



सत्यमेव जयते

Report of the Comptroller and Auditor General of India for the year ended March 2021



SUPREME AUDIT INSTITUTION OF INDIA

लोकहितार्थ सत्यनिष्ठा

Dedicated to Truth in Public Interest

Union Government (Railways)
(Compliance Audit)
Report No. 35 of 2022 - Volume II

Report of the Comptroller and Auditor General of India

for the year ended March 2021

Laid in Lok Sabha/Rajya Sabha on _____

Union Government (Railways)
(Compliance Audit)
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Preface

The Report for the year ended March 2021 has been prepared for submission to the President under Article 151 (1) 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 2020-21 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 2020-21 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.

This Audit Report (Volume II) contains nine audit observations including three Pan India Paragraphs.

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Overview

The Audit Report for the year ending March 2021 is divided into two volumes viz. Volume I and Volume II. The Audit Report consists of audit findings relating to compliance issues in respect of the Ministry of Railways and its various field units. The Volume II (Report No. 35 of 2022) of the Audit Report includes three Pan India paragraphs, two Long paragraphs and four individual paragraphs. A brief overview of the important audit findings and conclusions is given below:

Para 1.1 Sundry revenue in Indian Railways

The salient findings emerging from the review were as follows:

Despite introduction of *Nav Arjan* drive (2016-17) sundry earnings as percentage of receipts had declined from 4.85 in 2017-18 to 4.22 *per cent* in 2020-21. Also, None Fare Revenue (NFR) which was a small percentage of sundry earnings – declined from 2.35 *per cent* of sundry earnings in 2017-18 to 1.06 *per cent* of sundry earnings in 2020-21. As a percentage of receipts, NFR declined from 0.11 *per cent* in 2017-18 to 0.04 *per cent* in 2020-21. Thus, all the initiatives to enhance sundry earnings and NFR could not achieve the desired results. Indian Railways (IR) established a dedicated NFR Directorate with an aim to introduce and steer the initiatives for enhancement of non-fare revenues. However, through the years, IR kept diluting the scope of NFR Directorate by non-related activities. For implementation of policies, powers were arbitrarily delegated to ZRs at times and arbitrarily withdrawn from ZRs at other times, in various areas. Further, no inputs were taken from ZRs while formulating annual targets. Targets were just thrust upon ZRs without ascertaining the ground reality.

Even the drastically reduced revised estimates could not be achieved at the end of the years. From 2020-21, NFR Directorate initiated a good measure of compiling figures pertaining to NFR at division level for the various sub-items of NFR.

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Major Recommendations

Ministry of Railways may consider to:

- ***Delegate the power of decision making for executing the policies to the Zonal Railway Administration judiciously for their smooth implementation.***
- ***Fix realistic target for generating sundry earnings and monitor achievement of targets by the Zonal Railways.***

- ***Strengthen monitoring and internal control mechanism at apex level for successful implementation of policies besides monitoring realisation of outstanding dues.***
- ***Engage the final consultant itself and direct them to submit their report in a time bound manner which would save time, money and other resources.***
- ***Create widespread awareness about IR's NFR initiatives with a view to maximise the revenue potential.***
- ***Bring in Artificial Intelligence based sources of revenue from the huge database available in various systems available with IR.***

Para 2.1 Construction of Dimapur - Kohima New Line Project: Northeast Frontier Railway

With a view to develop Railway Network in Nagaland, a New Line Project to connect the State Capital Kohima with Dimapur (DMV) was sanctioned by Railway Board in 2006-07. However, the New Line Project was re-aligned between Dhansiri and Zubza near Kohima. The work on the project was started in the year 2016.

Pre-construction survey of the DMV-Kohima New Line Project was completed in 2011. Due to laxity of Railway Administration, Final Location Survey (FLS) of a major part of the Project (60 km.) had to be re-conducted, resulting in infructuous expenditure of ₹ 5.44 crore on the original Pre-construction survey work which had to be abandoned.

Audit noticed several major irregularities in the land acquisition process which led to irregular/infructuous expenditure of ₹ 141.70 crore during the period from 2015 to 2021. These included infructuous/ avoidable expenditure of ₹ 23.34 crore on account of compensation paid for acquisition/procurement of land which was of no use due to revision of the alignment, ₹ 79.70 crore towards acquisition of land made over tunnels, ₹ 12.97 crore on acquisition of excess land, additional compensation of ₹ 6.97 crore paid on account of re-classification/re-survey of acquired land just after two to three years of payment of compensation to the affected land owners and ₹ 18.72 crore paid to the State Government towards establishment charges.

A case of avoidable liability ₹ 879.05 crore was noticed where reluctance to adopt cost cutting measures coupled with excessive provision of facilities in cross-section designs of tunnels led to huge avoidable liability in construction of tunnels. In another case, reversal of decision regarding use of ballasted or ballast less track in tunnels led to avoidable expenditure. Irregularities were also noticed in provision of blanketing, where blanketing material was provided in excess of requirement which led irregular expenditure of ₹ 6.50

crore. It was also noticed that avoidable expenditure of ₹ 7.68 crore was incurred due to procurement of expensive Pakur Ballast instead of procuring local ballast at cheaper rates.

