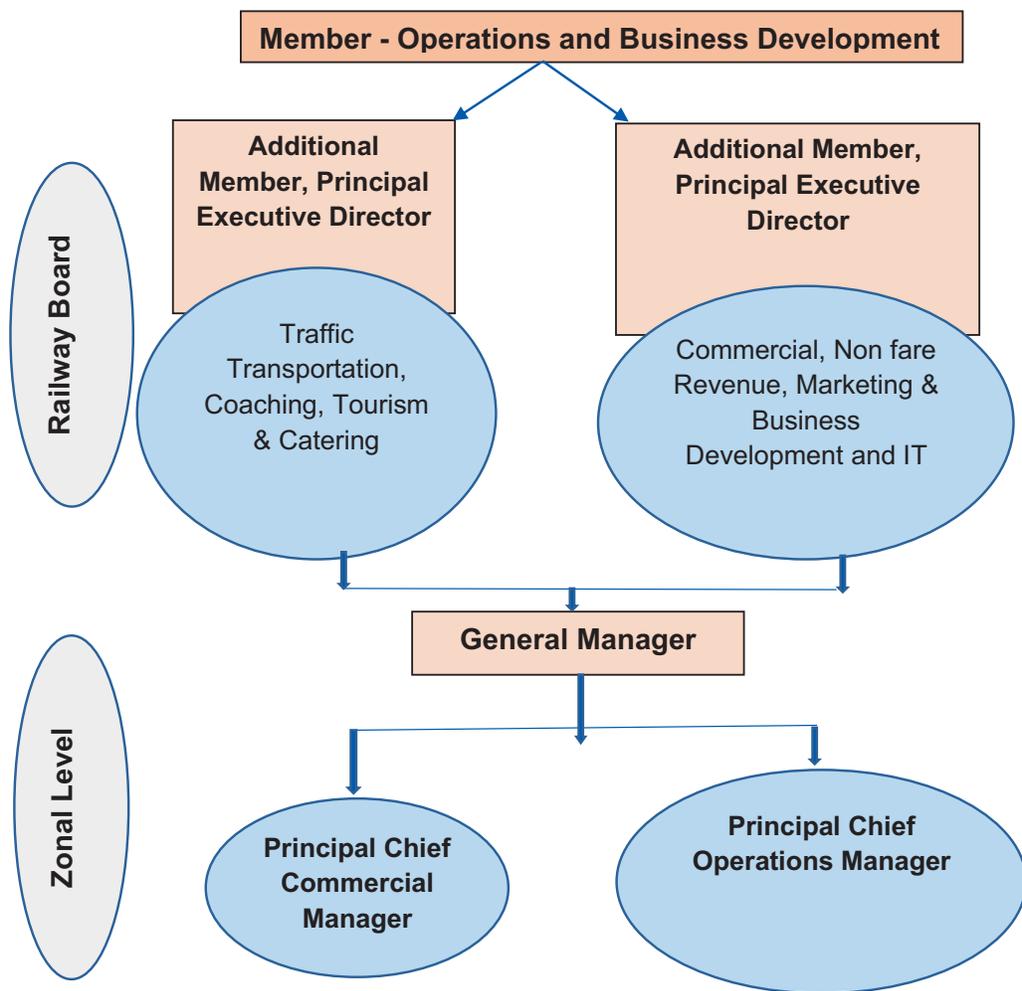


Chapter 2 – Operations and Business Development

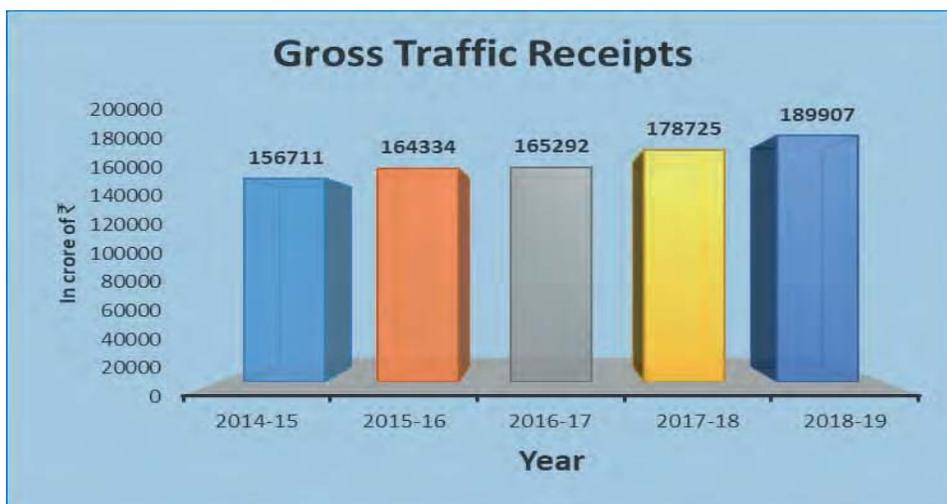
Member (Operations and Business Development) at Railway Board is responsible for Traffic Transportation, Coaching, Tourism & Catering, Commercial, Non Fare Revenue, Marketing & Business Development and Information Technology. He is assisted by Additional Members/Principal Executive Directors for fulfilling 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 crore¹¹. Total gross traffic receipt during the year was ₹ 1,89,906.58 crore¹². 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 Outstanding (Suspense) ₹ (-) 63.48 crore

¹³ Indian Railways carried 8,439.06 million passengers 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 species¹⁶ 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 27,312¹⁷. 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

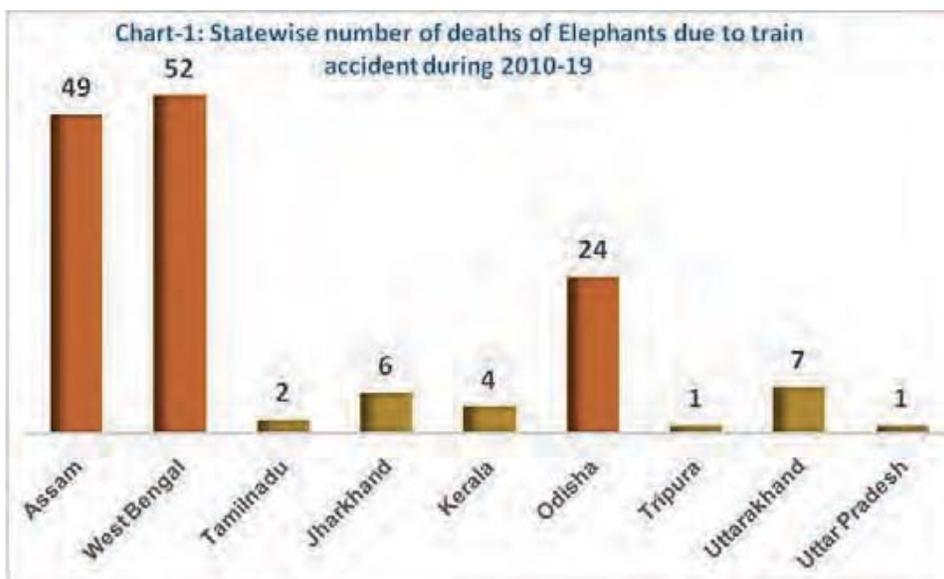
¹⁶ An endangered species is a species which has been categorized as very likely to become extinct.

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.

