF-7-8		2			
#As per norm at platform No 1 & 2 ,3&4,5& 6 six drinking water taps should have been provided. However two to four numbers of less drinking water tabs have been provided. Also at PF no 1&2 two water coolers should have been provided. However water cooler has not been provided .Further, only one water cooler has been provied at on PF no 3&4 (Combined) and PF no6 instead of two.										
(*) As per Norms of minimum essential amentities (Annexurre III A) as prescribed by RB vide letter dated 9/4/2018										

Annexure-4.5 -Monitoring the quality of drinking water (Para 4.1.7.3)																
Name of Zone/ Division	Name of station	Category of station	No. of water storage tanks available	Year	Water tank cleaning		Total no. of sample to be tested in a year			Actual sample testing done			Shortage in sample testing			Remarks
					No. of cleaning required as per norms/ agreement	Actual no. of cleaning done	Residual chlorine	Bacteria-logical analysis	Chemical analysis	Residual chlorine	Bacteria-logical analysis	Chemical analysis	Residual chlorine	Bacteria-logical analysis	Chemical analysis	
ECR/ MGS	GAYA	A1NSG2	1	2016-17	2 times/ Yearly	2 times/ Yearly*	365	12	2	365	52	0	0	0	2	Nil
				2017-18	2 times/ Yearly	2 times/ Yearly*	365	12	2	365	52	0	0	0	2	
				2018-19	2 times/ Yearly	2 times/ Yearly*	365	12	2	365	52	1#	0	0	1	
ER/SDAH	SDAH	A1/NSG1	56	2016-17	4 times/ Yearly	4 times/ Yearly	365	12	2	1095	264	1	0	0	1	Nil
				2017-18	4 times/ Yearly	4 times/ Yearly	365	12	2	1095	264	2	0	0	0	Nil
				2018-19	4 times/ Yearly	4 times/ Yearly	365	12	2	1095	280	2	0	0	0	Nil

Annexure-4.5 -Monitoring the quality of drinking water (Para 4.1.7.3)																
Name of Zone/ Division	Name of station	Category of station	No. of water storage tanks available	Year	Water tank cleaning		Total no. of sample to be tested in a year			Actual sample testing done			Shortage in sample testing			Remarks
					No. of cleaning required as per norms/ agreement	Actual no. of cleaning done	Residual chlorine	Bacteria-logical analysis	Chemical analysis	Residual chlorine	Bacteria-logical analysis	Chemical analysis	Residual chlorine	Bacteria-logical analysis	Chemical analysis	
NER/ LJN	GKP	A1NSG2	2	2016-17	2 times/ Yearly	2 times/ Yearly	365	12	2	3870	33	9	0	0	1	Nil
				2017-18	2 times/ Yearly	2 times/ Yearly	365	12	2	3304	33	9	0	0	0	
			4	2018-19	2 times/ Yearly	2 times/ Yearly	365	12	2	700	23	3	0	0	0	
CR/CSTM	DR	A1/SG1	52	2016-17	2 times/ Yearly	2 times/ Yearly	365	12	2	232	44	0	133	0	2	##
				2017-18	2 times/ Yearly	2 times/ Yearly	365	12	2	254	50	0	111	0	2	
				2018-19	2 times/ Yearly	2 times/ Yearly	365	12	2	393	22	0	0	0	2	

Annexure-4.5 -Monitoring the quality of drinking water (Para 4.1.7.3)																
Name of Zone/ Division	Name of station	Category of station	No. of water storage tanks available	Year	Water tank cleaning		Total no. of sample to be tested in a year			Actual sample testing done			Shortage in sample testing			Remarks
					No. of cleaning required as per norms/ agreement	Actual no. of cleaning done	Residual chlorine	Bacteria-logical analysis	Chemical analysis	Residual chlorine	Bacteria-logical analysis	Chemical analysis	Residual chlorine	Bacteria-logical analysis	Chemical analysis	
NCR/AGRA	AGC	A1/NSG2	3	2016-17	2 times/ Yearly	8	365	12	2	345	12	0	20	0	2	Nil
				2017-18	2 times/ Yearly	8	365	12	2	332	12	0	33	0	2	
				2018-19	2 times/ Yearly	8	365	12	2	312	12	0	53	0	2	
NR/FZR	ASR	A1/NSG3	1	2016-17	8@	8	365	12	2	634	52 (**)	0	0	0	2	Nil
				2017-18	8	8	365	12	2	609	68(**)	0	0	0	2	Nil
				2018-19	8	9	365	12	2	404	65(**)	1	0	0	1	Nil
NR/DLI-Dn	NZM	A1/NSG2	3	2016-17	2@	4	365	12	2	2190	105	At the time of creation of source	0	0	2	Nil
				2017-18	2	4	365	12	2	2182	141	Same as above.	0	0	2	Nil
				2018-19	2	8	365	12	2	2193	182	Same as above.	0	0	2	Nil
WR/BCT	DDR	C	3	2016-17	4 times/ Yearly	4	365	12	2	59	15	2	306	0	0	Nil

Annexure-4.5 -Monitoring the quality of drinking water (Para 4.1.7.3)																
Name of Zone/ Division	Name of station	Category of station	No. of water storage tanks available	Year	Water tank cleaning		Total no. of sample to be tested in a year			Actual sample testing done			Shortage in sample testing			Remarks
					No. of cleaning required as per norms/ agreement	Actual no. of cleaning done	Residual chlorine	Bacteria-logical analysis	Chemical analysis	Residual chlorine	Bacteria-logical analysis	Chemical analysis	Residual chlorine	Bacteria-logical analysis	Chemical analysis	
			3	2017-18	4 times/ Yearly	4	365	12	2	60	16	2	305	0	0	Nil
		A1/SG1	3	2018-19	4 times/ Yearly	4	365	12	2	79	25	2	286	0	0	Nil
* However, records for cleaning of water tank was not maintained but cleaning done for reference a video shown to concerned staff for cleaning of water tank done on 5th August 2019.																
# Chemical analysis done by Food Safety Officer (FSO), Mughalsarai on the basis of random selection of Gaya Station. It was not done locally in the CMS office at Gaya due to non-availability of infrastructure/resource. It would be ensure as and when such resource is available and it is to be done from outside necessary arrangement of fund is available. In FSO remarks on Chemical analysis of water was sample of boring water is normal water unsatisfactory of drinking purpose. The TDS was 1780 MG.																
## As per Norms Residual Chlorine is to be tested every day (365 Days). However, it was seen that sample testing for residual chlorine had not been carried out for 133 days and 111 days during the year 2016-17 & 2017-18 respectively. Similarly, Chemical Analysis of drinking water is required to be done twice in a year .However,it was not carried out during the year 2016-17 to 2018-19.																
(**) Twice in a month by each Health Inspector (02 HI at ASR)																
(@)Tanks used for the storage of drinking water should be rubbed and cleaned at such intervals as specified by the Divisional Engineer																