Though the Detailed Estimate for the New Line Project was sanctioned in 2015, progress of the Project was hampered due to initiation of a new FLS work which was completed in 2019. Progress of the Project was also hampered due to land disputes and delays in settling unjustified re-surveyed/reclassified claims. Extensions for completion of work were granted liberally resulting in delay in completion of works coupled with extra payment of ₹ 42.38 crore due to Price Variation. All these factors led to change in the target date for completion of the Project from March 2020 to March 2026.

The audit observations on land acquisition in this Report are few illustrative cases where serious irregularities were noticed. There is a likelihood that such errors of omission and commission, whether in this project or other projects may exist in many more cases. Railway Administration may thoroughly examine the remaining land acquisition cases to rule out existence of such irregularities.

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Major Recommendations

Ministry of Railways may consider:

- ***To ensure that the Pre-Construction Survey/Final Location Survey (FLS) Reports are critically analyzed to detect probable technical/construction lacunae and their comprehensive resolution prior to final acceptance. This would prevent delays affecting progress of the Project and infructuous expenditure on multiple Surveys.***
- ***To strengthen land acquisition mechanism in order to prevent wasteful/avoidable expenditure on account of unnecessary /irregular acquisition of land. Accountability for acquisition of land in violation of codal provisions may be fixed.***
- ***To allow payment of compensation in re-classification/re-survey cases only after proper Joint Verification of claims and provided they fell under the purview of relevant provisions of the Nagaland Land (Requisition & Acquisition) Act, 1965. The issue of irregular additional payment for Re-survey/Re-classification needs to be scrutinized thoroughly and accountability be fixed on concerned officials. It may be ensured that future cases of Re-survey/Re-classification are dealt as per land acquisition rules.***

- *To revisit the proposals related to cross-sections of Tunnels of DMV-Kohima New Line Project and also other upcoming Construction Projects to avoid unnecessary financial liability.*
- *To issue instructions for strict compliance of codal provisions/ rules/orders and ensure timely approval of Designs & Drawings and handing over of sites to Contractors to avoid delay in completion of work and payment of Price Variation to Contractors.*

Para 2.2 Functioning of Special Purpose Vehicles of IRCON International Limited

The Company undertook two tollway projects of NHAI (Shivpuri Guna Tollway project and Bikaner Phalodi Tollway Project) on PPP mode and formed two SPVs to execute these projects. The two SPVs were ISGTL and IPBTL. These projects were assumed financially viable on the basis of a financial model. The NPV of the projects executed by ISGTL and IBPTL was worked out as positive in the financial model. Audit observed that assumptions in the financial model were not proper and realistic. Consequently, on the basis of audit observations, NPV of both the projects turned out to be negative. Thus, both the projects were observed to be unviable. It was seen that the profitability of both the SPVs after commencement of the operations had reduced. Thus, the financial results of the SPVs after commencement of their operations also corroborated the audit observations.

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Major Recommendations

The Company may consider:

Adopting more realistic assumptions in the financial models for such projects.

Para 3.1 Procurement and Utilization of Wagons in Indian Railways

In violation of the Codal provisions Zonal Railways did not participate in the assessment of requirement of wagons or send proposals or justification for acquisition of wagons to Railway Board. In absence of any input from the zones, RB kept on changing requirement of wagons. Available Wagon holding was more than the wagon requirement, as assessed in audit on the basis of Wagon Utilization norm (NTKM), throughout the review period. Supply of wagons by wagon manufacturers was not commensurate with allotment of wagons made by the Railway Board and there were huge delays in supply.

Rakes were cancelled by parties due to non-supply by Railway Administration resulting in loss of potential earnings. There were instances of detention of

rakes in the selected loading and unloading points/terminal yards which resulted in loss of wagon days and their earning capacity. In around 69 *per cent* wagons abnormal delay was noted in connecting the unconnected wagons resulting in loss of earning capacity of wagons for the time taken for connecting those wagons. Moreover, assistance of FOIS was not taken in all zones for connecting those unconnected wagons.

More than 3.30 lakh wagons constituting 41 *per cent* of total were passed locally (without NCO approval) after being repaired at workshops/terminal yards, compromising safety. Analysis of FOIS data for years i.e. 2016-17 to 2020-21 revealed that halt time was close to half of the total travel time and hence the average speed was also close to half of the average speed without halt time.