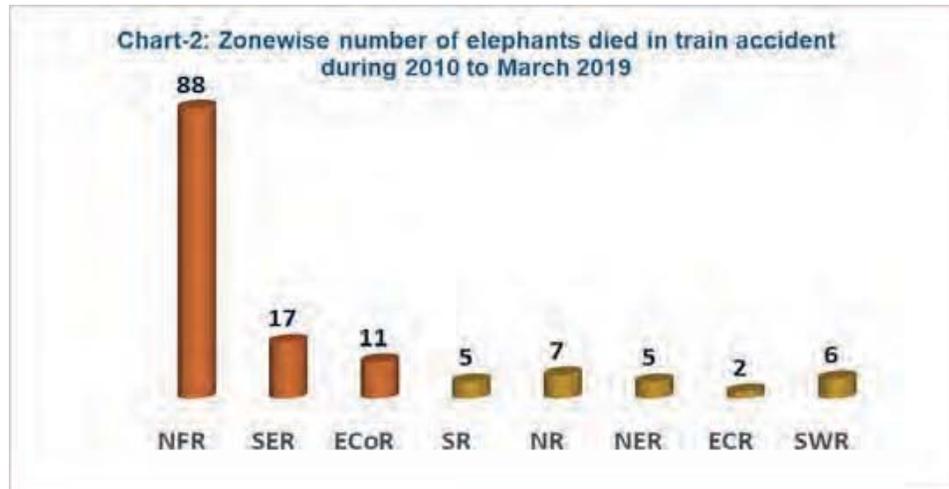
In India, elephants are distributed in four population units viz. North Western (Uttarakhand and Uttar Pradesh); North Bengal and North East; East Central (Jharkhand and Odisha) and South (Tamil Nadu, Kerala and Karnataka). In these regions, Ministry of Environment and Forests (MoEF) identified 138 State, 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 largest¹⁸ 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 advisories¹⁹ 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
<p>Formation of permanent co-ordination committee between Railways and Forest official at Zonal/Divisional levels</p> <p>Conducting periodic review of the agreed actions between Railways and Forest officials</p> <p>Imposition of speed restriction</p> <p>Cleaning of vegetation</p> <p>Deployment of elephant trackers <i>etc.</i></p>	<p>Construction of grade separators</p> <p>Construction of overpasses/underpasses, girder type bridge</p> <p>Development of electronic intelligence surveillance</p> <p>Lighting along the Railway track <i>etc.</i></p>