Annexure 4.6 --Waste Management at Station Premises-(Para 4.1.7.4)												
				Dustbin						Dumping Yard		
Name of Zone/ Division	Name of station	Category of station	Total no. of passengers dealt per day	Location	Total No. of dustbin should be provided as per norms	Total no. of dust bins provided	Whether dustbin placed correctly? (yes/no)	Whether separate bins are proivded for bio-degradablle and non-bio degradable waste? (Yes/No)	Whether waste collected mannualy or mechanically?	Whether centralized dumping yard was available within the station premises to avoid littering near station premises and along tracks? (Yes/No)	Whether Incinerator is available? (Yes/No)	Remarks.
ECR/ MGS	GAYA	A1/NSG2	23190	PF-1 & 1A	50 Mtr. Distance on each Platform	66	Yes	Yes	Manually	Yes*	No	Nil
				PF - 1B		0	NAP	NAP				
				PF - 2 & 3		46	Yes	Yes				
				PF - 4 & 5		32						
				PF - 6 & 7		31						
				FOB		6						
				Booking Office		4						
				Circulating Area		13						
				Retiring Room		4						
ER/SDAH	SDAH	A1/NSG1	130103	SDAH	244	160	No	No.	Manually	Yes	No	100 nos. Of Dustbin under procurement (P.O.. Dated 06.08.2019)

Annexure 4.6 --Waste Management at Station Premises-(Para 4.1.7.4)												
				Dustbin						Dumping Yard		
Name of Zone/ Division	Name of station	Category of station	Total no. of passengers dealt per day	Location	Total No. of dustbin should be provided as per norms	Total no. of dust bins provided	Whether dustbin placed correctly? (yes/no)	Whether separate bins are proivded for bio-degradablle and non-bio degradable waste? (Yes/No)	Whether waste collected mannualy or mechanically?	Whether centralized dumping yard was available within the station premises to avoid littering near station premises and along tracks? (Yes/No)	Whether Incinerator is available? (Yes/No)	Remarks.
NER/ LJN	GKP	A1/NSG2	150000	PF1/2/2A and AC Lounge Cabway1 and cabway 9	50 meter distance at each platform	70	Yes	Yes	Manually	Yes	No	Nil
				PF-3/PF-4		10						
				PF-5/ PF-6		10						
				PF-7/PF-8		10						
				PF-9		10						
				circulating area		10						
				Booking office		2						
				Retiring room		8						
				other places		10						

Annexure 4.6 --Waste Management at Station Premises-(Para 4.1.7.4)												
				Dustbin						Dumping Yard		
Name of Zone/ Division	Name of station	Category of station	Total no. of passengers dealt per day	Location	Total No. of dustbin should be provided as per norms	Total no. of dust bins provided	Whether dustbin placed correctly? (yes/no)	Whether separate bins are proivded for bio-degradablle and non-bio degradable waste? (Yes/No)	Whether waste collected mannualy or mechanically?	Whether centralized dumping yard was available within the station premises to avoid littering near station premises and along tracks? (Yes/No)	Whether Incinerator is available? (Yes/No)	Remarks.
CR/CSTM	DR	A1/SG1	850000	PF 1 & 2	6	8	Yes	Yes	Manually	No	Sanitary pad incinerator available in ladies waiting room	Seperate bins are provided for bio-degredable and non-biodegredable waste with effect from 29-7-2019
				PF 3 & 4	10	10						
				PF 5	13	22						
				PF 6	13	22						
				PF 7 & 8	10	16						
				FOB		16						
				Main Entrance		2						
				Terminus entrance		2						
NCR/AGRA	AGC	A1/NSG2	15898	PF 1 & 6	50 meter Distance on each Platform	49	Yes	No	Manually	No	No	Nil
				PF-2		18						
				PF-3		19						
				PF-4		21						
				PF-5		17						

Annexure 4.6 --Waste Management at Station Premises-(Para 4.1.7.4)												
				Dustbin						Dumping Yard		
Name of Zone/ Division	**Name of station**	**Category of station**	**Total no. of passengers dealt per day**	**Location**	**Total No. of dustbin should be provided as per norms**	**Total no. of dust bins provided**	**Whether dustbin placed correctly? (yes/no)**	**Whether separate bins are proivded for bio-degradablle and non-bio degradable waste? (Yes/No)**	**Whether waste collected mannualy or mechanically?**	**Whether centralized dumping yard was available within the station premises to avoid littering near station premises and along tracks? (Yes/No)**	**Whether Incinerator is available? (Yes/No)**	**Remarks.**
NR/FZR	ASR	A1/NSG3	42481	PF No. 1 & 1/A	12 pair	19 pair	Yes	Yes	Manually	No	No	Nil
				PF No. 2/3	10 pair	10 pair						
				PF No. 4/5	10 pair	10 pair						
				PF No. 6/7	Under development		NAP	NAP				
				Waiting Hall	1	1 Pair	Yes	Yes				
NR/DLI	NZM	A1/NSG2	42302	PF No. 1	11	15	Yes	Yes	Manually	Yes	No	Nil
				PF No. 2/3	12	15	Yes	No				
				PF No. 4/5	12	15						
				PF No. 6/7	11	20						
				Circulating area, Bhogal	4	4		Yes				
				Circulating area SSK	2	2		**No**				
				Waiting room	4	7		Yes				

Annexure 4.6 --Waste Management at Station Premises-(Para 4.1.7.4)												
				Dustbin						Dumping Yard		
Name of Zone/ Division	**Name of station**	**Category of station**	**Total no. of passengers dealt per day**	**Location**	**Total No. of dustbin should be provided as per norms**	**Total no. of dust bins provided**	**Whether dustbin placed correctly? (yes/no)**	**Whether separate bins are proivded for bio-degradablle and non-bio degradable waste? (Yes/No)**	**Whether waste collected mannualy or mechanically?**	**Whether centralized dumping yard was available within the station premises to avoid littering near station premises and along tracks? (Yes/No)**	**Whether Incinerator is available? (Yes/No)**	**Remarks.**
WR/BCT	DDR	A1/SG1	1300000	PF 1	6	5	No	Yes	Manaully	Yes	No	Centralised point is available outside station premises where generated waste within station premises are dumped and BMC picked up the waste for disposal.
				PF 2 & 3	8	9	Yes					
				PF 4	5	4	No					
				PF 5	18	6	No					
				PF 6		4	No					
				PF 7	12	5	No					
*01 (HWH end, end of PF No. 6 & 7) and two dumping dusting point required by CHI, Gaya.												
NAP: Not Applicable.												