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Major Recommendations

Indian Railway needs to:

- ***Assess the requirement of wagons and place realistic demands accordingly.***
- ***Monitor production of wagons both by Railway's own workshop as well as private wagon suppliers so that wagons are timely supplied by wagon manufacturers.***
- ***Supply rakes to private parties timely for optimum utilisation of wagons.***
- ***Avoid detention of rakes at different levels like loading/unloading points and terminal yards.***
- ***Effectively utilize FOIS in connecting unconnected wagons.***
- ***Ensure running of trains with only valid BPC.***
- ***Take suitable measures to reduce detention for achieving target of speed of goods train.***

Para 3.2 Centralized import of rolling stock parts: Railway Board

Railway Board floated global tenders for the various parts required for production and maintenance of the Rolling Stocks by Production Units and Zonal Railways such as wheels, axles, etc. Audit noticed that in respect of six tenders finalized by the Railway Board during the period from 2016-17 to 2020-21, cost of wheels and axles consumed and destroyed in testing was included in the total supplies made to the Railways instead of supplying free of charge by the manufactures. This was in contravention to the provisions of the standard specifications of RDSO and led to loss to the tune of ₹ 5.88 crore.

In another case, placing orders for a specification of the axle other than

requirement of the end user resulted in procurement of additional 3,400 units of axles resulting into avoidable expenditure of ₹ 18.01 crore.

During the review of records pertaining to detention of Locos at Diesel Loco Shed/Hubli (UBL) and Diesel Loco Shed/Krishnarajapuram (KJM), it was noticed that in South Western Railway (SWR), 27 Locos were detained for want of Imported Spare Parts during the period from 2016-17 to 2021-22. However, 14 instances of detentions of locos out of 27 instances pertained to Covid-19 pandemic period. Thus, stabling of locomotives (excluding the instances due to COVID-19) led to the loss of earning capacity to an extent of ₹ 8.34 crore.

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Major Recommendations

MoR need to ensure that:

- *The material required for testing are supplied free of charge by the manufacturer in compliance to RDSO's guidelines.*
- *Placing orders for a specification of the axle other than requirement of the end user should be avoided*
- *Stabling of locomotives should be avoided for want of spares.*

Para 4.1 Unplanned construction of Goods shed: Southern Railway

Southern Railway Administration created a Goods Shed at Nilambur Road costing ₹ 5.12 crore without assessing the incoming and outgoing traffic. Audit noted that there was insignificant traffic at the Goods Shed since its commissioning in February 2016.

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Major Recommendations

MoR need to ensure feasibility study before taking up any project particularly with reference to revenue and potential traffic.

Para 4.2 Avoidable contractual liability due to arbitrary offloading of a portion of work from an ongoing contract: East Coast Railway

East Coast Railway Administration in violation of the General Conditions of contract offloaded 20 *per cent* of work from a contract for earthwork in formation, Minor Bridges and other miscellaneous works in the Sambalpur-Talcher doubling project. This has resulted in avoidable contractual liability of ₹ 7.09 crore.

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Major Recommendations

MoR need to ensure proper offloading of an ongoing work strictly as per the General Conditions of Contract.

Para 4.3 Irregular expenditure from Extra Budgetary Resources (Institutional Finance): Northeast Frontier Railway

Northeast Frontier Railway incurred irregular expenditure of ₹ 12.13 crore from Extra Budgetary Resources (Institutional Finance) earmarked for a Doubling Project on Land Development of other Projects, environment-related works and a Golf Course, specifically excluded from the purview of the Fund.

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Major Recommendations

MoR need to ensure that extra budgetary resources (Institutional Finance) earmarked for a particular project should not be used for other work.

Para 4.4 Non-realization of Minimum Annual Guaranteed Payment for land allotted to Rail Land Development Authority for construction of Multi-functional complex at Madurai: Southern Railway

Under the policy of leasing vacant railway land for commercial use, Southern Railway (SR) allotted land at Madurai railway station to Rail Land Development Authority (RLDA) for construction of a Multi-Functional Complex. SR Administration in contravention to Ministry of Railway's instructions failed to realize Minimum Annual Guaranteed Payment of ₹ 8.65 crore from RLDA for the period July 2013 to March 2020.

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Major Recommendations

- ***Zonal Railways need to implement MoR's directives regarding revision of land leasing charges periodically.***
- ***Responsibility needs to be fixed for non-realization of the said amount and non-compliance to the agreements/orders of MoR.***
- ***Recovery notice in this regard to be issued.***

Chapter 1 – Operations and Business Development

Introduction to the Report

An introduction of the audited entities; recoveries made by Ministry/ Department at the instance of Audit; remedial actions taken in response to audit observations made in earliest Reports; summarized position of Action Taken Notes has been elaborated in Volume I (Report No. 25 of 2022) of this Audit Report.

This Audit Report, Volume II comprises results of scrutiny of transactions relating to expenditure, receipts, assets and liabilities of the units under the control of Ministry of Railways (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 were also examined.