The MoR also circulated²⁰ (June 2015) the recommendations of World Wildlife Fund-India (WWF) to stop elephant deaths on Railway tracks to six Zonal Railway²¹. 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:



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 passages²³ in eight Zonal Railways (**Annexure 2.1**), 77 elephant passages²⁴ 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;

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.

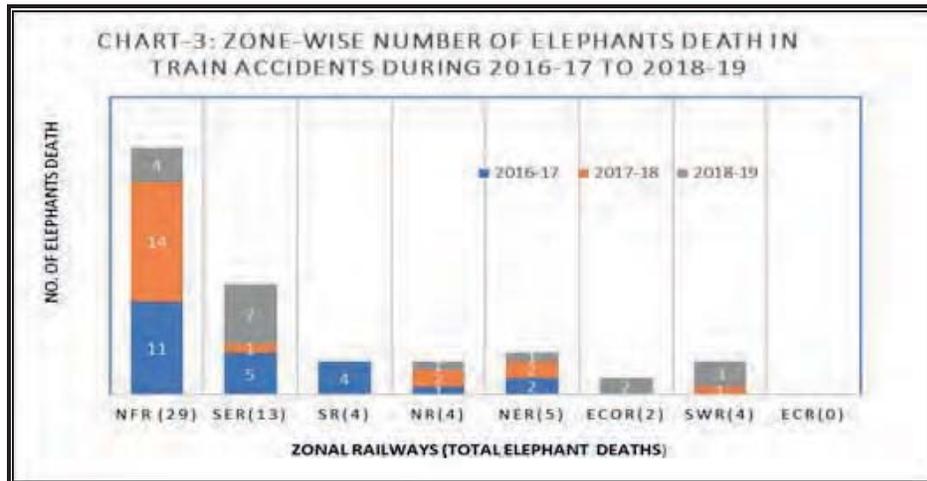
2.1.6 Audit Findings

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 review²⁵ 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 Uttarakhand 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 locations²⁶ 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 passages²⁷; however, in 18 passages²⁸, 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 passages²⁹, 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.

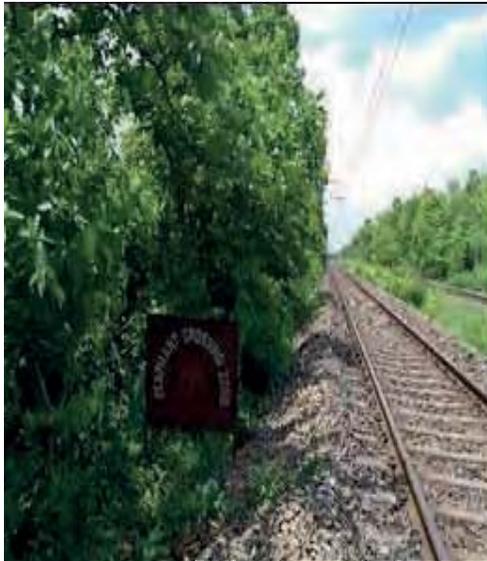


Figure 2.13: ECoR: Growth of vegetation seen during joint inspection in the notified elephant passage location between Rajathgarh-Ghantikhali Nidhipur stations



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) prescribes³⁰ 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