Annexure-4.7-Disposal of Grabage from Station (Para 4.1.7.4)													
Name of Zone/ Division	**Name of station**	**Category of station**	**Whether the quantity of garbage generated daily has been assessed (Yes/No) If, yes qty. assess**	**Average qty of garbage disposed in a day**	**Frequency of removal of grabage in a day**	**By departmentally or outsourced**	**Method of disposal (burning, dumping in railway premises Municipal notified landfills, etc.)**	**whether clause regarding segragation of waste as Bio-degradable and non-bio-degradable exists in the contract (Yes/No)**	**Whether separate centralised dumping yard is avaialble within the station premises for collection of garbage (Yes/No)**	**If not, how the garbage is being removed from various points**	**Removal of garbage from the centralised dumping yard of the station - by outside agency/dept./ municipal authorities?**	**Is the transportation of garbage done in hygienic manner, in case of outside agency or dept.? (coverring the truck with tarpaulin)**	**Whethr rag picking contracts are available? (Yes/No)**
ECR/ MGS	GAYA	A1/NSG2	Yes (200 cft)	200 cft	2 times	Out sourced	Municiple Landfills	No	Yes*	NAP	Outside Agency	No	Yes
ER/SDAH	SDAH	A1/NSG1	Yes (8 cubic meter)	8 Cubic meter	Once daily	Out sourced	Municipal notified dumping ground by Contractor's own arrangement.	Yes	Yes	NAP	Outside agency	Yes	Yes
NER/ LJN	GKP	A1/NSG2	Yes	300cubic feet	Timing 8.00AM to 16 PM	Out sourced	Municipal notified landfills	No#	yes	NAP	Outside agency	Covering the trolly with tarpoline	
CR/CSTM	DR	A1/SG1	No	Not assessed	2 times	Out sourced	Municipal Corporation notified land fills.	Yes	No	**	No centralised dumping yard at Dadar station premises	Yes (Transportation of garbage done by BMC as per their Guidelines.	Yes
NCR/AGRA	AGC	A1/NSG2	No	1	3 times/day	Outsourced	Municipal dumping Yard	No	No	Outsourced	Not Applicable	Yes	Yes

Annexure-4.7-Disposal of Grabage from Station (Para 4.1.7.4)													
Name of Zone/ Division	**Name of station**	**Category of station**	**Whether the quantity of garbage generated daily has been assessed (Yes/No) If, yes qty. assess**	**Average qty of garbage disposed in a day**	**Frequency of removal of grabage in a day**	**By departmentally or outsourced**	**Method of disposal (burning, dumping in railway premises Municipal notified landfills, etc.)**	**whether clause regarding segragation of waste as Bio-degradable and non-bio-degradable exists in the contract (Yes/No)**	**Whether separate centralised dumping yard is avaialble within the station premises for collection of garbage (Yes/No)**	**If not, how the garbage is being removed from various points**	**Removal of garbage from the centralised dumping yard of the station - by outside agency/ dept./ municipal authorities?**	**Is the transportation of garbage done in hygienic manner, in case of outside agency or dept.? (coverring the truck with tarpaulin)**	**Whethr rag picking contracts are available ? (Yes/No)**
NR/FZR	ASR	A1/NSG3	Yes (10 cum. per day)	10 cum per day	Once a day	Outsourced	Municipal	No	No	NAP	By Municipal authourised contractor	Hygienic manner by the agency	Yes
NR/DLI-Dn	NZM	A1/NSG2	No	0.4 MT approx	Once in a day	Outsourced	Municipal notified landfill	No	Yes	NAP	Outsource agency	Yes	Yes
WR/BCT	DDR	A1/SG1	Yes	0.05 MT	3 times	Outsourced	Municipal	Yes	Yes (Outside Station Premises)	NAP	BMC	Yes	Yes
* 1 nos (Two dumping point required by CHI Gaya due to facing problem.)													
Note:During the review period 2016-17 to 2018-19 records for garbage generated daily were not maintained at Dadar													
**Garbage removed from dustbins & collected in 1000 cft. Capacity wheelbarraw dustbin which are kept at corner of parcel office that can easily approach to BMC garbage lifting vehicle.													
# A letter of acceptance had been issued on 08-08-2019 for segregation of bio-degradable and non-bio degradable waste.													
NAP: Not applicable													

Annexure 4.8---Waste Management machanism at Station Premises (Para 4.1.7.4)											
Name of Zone/ Division	**Name of station**	**Category of station**	**Whether MSW from platforms and railway track was collected & disposed off in accordance with 'Municipal Solid Waste Rules, 2000' (Yes/No)**	**Whether MSW dispossed off designated disposal site? (Yes/No)**	**Whether any record maintained in this regard? (Yes/No)**	**If no, reasons thereof.**	**Whether effluents generate at railway station? (Yes/No)**	**If yes, whether it is discharged into STP/CETP? (Yes/No)**	**Whether eco friendly toilets/mobile toilets provided for use of encroachers in the Railway land by the local government? (Yes/No)**	**Whether Incinerator is available? (Yes/No)**	**Remarks.**
ECR/ MGS	GAYA	A1/NSG2	No	No	No	Nil	No	NAP	No*	No	Nil
ER/SDAH	SDAH	A1/NSG1	Yes (except segregation of waste)	Yes	Yes	NAP	Yes	No	No	No	Nil
NER/ LJN	GKP	A1/NSG2	Yes	Yes	Yes	NAP	No	No	No	No	Nil
CR/CSTM	DR	A1/SG1	Yes	Municipal solid waste (MSW) was disposed by by Mumbai Municipal authorities	No	MSW was collected from one place of station and disposed of by Mumbai Municipal Authorities.	Yes	Through Pipline upto Mumbai Municipal severage system	No	Yes (for sanitory pad in the ladies wating room)	Nil
NCR/AGRA	AGC	A1/NSG2	Yes	Yes	Yes	NAP	No	NAP	NAP	No	Nil
NR/FZR	ASR	A1/NSG3	Yes	Yes	No	No reasons available on records.	No	NA	No	No	Nil
NR/DLI	NZM	A1/NSG2	No	No	No	No reasons available on records.	Yes	No, disposed off in Delhi Jal Board Sewerage system	No	No	Nil
WR/BCT	DDR	A1/SG1	Yes	Yes	No	-	Yes	Yes#	No	No	# by BMC
* However, Movable toilet provided at the time of 'Pitrapaksha Mela' by the Railway Administration.								NAP: Not applicable			

Annexure-4.9--Security Management at Station(Para 4.1.7.6)																	
Name of the Zonal Railway	Name of the Division	Name of the selected station	No. of DFMDs planned	Whether any DFMDs installed	No of DFMDs installed	Date of installation	No of DFMDs in operational condition	Whether DFMDs was correctly placed at entry point?	Whether DFMDs are regularly monitored	No. of authorised entries/ exits planned	No. of authorised entries/ exits provided	No. of unauthorised entry/ exits existing	Whether security personnel deployed on each main entry point?	No. of security personnel deployed at each point.	Whether security personnel deployed on each unauthorised entry point?	Whether bomb detection and disposal system installed	Whether provision of boundry wall has been made in the circulating area of	Whether monitoring of security system at divisional/zonal level with frequency?
ECR	MGS	GAYA	Nil	No*	NAP	NAP	NAP	NAP	NAP	03#	3	The station can be accessed through no. of unauthorised entry from both side Pf. No. 1 and Pf. No. 07	No	NAP	No	No	No	Deployment of RPF Personal reported to Divisional Control office on daily basis which are accordingly monitored them.
ER	SDAH	SDAH	40	No	Nil	Nil	Nil	Nil	Nil	5 (including 01 pocket gate for railways)	5	Nil	Yes	05(Round the clock)	NAP	Yes	No	Yes
NER	LJN	GKP	4	yes	4	09.05.2018	4	Yes	Yes	3	3	open	Yes	21 per day	no	No	No	_
CR	CSTM	DR	25	Yes	10	8 Nos on15-4-2013 2 Nos on 14-5-2014	3	Yes	Yes	11	11	Nil	Yes	Two**	No un-authorised entry point	NO	Yes	Yes, at Divisional level by Sr DSC/ASC ,
NCR	AGRA	AGC	NAV	Yes	2	27.5.16	2	Yes	Yes	2	2	2	Yes	15 (Total staff Dep-loyed on station)	No	No	No	Yes