This Audit Report contains four Chapters. Chapter 1- Operations & Business Development, Chapter 2-Infrastructure, Chapter 3-Traction & Rolling Stock and Chapter 4- Individual Paragraphs. The Report includes major 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) Sundry revenue in Indian Railways
- (ii) Procurement and Utilization of Wagons in Indian Railways
- (iii) Centralized Import of rolling stock parts

In addition, two long paragraphs; (a) Construction of Dimapur – Kohima New Line Project: Northeast Frontier Railway, and (b) Functioning of Special Purpose Vehicles of IRCON International Limited and four individual paragraphs covering audit findings of respective Zonal Railways are included in this Volume II of the Report. The overall monetary value of Report is ₹ 5800.35 crore.

Chapter 1 includes one Pan India paragraph on ‘Sundry revenue in Indian Railways’ involving money value of ₹ 522.46 crore discussing (i) Efficiency in implementation of policies for augmenting and tapping various sources of sundry revenue; and (ii) Effectiveness in monitoring, implementation of policies for enhancing sundry earnings and presence of adequate internal controls.

1.1 Sundry revenue in Indian Railways

1.1.1 Introduction

In Railways' terminology, sundry revenue¹ are earnings that are generated from non-core operations of railways, i.e., operations other than coaching and freight. Non-Fare Revenue (NFR) of Indian Railways (IR), was initially synonymous with sundry earnings but owing to frequent changes in IR's NFR policy, it was reduced to include only earnings from advertisement, publicity and monetisation of soft assets. The thrust to enhance sundry revenue was also restricted to NFR alone.

While presenting the Railway Budget in February 2010, the then Hon'ble Minister of Railways (MoR) had stated that IR will harness untapped revenue potential from branding/advertising of railway properties to significantly increase earnings. Thereafter, in the Railway Budget 2016-17, the then Hon'ble MoR declared a new strategy to reorganize, restructure and rejuvenate NFR known as *Nav Arjan* (new avenues to earn). The strategy is meant to exploit new resources of revenues so that every asset, tangible/non-tangible gets optimally monetized.

Global comparison: Currently, the sundry revenue in railways is nominal at around five *per cent* of total revenue, whereas many world railway systems generate 10-20 *per cent* of their revenue from non-fare sources. As per the Annual Operating performance of National Railroad Corporation, US (Amtrak) for the year 2021, NFR was close to 30 *per cent* of the operating revenue. **(Annexure 1.1)**

As per NFR policy, IR is planning to leverage the existing land, stations, and land adjoining tracks, besides advertising to generate additional revenues and improve its financial health.

The percentage of sundry earnings was on a declining trend except 2020-21 as shown in **Table 1.1**.

¹ Abstracts "Z" contains list of various sources of sundry earnings.

Table 1.1: The position of sundry earnings and non-fare revenue (NFR)

Sl. No.	Year	Total Receipts (₹ in crore)	Sundry Earnings (₹ in crore)	Percentage of Sundry earnings on Total receipts (Col.4/ Col.3*100)	NFR	Percentage of NFR on Sundry earnings (Col.6/ Col.4*100)	Percentage of NFR on total receipts (Col.6/Col.3 *100)
1	2017-18	178930	8688	4.85	204	2.35	0.11
2	2018-19	190507	6996	3.67	224	3.20	0.12
3	2019-20	189970	5863	3.09	290	4.95	0.15
4	2020-21	140573	5939	4.22	63	1.06	0.04

Source: Abstract Z (Sundry earnings) of respective years.

It can be seen from the above, that NFR which was a miniscule percentage of sundry earnings– declined from 2.35 *per cent* of sundry earnings in 2017-18 to 1.06 *per cent* of sundry earnings in 2020-21. As a percentage of receipts, NFR declined from 0.11 *per cent* in 2017-18 to 0.04 *per cent* in 2020-21. Hence, it appears that the initiatives adopted to enhance sundry earnings and NFR were not productive, as they failed to maximize the revenue potential. Thus, IR's target of reaching the revenue from non-fare sources to 10 *per cent* of the total receipts remained a distant possibility.

To enhance sundry earnings and NFR, IR had appointed Rail India Technical and Economic Service (RITES) as consultant. In 2016, RITES appointed Ernst and Young (E&Y) as consultant following multi-party bidding. E&Y with its specialized service, Marketing and Advertising Risk Services (MARS) was to help identify assets for the purpose of advertising and develop a pricing strategy to evaluate them for advertisers. IR was planning several policy initiatives to increase the NFR of the IR by around ₹ 16,500 crore in the next ten years². E&Y in January 2019 submitted its report on Pan India Value Assessment of IR' Assets for Revenue Enhancement through Advertisements. The detailed analysis carried out by the E&Y on various sources of advertisements over IR assets concluded the Annual Earning Potential (AEP) value of IR as ₹ 1,598.06 crore as shown in **Table 1.2**.

² Press Information Bureau (PIB) bulletin dated 10 January 2017.