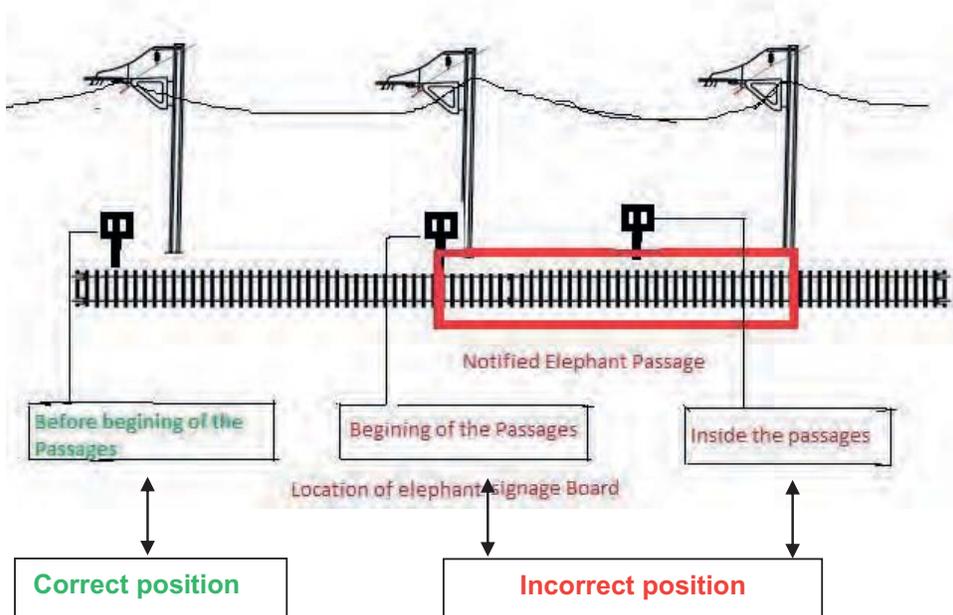
Figure 2.18: NFR: Signage Board in Elephant passage at Km. 94/2

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:
- Out of the 77 selected passages, Signage boards were not provided in 23 passages³¹ of five Zonal Railways.
 - Retro reflective signage boards were fitted in 30 passages³² of five Zonal Railways and hand painted signage in various colours were provided in 24 passages³³ in five Zonal Railways.
 - In eight selected passages³⁴ of four Zonal Railways, the signage boards were placed inside the notified elephant passages. In other 31 passages³⁵ of six Zonal Railways, the boards were provided at the beginning of the passages. Signage Boards were correctly provided before the beginning of 15 passages³⁶ 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 MoEF³⁷. 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 locations³⁸ 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 locations³⁹ 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 proposals⁴⁰ 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 work⁴¹ 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 estimates⁴² were prepared by Railway for provision of rail fencing in the section of Walayar-Kanjikkode 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.

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 four⁴³ 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 contract⁴⁴ 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 work⁴⁵ 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 years⁴⁶. 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 days⁴⁷.
- 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 items⁴⁸ 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 1.33⁴⁹ 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 ensured⁵⁰. CCTV Surveillance System at all four stations of ECoR were not fully functional/do not cover all the areas⁵¹ 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 reported⁵².

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 instruction⁵³ (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 incident⁵⁴, in addition to the panic caused to the public on the platforms, Railway sustained a loss of ₹ 1.05 crore and ₹ 0.44 crore respectively⁵⁵.
- The contractor was responsible for non-supply of materials and installation thereof. From the Railways side, the Supervising Officers⁵⁶ 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 charges⁵⁸ 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./Parsa⁵⁹ 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 Load⁶⁰" (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 inspection⁶¹ 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 sidings⁶² 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

⁶²Jai 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					Total	Total
	JRCT (January 2016 to June 2018)	BRSM (March 2015 to December 2018)	JPVN (February 2015 to February 2018)	RCPB (December 2016 to July 2018)			
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 crore⁶³. 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

⁶³JRCT - 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 Rules⁶⁴ 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 route⁶⁵. 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 routes⁶⁶ 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