Annexure-4.9--Security Management at Station(Para 4.1.7.6)																		
Name of the Zonal Railway	Name of the Division	Name of the selected station	No. of DFMDs planned	Whether any DFMDs installed	No of DFMDs installed	Date of installation	No of DFMDs in operational condition	Whether DFMDs was correctly placed at entry point?	Whether DFMDs are regularly monitored	No. of authorised entries/ exits planned	No. of authorised entries/ exits provided	No. of unauthorised entry/ exits existing	Whether security personnel deployed on each main entry point?	No. of security personnel deployed at each point.	Whether security personnel deployed on each unauthorised entry point?	Whether bomb detection and disposal system installed	Whether provision of boundry wall has been made in the circulating area of	Whether monitoring of security system at divisional/zonal level with frequency?
NR	FZR	ASR	4	Yes	3	20.10.2017	3	Yes	Yes	4	6 (@)	0	Yes	12	NAP	Yes	Yes	Mointoring of Security system is available over NR Superior officers conducted regular surprize cheking and mointor security management system available at Railway stations ofently.
NR	DLI-Dn	NZM	0	Yes	4	01.11.09	4	Yes	Yes	4	4	3	Yes	2 per shift	No	Yes	No	
WR	BCT	DDR	Nil	No	Nil	NAP	NAP	NAP	NAP	19	19	Nil	No	No	No	No	Yes	Yes
* No DFMD has been installed as part of Integrated Security System as a permanent Measures. However, one inactive DFMD on found PF No. 01, tied with ropes which installed during "Pitripaksh Mela" in September 2018 as a temporary measures which remained out of use till date. The said machine (DFMD) was installed by GRP to deal with the crowed during "Pitripaksh Mela".																		
# One main entry/ exit and two via FOB which is directly connected to Road and Colony.																		
Note:1)8 DFMD's were installed at main entrance of PF No 6 and 2 were placed at Dadar Treminus (PF No 7 &8)																		
**During the joint inspection on 28-9-2019 it was noticed that only at Two locations security personnel were available.			RPF personnel were not found manning the entry points at all times.															
(@) Including two Esclators recently provided at both sides of stations.																		
NAP:Not applicable; NAV: Not available																		

Annexure-4.10 --Security aspects at Stations (Para 4.1.7.6)																		
					Infrastructure requirements													
Name of the Zonal Railway	Name of the Division	Name of Stations selected	No. of CCTVs planned	Whether any CCTVs installed at the station	No of CCTV installed	Date of installation	No of CCTV in operational condition	Whether CCTVs regularly monitored	Whether CCTV correctly placed to monitor at station	No. of baggage scanners planned	Whether any baggage scanners installed	No of baggage scanning machines installed & metal detectors	Date of installation	No of baggage scanning machines& metal detectors in operational condition	Whether baggage scanner correctly placed to at station	Whether scanning machines & metal detectors are regularly monitored	Whether the CCTV footage/ Scanning Machine footages integrated with command centre	Remarks, If any
ECR	MGS	GAYA	46	Yes	32*	Installation under progress	Not applicable	Not applicable	Yes	0	Not applicable	Nil	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Nil
ER	SDAH	SDAH	250	Yes	218	26-03-2019	193	Yes	Yes	2	No	Nil	Not Applicable	Not Applicable	Not Applicable	Not Applicable	No during the review period	Nil
NER	LJN	GKP	67	Yes	67	10-06-2016	67	Yes	Yes	3	Yes	1. bag scanner-03 2. HHMD-17 3. DFMD-8	29-05-2016	1. bag scanner-01 2. HHMD-17 3. DFMD-4	Yes	Yes	Yes	**
CR	CSTM	DR	121	Yes	121	14-08-2015	153	Yes	Yes	1	Yes	1	30-7-2009	1	Yes	Yes	Yes	#
			32		32	16-10-2018												
NCR	AGRA	AGC	NAV	Yes	51	07-05-2016	51	Yes	Yes	1	Yes	1 & 11	27/05/2016	1 & 11	Yes	Yes	Yes	Nil
NR	FZR	ASR	44	Yes	17	20-10-2017	17	Yes	Yes	1	Yes	BSM=01 HMD=03	Apr-19	BSM=01 HMD=03	No	Yes by SSE/Tele / ASR	No	* 17 nos CCTV installed by GRP on 20.10.2017

Annexure-4.10 --Security aspects at Stations (Para 4.1.7.6)

Name of the Zonal Railway	Name of the Division	Name of Stations selected	No. of CCTVs planned	Whether any CCTVs installed at the station	Infrastructure requirements												Whether the CCTV footage/ Scanning Machine footages integrated with command centre	Remarks, If any
					No of CCTV installed	Date of installation	No of CCTV in operational condition	Whether CCTVs regularly monitored	Whether CCTV correctly placed to monitor at station	No. of baggage scanners planned	Whether any baggage scanners installed	No of baggage scanning machines installed & metal detectors	Date of installation	No of baggage scanning machines& metal detectors in operational condition	Whether baggage scanner correctly placed to at station	Whether scanning machines & metal detectors are regularly monitored		
NR	DLI-Dn	NZM	133	Yes	85	$$	85	Yes	Yes	4	4	BSM=04, HMD= 20	2011	BSM=04, HMD= 20	Yes	Yes	No	Nil
WR	BCT	DDR	82	Yes	64	NA	64	Yes	Yes	0	No	Nil	NAP	Nil	NAP	NAP	No	@@

* 32 no. CCTV out of 46 (Planned) are installed, but not working due to not handover after repair of control room by Engineering Department.

12 Cases detected through CCTV i.e. Theft of mobile, purse and baggage. etc,
and one case detected through baggage scanner.Siezed 2 Handmade pistol and 22Nos of live bullets rounds.

Two cases siezer of 'Ganja' detected by Government Railway Police. 1. There were 67 cameras installed at GKP Station which was not suffiecient most of areas are out of coverage. 2. Only 3 bag scanner were installed agasint 6 entry point.
$$ 03-11-2018(08), 15-04-2019(02), 20-04-2019(02), 11-05-2019 (01), 16-05-2019(02), 21-05-2019(03), 25-05-2019(04), 30-05-2019(01) & 62 CCTVs prior 2016-17.
@@ Additional CCTV cameras should be installed at DDR station at earliest.