Table 1.2: Annual Earning Potential assessed by E&Y

Sl. No.	Asset Category	Earning Potential value (₹ in crore)	Remarks
1	Indian Railways inter connected communication network (IRICN) under the brand name of Railway Display Network (RDN)	1072.75	(i) Interconnected network of screens installed at platforms and main halls. (ii) Subject to infrastructure being installed at the stations by IR
2	Static Assets inside Railway Station (Platforms, Foot Over Bridges (FOBs), Main Halls, Circulating area)	50.01	(i) Not including potential revenue from platforms and main halls as these have been included in IRICN. (ii) Not including potential revenue from circulating areas as they have been clubbed with static assets outside the stations.
3	Static Assets in City (Road Over Bridge (ROB)/ Road Under Bridge (RUB), Level Crossing (LC) gates, Railway Colonies, Workshops)	364.11	(i) Potential Revenue from ROBs/RUBs, circulating area, colonies, crossing gates <i>etc.</i>
4	Mobile Assets	111.19	(i) Vinyl wrapping across categories such as Rajdhani, Shatabdi, Double decker, Superfast, Mail express, Garib Rath and Sub urban trains. (ii) Internal advertising space in Rajdhani, Shatabdi, Double Decker, Garib Rath and Suburban trains.
Total		1,598.06	

Source: Ernst and Young (E&Y) report of January 2019

Pursuant to Hon'ble Railway Minister's budget speech, IR formulated NFR policy and formed (2016) a new Directorate called the Non-Fare Revenue Directorate in the Railway Board (RB) to boost NFR. Working of NFR Directorate was reviewed by the RB after two years and it was observed

that even after creation of NFR Directorate, execution of work remained with Zonal Railways (ZRs) which are organised in functional areas like traffic, commercial *etc.* Decision making was routed through respective Directorates at Board level, which resulted in duplication of work and delayed decisions. Accordingly, it was proposed (November 2017) to merge/modify the NFR Directorate with Tourism and Catering (T&C) Directorate to improve their output and efficiency by synergised and focused decision making in both T&C and NFR areas.

IR announced a number of new policies such as Content on Demand, Unsolicited NFR proposals, Automated Teller Machine (ATM), Out of Home Advertising, Mobile Assets, Rail Display Network, New Innovative NFR Ideas Scheme, *etc.* to enhance sundry earnings (January 2017). The implementation of these policies, however, could not generate desired revenue. As against the total receipts of ₹ 140573 crore, sundry earnings as on 31 March 2021 was ₹ 5939 crore, 4.22 *per cent* of total receipt of IR.

1.1.2 Organisational set up

At the RB level, Member (Operations and Business Development) (O&BD) was responsible for formulating policies on matters of sundry earnings. The responsibilities were further distributed to various Additional Members such as Tourism and Catering and NFR, Commercial, Marketing & Business Development and Information and Technology (IT). Further, Sundry earnings in respect of monetization of surplus land was entrusted to the Directorate of Land and Amenities (L&A) which was headed by Additional Member/L&A under Member Infrastructure.

At the Zonal Railway (ZR) level, the General Manager (GM) was the over all in-Charge responsible for implementation of the policies formulated by the RB. The Principal Chief Commercial Manager (PCCM) and the Principal Chief Engineer (PCE) at the apex level were responsible for the implementation of policies on revenue generation in respect of sundry earnings

At the Divisional level, the Divisional Railway Managers (DRMs) and various Divisional officers under him were responsible for implementation of policies and collection of revenue on implementing the policies framed in connection with sundry earnings.

1.1.3 Audit Objectives

The Audit was conducted to ascertain:

- The efficiency in implementation of policies for augmenting and tapping various sources of sundry revenue;

- The effectiveness in monitoring, implementation of policies for enhancing sundry earnings and presence of adequate internal controls.

1.1.4 Sources of Audit Criteria

The criteria for conducting audit were derived from the policy guidelines, circulars and instructions issued by the RB and ZRs from time to time.

1.1.5 Audit scope, methodology and sample selection

The scope of audit covered the period from 2017-18 to 2020-21. The Audit methodology entailed examination of primary as well as secondary sources. Audit examined records of RB, 32 selected divisions of ZRs, Metro Railway, Banaras Locomotive Works (BLW) and Chittaranjan Locomotive Works (CLW). The sample selected for test check is detailed in **Annexure 1.2**.

1.1.6 Audit findings

1.1.6.1 Target vis-à-vis actual sundry earnings

Railway Board fixes the target for ZRs for sundry earnings at the time of preparation of Railway Budget. The Budget Estimate (BE), Revised Estimate (RE) and Actual Earnings (AE) realized during the year from 2017-18 to 2020-21 is shown in **Table 1.3**.

Table 1.3: Earnings vis-a-vis Budget Estimate for sundry earnings

Sl. No.	Year	Budget Estimate (BE) (₹ in crore)	Revised Estimate (RE) (₹ in crore)	Actual Earning (AE) (₹ in crore)	Percentage of actual earning w.r.t. BE
1	2017-18	14123	14000	8869	63
2	2018-19	20790	9864	6997	34
3	2019-20	11575	9000	5852	51
4	2020-21	11013	5500	5939	54

Source: Budget documents and Abstract Z of respective years.