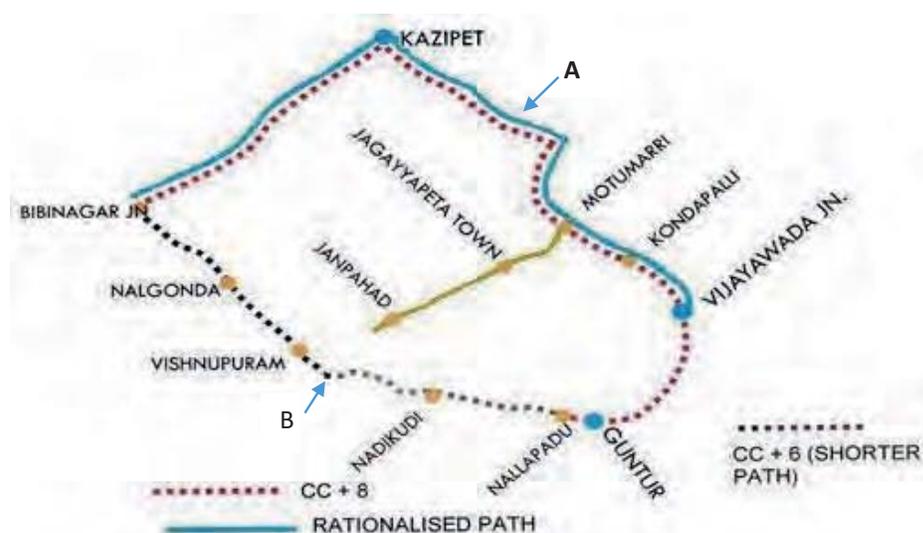
⁶⁴ Rule 125 (I) of IRCA Goods Tariff Part I Vol I

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 tonnes⁶⁷ 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 tonnes⁶⁸ more than the carrying capacity. The routes are shown in the following diagram:

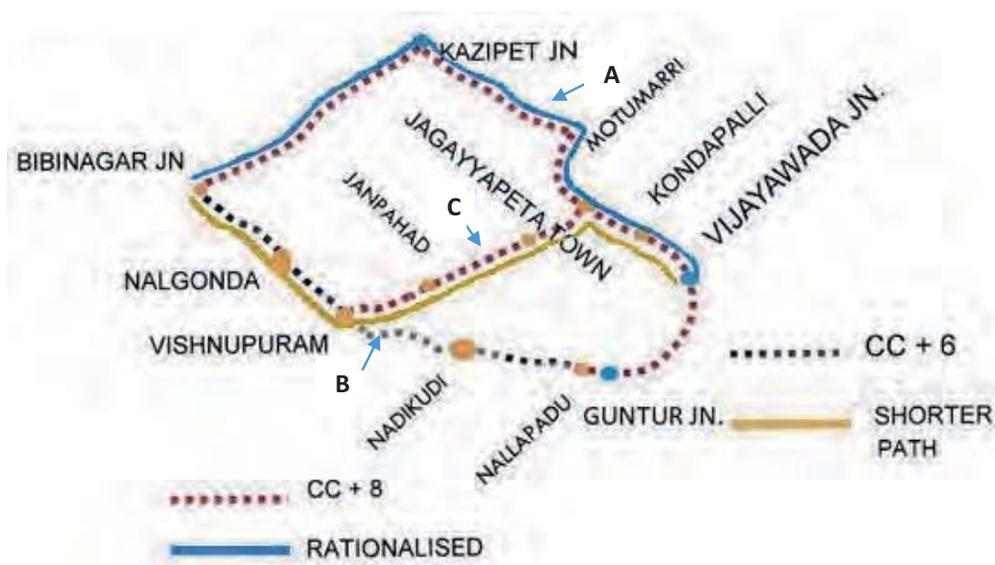
Routes with Capacity (Before 19 July 2017)



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 System⁶⁹ (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 rationalized⁷⁰ 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 capacity⁷¹ i.e higher load. Audit however noted that the sidings⁷² 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/VPU)s”. 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 trains⁷³. 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 stabling⁷⁴ 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 Depots⁷⁵ 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 crore⁷⁷ 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 Authorities. This constitutes an unwarranted expense.

As per provisions⁷⁸ 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

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

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

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

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

Railways for levy of Service Tax @ 12.36 per cent⁷⁹ in all cases of renting of immovable property with the exception of Negative List⁸⁰ and Exemption List⁸¹. 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 property⁸². Rates of Service Tax⁸³ 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 Divisions⁸⁴. 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 Authorities⁸⁵ 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

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

⁸⁰Negative 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.

⁸¹Exemption 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, services 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.

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

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

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

⁸⁵Divisional 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 crore⁸⁶ 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).

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