NA- Not Available NAP-Not applicable

Annexure -4.11-Crowd Management at Station(Para 4.1.7.7)														
Name of the Zonal Railway	Name of the Division	Name of Stations selected	Whether Crowd Management aspect has been included in Zonal Plan & Divisional Plan	Whether Stations expected to receive crowd on special occasions (viz.festival, political etc) have been identified [Yes/No]	Name of Stations identified	Period and duration of the special occasion (dd-mm-yy to dd-mm-yy)		Name of the Special Occasion	No of passengers handled during the special occasion	No of special train operated during the special occasion	No of security staff (RPF,RPSF,GRP,State Police)deployed during the special occasion	Whether disasters or major incidents like stampedes occurred	Reasons of disasters/ major incidents (as per notified report, if any)	Details of loss life, injuries
						From	To							
ECR	MGS	Gaya	Yes	Yes	Gaya	15.09.2016	30.09.2016	Pitripaksh Mela	451354	Not Available	NAV	No	NAP	NAP
						05.09.2017	20.09.2017	Pitripaksh Mela	418751	Rakes-38	NAV	No	NAP	NAP
						23.09.2018	08.10.18	Pitripaksh Mela	439072	Rakes-40	192	No	NAP	NAP
ER	SDAH	SDAH	Yes	Yes	SDAH	06-10-2016	11-10-2016	Durga Puja	2000000	EMU 14 Mail/ Express 6 (on an average)	200(Only RPF officer & staff)	NAP	NAP	NAP
						25-09-2017	30-09-2017							
						14-10-2018	20-10-2018							
						09-01-2017	16-01-2017	Ganga Sagar Mela						
						09-01-2018	16-01-2018							
						09-01-2019	16-01-2019							

Annexure -4.11-Crowd Management at Station(Para 4.1.7.7)														
Name of the Zonal Railway	Name of the Division	Name of Stations selected	Whether Crowd Management aspect has been included in Zonal Plan & Divisional Plan	Whether Stations expected to receive crowd on special occasions (viz.festival, political etc) have been identified [Yes/No]	Name of Stations identified	Period and duration of the special occasion (dd-mm-yy to dd-mm-yy)		Name of the Special Occasion	No of passengers handled during the special occasion	No of special train operated during the special occasion	No of security staff (RPF,RPSF,GRP,State Police)deployed during the special occasion	Whether disasters or major incidents like stampedes occurred	Reasons of disasters/ major incidents (as per notified report, if any)	Details of loss life, injuries
						From	To							
NER	LJN	GKP	NAV	Yes	GKP	20.01.2019	15.02.2019	Kumbh mela	100000 (General)	NAV	30(RPF)+22per day	No	Nil	Nil
						10.03.2019	21.03.2019	Holi arrival	35500	NAV	NAV			Nil
						25.03.2019	31.03.2019	Holi departures	35500	NAV	NAV			Nil
						15.01.2019	04.03.2019	Kumbh mela	34635	20	30(RPF)+22per day	No	Nil	Nil
						10.07.2017	10.08.2017	Shravan Mela	30575	62	NAV			Nil
						27.07.2018	26.08.2018	Shravan Mela	32075	62	NAV			Nil

Annexure -4.11-Crowd Management at Station(Para 4.1.7.7)													
Name of the Zonal Railway	Name of the Division	Name of Stations selected	Whether Crowd Management aspect has been included in Zonal Plan & Divisional Plan	Whether Stations expected to receive crowd on special occasions (viz.festival, political etc) have been identified [Yes/No]	Name of Stations identified	Period and duration of the special occasion (dd-mm-yy to dd-mm-yy)		Name of the Special Occasion	No of passengers handled during the special occasion	No of special train operated during the special occasion	No of security staff (RPF,RPSF,GRP, State Police)deployed during the special occasion	Whether disasters or major incidents like stampedes occurred	Reasons of disasters/ major incidents (as per notified report, if any)	Details of loss life, injuries
						From	To							
CR	CSTM	DR	Yes	Yes	DR	2016-17		Ganesh Chathurthi	850000	NAV	50 to 70 more Staff were deployed on special festival occasion	No	Nil	Nil
						2016-17		Dipawali	950000	NAV		No	Nil	Nil
						2016-17		Mahaparinirvan Day of Dr B.R. Ambedkar (6 Dec)	1200000	NAV		No	Nil	Nil
						18-8-2017	11-9-2017	Ganesh Chathurthi	900000	211		No	Nil	Nil
						27-9-2017	30-10-2017	Dipawali	1000000	68		No	Nil	Nil
						4-12-2017	8-12-2017	Mahaparinirvan Day of Dr B.R. Ambedkar (6 Dec)	1260000	12		No	Nil	Nil
						3-9-2018	30-9-2018	Ganesh Chathurthi	950000	160		No	Nil	Nil
						2-11-2018	26-11-2018	Dipawali	1070000	76		No	Nil	Nil
						4-12-2018	8-12-2018	Mahaparinirvan Day of Dr B.R. Ambedkar (6 Dec)	1300000	12		No	Nil	Nil
NCR	AGRA	AGC	Yes	No	NA									

Annexure -4.11-Crowd Management at Station(Para 4.1.7.7)														
Name of the Zonal Railway	Name of the Division	Name of Stations selected	Whether Crowd Management aspect has been included in Zonal Plan & Divisional Plan	Whether Stations expected to receive crowd on special occasions (viz.festival, political etc) have been identified [Yes/No]	Name of Stations identified	Period and duration of the special occasion (dd-mm-yy to dd-mm-yy)		Name of the Special Occasion	No of passengers handled during the special occasion	No of special train operated during the special occasion	No of security staff (RPF,RPSF,GRP, State Police)deployed during the special occasion	Whether disasters or major incidents like stampedes occurred	Reasons of disasters/ major incidents (as per notified report, if any)	Details of loss life, injuries
						From	To							
NR	FZR	ASR	No	Yes	ASR	1st May 1st Oct	30th June 30th Nov	Festivel/ School Holiday	NA	Nil	No extra security staff deputed but managed with existing strength.	No	Nil	Nil
NR	DLI-Dn	NZM	No	No	NZM	NAP	NAP	NAP	NAP	NAP	NAP	No	Nil	Nil
WR	BCT	DDR	Yes	Yes	DDR	01/12/2016	08/12/2016	Mahaparinirvan Diwas (Death annivarsarry of Baba Sahab Vim Rao Ambedkar)	1000000	Nil	60 RPF	No	NAP	NAP
						01/12/2017	08/12/2017	--Do--	1000000	Nil	54 RPF	No	NAP	NAP
						01/12/2018	08/12/2018	--Do--	1200000	Nil	63 RPF	No	NAP	NAP
NAV: Not available; NAP: Not applicable														