From the above table, it is observed that the actual earning during 2017-21 was less than the budget estimate. The shortfall ranged between 34 per cent and 63 per cent. Budget Estimates were not prepared in a realistic way or on the basis of actual earnings of previous years.

Scrutiny of records revealed that:

- Inputs from six ZRs³ were not obtained by RB prior to formulation of targets of BE.

³ ECR, ECoR, NCR, NEFR, NWR, SECR

- ii. In three ZRs⁴, proper risk assessments were not made considering the local conditions, before setting targets for items of sundry earnings and for earnings envisaged by NFR directorate.
- iii. In two ZRs⁵, the target received from RB was distributed among the Divisions on the basis of proportionate revenue earned during the previous financial year.
- iv. Annual BE target fixed by the RB was not achieved by 13 ZRs⁶ in all these years. Whereas the same was achieved only during 2019-20 in Central Railway (CR), East Central Railway (ECR) and Western Railway (WR) and during 2017-18 in Northeast Frontier Railway (NEFR).
- v. At RE stage, though the target was lowered, the revised target also could not be achieved by East Coast Railway (ECoR) in these years. The percentage of shortfall ranged between 4.74 and 38.13. While in 14 ZRs⁷ the RE target was not achieved⁸ in three years during review period. In two ZRs (ECR & SWR), the RE target was not achieved in two years during the review period and the percentage of shortfall ranged between 8.18 and 49.01.

Further scrutiny of records relating to actual earnings from NFR sources revealed that the target fixed by RB was not achieved during the review period as shown in the **Table 1.4**.

Table 1.4: Earning from NFR sources vis-à-vis Budget Estimate

Sl. No.	Year	Original Target (BE) (₹ in crore)	Revised Target (RE) (₹ in crore)	Actual Earnings (₹ in crore)	Percentage of shortfall w.r.t. BE
1	2017-18	2000	850	205	90
2	2018-19	1200	450	224	81
3	2019-20	600	501	290	52
4	2020-21	701	150	63	91

Source: Budget documents and Abstract Z of respective years.

Analysis of targets fixed and actual revenue earned by the ZRs revealed the following:

- Annual BE target fixed for Advertisement and Publicity was not achieved by 15 ZRs⁹ in any of the years whereas in NEFR and WR the same was not achieved in three years¹⁰.

⁴ CR, NCR, NEFR

⁵ CR, NCR

⁶ ER, ECoR, NR, NCR, NER, NWR, SCR, SECR, SER, SR, SWR, WCR, MR

⁷ CR, ER, NR, NCR, NER, NEFR, NWR, SR, SCR, SER, SECR, WR, WCR, MR

⁸ Shortfall between 0.33 per cent (SER-2018-19) and 76 per cent (MR-2017-18).

⁹ CR, ER, ECR, ECoR, NR, NCR, NER, NWR, SR, SCR, SER, SECR, SWR, WCR, MR

- At RE stage, though the target was lowered, the same also could not be achieved by 13 ZRs¹¹ in all these four years. The percentage of shortfall ranged between 4.10 (CR in 2019-20) to 99.47 per cent (WCR in 2020-21).
- In four ZRs¹², the RE target was not achieved in three years during review period. The percentage of shortfall ranged between 31 per cent (ECoR in 2017-18) and 92 per cent (ECoR in 2020-21).

The reasons for non-achievement of targets were mainly due to delay in implementation of various NFR policies.

1.1.6.2 Implementation of policies

Railway Budget 2016-17 highlighted that many of the world railway systems generate 10 to 20 per cent of their revenues from non-tariff sources. The budget emphasized to reach this world average by monetising assets and undertaking other revenue yielding activities.

Accordingly, Ministry of Railway (Railway Board) had undertaken several policy initiatives, such as, content on demand, unsolicited proposals, out of home advertising, provision of ATM at stations, etc. to generate revenue from non-fare sources. Test check of 32 divisions across ZRs and five stations of Metro Railway/Kolkata and two Production units¹³ revealed that ₹ 355.71 crore was earned during 2017-21 on implementation of these policies as shown in the **Table 1.5**.

Table 1.5: Status of earnings on account of new NFR policies

Sl. No.	Description of policy	Revenue earned by the selected units (₹ in crore)	Revenue outstanding as of March 2021 (₹ in crore)
1	Content on demand	1.67	0.00
2	Unsolicited NFR proposal	3.16	2.38
3	Provision of ATM facility at station	165.15	10.37
4	Out of Home advertising	86.16	62.04
5	Advertising through mobile asset	49.30	11.31
6	Rail display network	43.09	36.34
7	New, Innovative NFR Ideas Scheme (NINFRIS)	7.18	0.00
	Total	355.71	122.44

Source: Summarised position of Earnings and outstandings of NFR

¹⁰ NEFR-2017-18, 2019-20 and 2020-21, WR-2017-18, 2018-19 and 2020-21

¹¹ CR, ECR, ER, NCR, NER, NWR, SR, SCR, SER, SECR, SWR, WCR and MR

¹² ECoR, NR, NEFR, WR

¹³ Banaras Locomotive Works (BLW) and Chittaranjan Locomotive Works (CLW).

Further scrutiny of records relating to implementation of these policies and their impact on the growth of sundry earnings revealed the following:

1.1.6.3 Contents on Demand (CoD)

In January 2017, RB framed a policy on “Content on Demand (CoD)”. The objective of the policy was to monetize entertainment based services on trains and stations. As per this policy, contracts for CoD were to be awarded by the RailTel for IR and the earning was to be shared in the ratio of 85:15 *per cent* between IR and RailTel.

RailTel floated a tender in July 2017. The tender was, however, discharged (July 2018) due to poor response from the market. Thereafter, RB entrusted (July 2018) the bid process management to the ZRs.

Audit observed that only CR and ECR awarded contracts. The other ZRs could not award contracts due to lack of required expertise in this area. While in ECR, the contract was foreclosed (September 2020), the progress of awarding contracts was insignificant in CR and till February 2022, CoD was provided only in 10 Electrical Multiple Unit (EMU) rakes as against 165 rakes as stipulated in the contract there by realizing revenue of ₹ 1.67 crore.

In view of the above, the process of bid management was re-entrusted to RailTel with 50:50 revenue sharing basis with IR. Accordingly, RailTel awarded a CoD contract in January 2020. As per the Letter of Acceptance (LoA), the bidder was required to deposit ₹ 63 crore *per annum* for 10 years contract period. Till March 2021, only ₹ 13.80 crore was deposited with 15 ZRs¹⁴.

As per CoD policy, initially contracts were to be finalized by the RailTel for all ZRs. However, due to discharge of CoD tender floated by RailTel in July 2018, RB instructed ZRs for initiating the process for awarding contracts at zonal level. As most of the ZRs could not process any contract for CoD, RB again entrusted the bid process management to RailTel (July 2019).

Therefore, due to decision of RB in discontinuing the bid process of RailTel at the initial stage (July 2018) and reverting back to its initial decision delayed finalisation of contracts and less realization of revenue as compared to the projected revenue.

¹⁴ CR, ER, ECR, ECoR, NR, NCR, NER, NEFR, NWR, SR, SCR, SER, SECR, SWR and WCR.

1.1.6.4 Unsolicited proposals

The policy allowed for the consideration of unsolicited proposals¹⁵ by enabling private and public sector participation in the conceptualization of an earnings project or scheme and permitting finalization of the same. Initially, the selection of agency was to be done for a maximum period of five years. If the project/scheme was found to be successful, subsequent selection of agency was to be done through a competitive open tendering process.

Audit observed that out of 27 long term proposals¹⁶ received in 11 ZRs¹⁷, 24 proposals were accepted in 10 ZRs¹⁸. The remaining three proposals did not materialise as one proposal received in SWR was closed due to handing over of Bengaluru station to Indian Railway Station Development Corporation (IRSDC) for station development. One proposal was not accepted in WCR as it was not feasible. In ER, one proposal received in 2020-21 has not yet been accepted due to delay in feasibility study.

During the review period 2017-21, in respect of long term policy, against the anticipated earning of ₹ 5.48 crore, IR earned ₹ 3.10 crore. This resulted in short realisation of ₹ 2.38 crore as of March 2021 due to delay in finalisation of proposals, finalisation of sites, and floating of tenders, etc.

Similarly, six short term proposals¹⁹ were received in two ZRs (ER and SCR) and IR earned only ₹ 0.06 crore.

There was delay in finalisation of the proposals. Further, due to lack of adequate publicity, existence of the new innovative policy was not known to general public/interested parties. This had resulted in poor response to the policy and less generation of additional revenue.

1.1.6.5 Provision of Automated Teller Machine (ATM) facility at Stations

In January 2001, RB decided to permit installation of ATMs by banks in Railway stations and issued broad terms and conditions for the same. Subsequently, RB introduced (2017) a new policy for installation of 2000 ATMs at stations and circulating areas for a period of 10 years to generate

¹⁵ An unsolicited proposal is a written application for a new innovative idea submitted to the Railway for enhancement of non-fare revenue. An existing concept, which is not being covered by any of the existing policy of Railway, will also be considered under this policy.

¹⁶ Long term proposal shall not be more than five years. Time frame for processing selection of the agency under long term proposal is 165 days.

¹⁷ CR, ER, ECR, NR, NCR, SR, SCR, SECR, SWR, WR and WCR.

¹⁸ CR-1, ER-3, ECR-1, NR-2, NCR-1, SR-3, SCR-2, SECR-1, WCR-8 and WR-2.