Annexure-4.12--Encroachment Inspection Register (Para 4.1.7.8)												
Name of the Zonal Railway	Name of the Division	Name of Stations selected	Year	Name of SSE checked Location	Details of encroachment			Date on which encroachment came to notice for the first time	Action taken to remove the encroachment	Date of removal of encroachment	Present Status of encroachment	Remarks
					Nature of encroachment (soft/Hard) with no.	Area encroached	Type of encroachment (Commercial/ Residential)					
ECR	MGS	GAYA	2016-17	Kamlesh Kumar	Soft (50	Not Available	Commercial	Not Available	Removed	13.02.2017 to 16.02.2017 & 25.11.2016	Re-encroachment	Nil
			2017-18	Manoj Kumar & Kamlesh Kumar	Soft (50)	Not Available	Commercial	Not Available	Removed		Re-encroachment	
			2018-19	Manoj Kumar	Hard (03) soft (50)	4300 sqft.	Commercial	Hard 31.3.2019 (Lease completed)	Letter issued to owner & Paste on wall	Not applicable	Encroachment	
ER	SDAH	SDAH	2016-17	SDAH	332 nos. + There are 10 numbers of Residential encroachers along side the track (Name are not maintained).	PF 2&3 Outside Prafullya gate North gate and entire south station(Area of encroachment not maintained)	Commercial	Last more than 20 years	As per available records several programme for removal of un-authorised structure were fixed by Railway Administration in Sealdah Division. However, Law and Order agency were not available on eviction date.	Nil	342 Encroachment	Specific records for removal of unauthorised structures at Sealdah Station is not available.
			2017-18									
			2018-19									

Annexure-4.12--Encroachment Inspection Register (Para 4.1.7.8)												
Name of the Zonal Railway	Name of the Division	Name of Stations selected	Year	Name of SSE checked Location	Details of encroachment			Date on which encroachment came to notice for the first time	Action taken to remove the encroachment	Date of removal of encroachment	Present Status of encroachment	Remarks
					Nature of encroachment (soft/Hard) with no.	Area encroached	Type of encroachment (Commercial/ Residential)					
NER	LJN	GKP	2016-17 2017-18 2019-19	SSEW/East/ Gorakhpur	Majaar (East of yard)	50 square meter	Religious	About 60 years old	No action taken was found in records	NA	Encroached	**Nil**
					Mandir (gate No. 7)	26.5 square meter	Religious	About 20 to 25 years old	No action taken was found in records	NA	Encroached	
CR	CSTM	DR	2016-17, 2017-18, 2018-19	SSE (W) DR, DR station	Temple,Near license porter Room	3.75X3.90 =14.625 Sq. meters	Religious	Date of encrochment was not mentioned in encrochment register. As per encroachment register it was prior to year 1995	Railway Administration served notice at encrochment places in April'2018	Not removed	Encroached	#Railway administration served notices for removal of these encroachments in April'18 to trustees of temple. However, till date encroachment has not been removed.
			2016-17, 2017-18, 2018-19	SSE (W) DR, DR station	Temple,East end of PF No6	3.30X2.45 =8.08 Sq meters & 9.00X11.80 =106.20 Sq. meters	Religious			Not removed	Encroached	
			2016-17, 2017-18, 2018-19	SSE (W) DR, DR station	Temple,Near Substation	2.40X2.40 =5.76 Sq. meters	Religious	Do	Do	Not removed	Encroached	
			2016-17, 2017-18, 2018-19	SSE (W) DR, DR station	Temple,Near Crime Branch office	3.00X3.00 =9.00 Sq meters	Religious			Not removed	Encroached	

Annexure-4.12--Encroachment Inspection Register (Para 4.1.7.8)												
Name of the Zonal Railway	Name of the Division	Name of Stations selected	Year	Name of SSE checked Location	Details of encroachment			Date on which encroachment came to notice for the first time	Action taken to remove the encroachment	Date of removal of encroachment	Present Status of encroachment	Remarks
					Nature of encroachment (soft/Hard) with no.	Area encroached	Type of encroachment (Commercial/ Residential)					
					Nature of encroachment (soft/Hard) with no.	Area encroached	Type of encroachment (Commercial/ Residential)					
NCR	AGRA	AGC	2016-17	Saurjesh Yadav	Hard (Mosque)	NAV	Religious	NAV	No action taken was found in records	Not removed	Encroached	Nil
			2017-18									
			2018-19									
NR	FZR	ASR	2016-17	SSE/W/ML/ASR	Sh. Vinod Arora	18.42 Sqm	Commercial	Oct'1992	Eviction proceeding initiated under PPEAct	Not removed	Case under PPEA pending with EO/FZR	No Hearing after Sept/2003.
					88 shops	982.34 Sqm		Dec-81				
			2017-18		Sh. Vinod Arora	18.42 Sqm	Commercial	Oct'1992	Eviction proceeding initiated under PPEAct	Not removed	Case under PPEA pending with EO/FZR	
					88 shops	982.34 Sqm		Dec-81				
			2018-19		Sh. Vinod Arora	18.42 Sqm	Commercial	Oct'1992	Eviction proceeding initiated under PPEAct	Not removed	Case under PPEA pending with EO/FZR	
					88 shops	982.34 Sqm		Dec-81				
NR	DLI-Dn	NZM	2016-17	SSE/Works/NZM	NIL	NIL	NIL	NIL	NIL	NIL	NIL	Nil
			2017-18	SSE/Works/NZM	NIL	NIL	NIL	NIL	NIL	NIL	NIL	
			2018-19	SSE/Works/NZM	NIL	NIL	NIL	NIL	NIL	NIL	NIL	
WR	BCT	DDR	2016-17	Omprakash rai SSE/W Matunga	40 Soft	4460 Sqft	Residential	More than 15 years ago	PPE case to be initiated	To be removed after following Due process of Law	Encroachment not removed	After following process of Law the same will be removed
			2017-18	R.K. Tiwari SSE/W Matunga			Residential	More than 15 years ago	PPE case to be initiated			

Annexure-4.12--Encroachment Inspection Register (Para 4.1.7.8)												
Name of the Zonal Railway	Name of the Division	Name of Stations selected	Year	Name of SSE checked Location	Details of encroachment			Date on which encroachment came to notice for the first time	Action taken to remove the encroachment	Date of removal of encroachment	Present Status of encroachment	Remarks
					Nature of encroachment (soft/Hard) with no.	Area encroached	Type of encroachment (Commercial/ Residential)					
					Nature of encroachment (soft/Hard) with no.	Area encroached	Type of encroachment (Commercial/ Residential)					
			2018-19	R.K. Tiwari SSE/W Matunga			Residential	More than 15 years ago	PPE case to be initiated			

Annexure-4.13-Statement showing position of maintenance of records for monitoring on encroachment (Para 4.1.7.8)								
Name of the Zonal Railway	Name of the Division	Name of Stations selected	Year	Name of SSE/Location	Whether encroachment inspection register being maintained (yes/No)	If yes,		
						No. of time required to be submitted	No. of times actually submitted	Whether certified by ADEN (Yes/No)
ECR	MGS	GAYA	2016-17	Kamlesh Kumar	No	4	NAP	NAP
			2017-18	Manoj Kumar and Kamlesh Kumar	No	4	NAP	NAP
			2018-19	Manoj Kumar	No	4	NAP	NAP
ER	SDAH	SDAH	2016-17	SDAH Station	No	4	NAP	NAP
			2017-18	SDAH Station	No	4	NAP	NAP
			2018-19	SDAH Station	No	4	NAP	NAP
NER	LJN	GKP	2016-17	SSEW/East/ Gorakhpur	Yes	4	1	Yes
			2017-18	SSEW/East/ Gorakhpur	Yes	4	1	Yes
			2018-19	SSEW/East/ Gorakhpur	Yes	4	1	Yes
CR	CSTM	DR	2016-17	SSE (W) DR, DR station	Yes	4	1	Yes
			2017-18	SSE (W) DR, DR station	yes	4	1	Yes
			2018-19	SSE (W) DR, DR station	Yes	4	1	Yes
NCR	AGRA	AGC	2016-17	Saurjesh Yadav / Agra Cantt	Yes	4	1	Yes
			2017-18			4	1	Yes
			2018-19			4	1	Yes

Annexure-4.13-Statement showing position of maintenance of records for monitoring on encroachment (Para 4.1.7.8)								
Name of the Zonal Railway	Name of the Division	Name of Stations selected	Year	Name of SSE/Location	Whether encroachment inspection register being maintained (yes/No)	If yes,		
						No. of time required to be submitted	No. of times actually submitted	Whether certified by ADEN (Yes/No)
NR	FZR	ASR	2016-17	SSE/Works/ML/ASR	Yes	4	4	Yes
			2017-18		Yes	4	4	Yes
			2018-19		Yes	4	4	Yes
	DLI-Dn	NZM	2016-17	SSE/Works/NZM	Yes	4	1	Yes
			2017-18	SSE/Works/NZM	Yes	4	1	Yes
			2018-19	SSE/Works/NZM	Yes	4	1	Yes
WR	BCT	DDR	2016-17	Shri Omprakash Rai/SSE/W/Matunga	Yes	4	1	Yes
			2017-18	Shri R.K. Tiwari SSE/W/Matunga	Yes	4	1	Yes
			2018-19	Shri R.K. Tiwari/SSE/W/Matunga	Yes	4	1	Yes

NAP: Not applicable

Annexure-4.14-Statement showing preventive meausres taken by Railway Administration to check encroachment(Para 4.1.7.8)											
Name of Zonal Railway/ Division	Station selected	Year	Construction of boundary wall (in meters)					Plantation (in area.)			
			Total required	Programmed during the year	Constructed during the year	Shortfall	Shortfall percentage	Target for the year	Planted during the year	Shortfall	Shortfall percentage
ECR/ MGS	GAYA	2016-17	1800	1800	400 M**	1400	71	10000	1000	9000	90
		2017-18	1400	1400	Nil	1400	100	10000	1000	9000	90
		2018-19	1400	Nil	Nil	1400	100	10000	1000	9000	90
ER/SDAH	SDAH	2016-17	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		2017-18	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		2018-19	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
NER/LJN	GKP	2016-17	Nil	Nil	Nil	Nil	Nil	400	400	Nil	Nil
		2017-18	Nil	Nil	Nil	Nil	Nil	200	200	Nil	Nil
		2018-19	4000 meter	Nil	Nil	Nil	Nil	3000	3000	Nil	Progress
CR/CSTM	DR	2016-17	Nil	Nil	Nil	Nil	Nil	Not Fixed	250	NAP	NAP
		2017-18	Nil	Nil	Nil	Nil	Nil	Not Fixed	165	NAP	NAP
		2018-19	Nil	Nil	Nil	Nil	Nil	Not Fixed	Nil	NAP	NAP
NCR/AGRA	AGC	2016-17	Not assessed	NAV	Nil	NAP	NAP	NAV	0	NAP	NAP
		2017-18			Nil				0		
		2018-19			300				7056 m2		
NR/FZR	ASR	2016-17	2000	Nil	Nil	2000	100%	29000	29000	0	Nil
		2017-18	2000	Nil	400	1600	80%	15000	2000	13000	86.67%
		2018-19	5000	Nil	600	4400	88%	15000	5425	9575	63.83%

Annexure-4.14-Statement showing preventive meausres taken by Railway Administration to check encroachment(Para 4.1.7.8)										
Name of Zonal Railway/ Division	Station selected	Year	Construction of boundary wall (in meters)					Plantation (in area.)			
			Total required	Programmed during the year	Constructed during the year	Shortfall	Shortfall percentage	Target for the year	Planted during the year	Shortfall	Shortfall percentage
NR/DLI	NZM	2016-17	Nil	N/A	N/A	N/A	N/A	Nil#	N/A	N/A	N/A
		2017-18	Nil	N/A	N/A	N/A	N/A	Nil	N/A	N/A	N/A
		2018-19	Nil	Nil	Nil	Nil	Nil	500	620	NIL	N/A
WR/BCT	DDR	2016-17	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		2017-18	180	180	180	Nil	Nil	Nil	Nil	Nil	Nil
		2018-19	115	115	115	Nil	Nil	75	170	Nil	Nil
* At present this deficeincy will be done under work "Joint Developemnt of Passenger Amenities at Gaya Railway Station in association with Ministry of Tourism under AEN/Gaya.											
** PF NO.-7.											
# The seasonal plantation had been planted for beautification of station.											
Remarks- Boundary wall already exit at NZM Station on both side and no additional requirement of new boundary wall.											
NAP: Not applicable; NAV: Not available											

Annexure-4.15-Statement showing un-authorised encroachment on platform by Vendor-(Para 4.1.7.8)								
Name of Zonal / Division	**Name of Station selected**	**Total no. of platform**	**Total no. of authorised/ licensed vendor**	**Actual No. of Vendor exist**	**No. of Un-authorised vendors**	**Action taken to remove unauthorised vendor**	**Frequency of Monirotring of divisional/zonal level.**	**Remarks, If any.**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
ECR/ MGS	GAYA	9	124	124	0	Not Applicable	Divisional Level	* Frequency not fixed however monitoring is done by the Divisional Authority as and when they visit Gaya Station.
ER/SDAH	SDAH	21	49	381	332	Correspondences made at higher level but no eviction programme was found on record.	No	No
NER/ LJN	GKP	10	171	171	0	Not Applicable	Surprise check were being conducted by the zonal and divisional officers besides station director and other inspector check.	Nil
CR/CSTM	DR	8	9	9	0	Not Applicable	Regular inspections by Station Manager	Nil
NCR/AGRA	AGC	6	13	13	0	Not Applicable	Not fixed	Nil
NR/FZR	ASR	8	8	8	0	Not Applicable	At divisional level. Frequent checks are conducted to prevent unauthorised encroachment at the level of divisional officers and Inspectors.	Nil
NR/DLI	NZM	7	9	9	0	Not Applicable	Randomly inspection conducted by divisional authority from time to time	Nil
WR/BCT	DDR	7	23	23	0	Not Applicable	Monthly	Nil

Annexure-4.16-Statement showing un-authorised encroachment on Parking Area(Para 4.1.7.8)										
Name of Zonal / Division	**Station selected**	**No. of Parking contracts**	**Actual area of Parking Contract (in Sqm)**	**Parking area actually occupied by the contractor (in sqm)**	**Area occupied in excess (in sqm)**	**Rate (per/ sqm) (Rs.)**	**Whether unauthorised occupation disturb the entry/exist of the passanger**	**Action taken to remove unauthorised encroachment**	**Frequency of Monirotring of divisional/ zonal level.**	**Remarks, If any.**
ECR/ MGS	GAYA	4	1050 (Motor Cycle Stand)	1050	Nil	2076	No	NAP	Divisional level*	Nil
			1050 (Premier Car Parking)	1050	Nil	1160	No	NAP	Divisional level	
			930(Three Wheeler Auto Stand)	930	Nil	4903	No	NAP	Divisional level	
			1200(Auto Stand Delha)	1200	Nil	1585	No	NAP	Divisional level	
ER/ SDAH	SDAH	3	1890 sqm (Radio Taxi), 200sqm (Uber) 200sqm (Ola)	1890 200 200	Nil	10529 32250 30500	No	There is no unauthorized hawker in parking area	No	Nil
NER/ LJN	GKP	6	3317.03(Cycle Stand First entry)	3317.03	Nil	NAV	No	NAP		Nil
			1035.81(Car Parking first entry)	1035.81	Nil	NAV	No	NAP		
			4380(Cabway Stand second entry)	4380.00	Nil	NAV	No	NAP		
			1200(Cycle stand second entry)	1200.00	Nil	NAV	No	NAP		
			1000(Car parking second entry)	1000.00	Nil	NAV	No	NAP		
			1000(cabway parking second entry)	1000.00	Nil	NAV	No	NAP		

Annexure-4.16-Statement showing un-authorised encroachment on Parking Area(Para 4.1.7.8)										
Name of Zonal / Division	**Station selected**	**No. of Parking contracts**	**Actual area of Parking Contract (in Sqm)**	**Parking area actually occupied by the contractor (in sqm)**	**Area occupied in excess (in sqm)**	**Rate (per/ sqm) (Rs.)**	**Whether unauthorised occupation disturb the entry/exist of the passanger**	**Action taken to remove unauthorised encroachment**	**Frequency of Monirotring of divisional/ zonal level.**	**Remarks, If any.**
CR/CSTM	DR	No parking area is provided at Dadar (E) of the station								
NCR/AGRA	AGC	3	714 (Bus Parking Area)	714	NIL	167	No	NAP	Not fixed	Nil
			811.66(Car Parking Area)	811.66		158		NAP		
			1765(Cycle Scooter Area)	1765		129		NAP		
NR/FZR	ASR	2	2240.58(Cycle/Scooter)	2240.58	Nil	482	No	NAP	At divisional level thrice in a year.	Nil
			1038.86(Car Parking)	1038.86	Nil	389.87	No	NAP		
NR/DLI-Dn	NZM	1	3796.96 (Cycle/ Scooter/Car Parking)	3796.96	Nil	NAP	No	NAP	Randomly inspection conducted by Divisional authority from time to time	Nil
WR/BCT	DDR	1	380.6	380.6	Nil	1,033.00	No	NAP	Monthly	
* Frequency not fixed however monitoring is done by the Divisional Authority as and when they visit Gaya Station.										
NAV: Not available; NAP: Not applicable										

Annexure-4.17-Statement showing non-recovery of cost of damaged wagons by NER from Siding Owners(Para 4.4)						
Sl. No.	Year	Letter issued by ECR	Date	Name of siding owners	NER Division where siding owner located	Amount of non-recovery of cost of damaged wagons
1	2015-16	M/362/6/BG/Part 9	5.10.2015	MGIS	LJN	143624
2				MGIS	LJN	74779
3		M/362/6/BG/Part 9	5.11.2015	MGIS	LJN	37144
4		M/362/6/BG/Part 9	21.10.2015	MGIS	LJN	36434
5				MGIS	LJN	103964
6	2016-17	M/362/6/BG/Part 11	4.10.2016	KEA	LJN	59610
7		M/362/6/BG/Part 11	26.10.2016	KEA	LJN	56147
8				KEA	LJN	168831
9				KEA	LJN	23373
10		M/362/6/BG/Part 11	07.12.2016	KEA	LJN	187898
11		M/362/6/BG/Part 11	11.11.2016	KEA	LJN	53376
12	2017-18	M/362/6/BG/Part 12	15.02.2018	SWA	LJN	65707
13				BLP	LJN	124905
14				NTV	LJN	42378
15				NTV	LJN	119910
16				SWA	LJN	110375
17				MGIS	LJN	139225
18				SWA	LJN	193545
19		M/362/6/BG/Part 12	07.03.2018	MGIS	LJN	299186
20				MGIS	LJN	655686
21				KPV	LJN	284200
22	2018-19	M/362/6/BG/Part 12	20.04.2018	SWA	LJN	344559
23		M/362/6/BG/Part 12	05.07.2018	TLR	LJN	1743426

Annexure-4.17-Statement showing non-recovery of cost of damaged wagons by NER from Siding Owners(Para 4.4)						
Sl. No.	**Year**	**Letter issued by ECR**	**Date**	**Name of siding owners**	**NER Division where siding owner located**	**Amount of non-recovery of cost of damaged wagons**
24				MGIS	LJN	997516
25				BLP	LJN	4057061
26				UCR	LJN	2237707
27				TLR	LJN	3441713
28				TLR	LJN	4022937
29				MGIS	LJN	2330836
30		M/362/6/BG/Part 12	15.01.2019	MGIS	LJN	2592703
31		M/362/6/BG/Part 12	20.03.2019	MGIS	LJN	2500394
32	2019-20	M/362/6/BG/Part 12	06.06.2019	MGIS	LJN	3367403
33		M/362/6/BG/Part 12	10.07.2019	KPV	LJN	4817910
34				CPML	LJN	3631304
35				SWA	LJN	1482954
36				IAA	LJN	3865220
37		M/362/6/BG/Part 12	07.08.2019	MGIS	LJN	4053380
38				MGIS	LJN	351199
39				SWA	LJN	3278435
40				SWA	LJN	2801684
41				KEA	LJN	3181539
42				MGIS	LJN	4053380
43		M/362/6/BG/Part 12	08.08.2019	MGIS	LJN	6442108
44		M/362/6/BG/Part 12	19.08.2019	MGIS	LJN	141661
45		M/362/6/BG/Part 12	17.10.2019	MGIS	LJN	538042
				Total		**69255368**
					Say ₹. 6.93 crore	

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