¹⁹ Short term proposal is one-time proposal only. The maximum term of the activity shall be three months only. Time frame for processing selection of the agency under short term proposal is 23 days.

revenue of over ₹ 2500 crore by the end of contract period. CR was nominated for conducting the tendering process on behalf of other ZRs. No response was, however, received from the bidders on inviting tenders twice by CR.

In the review meeting (June 2018) at RB level with Chief Commercial Managers (CCMs) of ZRs, it was held that increase in use of mobile banking, wallet, Unified Payments Interface (UPI) application like Paytm, BHIM, etc. and Internet Banking had resulted in decrease in usage of ATM in Railway premises. This policy was then withdrawn with the instruction to ZR to permit installation of ATMs by banks in Railway stations as per the instructions issued in 2001.

Test check in 32 divisions across ZRs including Metro Railway (MR) and Railway Production Units (RPU) revealed decrease in number of ATMs from 666 ATMs in 2017 to 614 ATMs in 2021. There was poor response from the bidders for installation of ATMs. During the review period 2017-21, IR earned only ₹ 165.15 crore towards license fee from banks for installation of ATMs and ₹ 10.37 crore was outstanding as of March 2021.

Thus, IR failed in achieving the target for installation of 200 ATMs *per annum*. The present trend of earning from this policy was ₹ 41 crore (16 *per cent*) against ₹ 250 crore *per annum* was far from the target²⁰.

1.1.6.6 Out of Home Advertising (OOH)

In January 2017, RB circulated the policy with the objective to lay out the various conditions in monetizing advertising assets apart from the station area such as circulating areas of class A1 to F category stations, Road Over Bridges (ROB), Road Under Bridges (RUB), level crossing gates, Railway colonies, Railway workshops, Railway production units, Railway land along the tracks, etc.

Accordingly, RITES, in association with the Professional Media Market Evaluation Agency (PMMEA) of the E&Y, prepared 17 different packages for all ZRs for inviting open bids on behalf of ZRs. The Annual Earning Potential (AEP) of these 17 packages was estimated at ₹ 294 crore. Tenders were floated by RITES for these 17 packages in September and November 2017. However, due to poor response from the market, RITES could finalize only one package of ECR.

In view of the delay in implementation of the policy by RITES, RB instructed all ZRs to undertake the tendering process under the policy framework. During the period 2018-19 to 2020-21, various contracts were finalised by the ZRs under the policy.

²⁰ Over ₹ 2500 crore in 10 years.

Test check of relevant records in 32 divisions of 16 ZRs revealed that 271 tenders were finalised during 2017-21. IR earned ₹ 86.16 crore in 28²¹ out of 32 divisions as against the estimated earnings of ₹ 271 crore. The outstanding earnings as of March 2021 stood at ₹ 62.04 crore (in 16 Divisions²² of 13 ZRs).

The reasons for not achieving the targets in respect of 31 Divisions²³ of 16 ZRs were as follows:

- (i) Non-floating of tenders (PRYJ/NCR, LMG/NEFR, SC/SCR, BSB and LJM/NER).
- (ii) No response from bidders (KIR/NEFR, SBC/SWR, LKO/NR, MAS and TVC/SR, KGP/SER).
- (iii) Non-finalisation of tenders/contracts (JHS/NCR, All/NWR, BSP and NGP/SECR, BZA/SCR).
- (iv) Non-granting of permission by the local municipal administration/ Court (DLI/NR, SBC/SWR).
- (v) Non-payment of license fees by the contractor (BB, Pune/CR, HWH/ER, BPL/WCR).
- (vi) Termination of contract (Pune/CR).
- (vii) Reduction in advertisement area after award of contract resulted less earning realisation of ₹ 0.97 crore than expected in four contract (Pune/CR).
- (viii) Grant of relief in payment of license fees due to Covid-19 (DNR and DNB/ECR, JP/NWR, BSP and NGP/SECR, MMCT and ADI/WR, JBP/WCR).
- (ix) Contract awarded at a lower price than the estimated price due to poor business prospect in advertisement sector (KUR/ECOR).

Analysis of the reasons for shortfall in achievement of target revealed that the factors, such as, non-floating of tenders, non-finalisation of tenders, non-identification of locations for OOH advertising *etc.* resulted in shortfall in expected earnings. IR earned ₹ 86.16 crore (32 *per cent*) against the estimated earnings of ₹ 271 crore. There was lack of initiatives on the part of Railways to analyse/identify the reasons for poor response from the bidders and remedial measures thereof.

²¹ CSMT & Pune/CR, HWH & SDAH/ER, DNR/ECR, KUR & WAT/ECOR, DLI & LKO/NR, PRYJ & JHS/NCR, BSB/NER, KIR & LMG/NEFR, JP/NWR, MAS & TVC/SR, SC & BZA/SCR, CKP & KGP/SER, BSP & NGP/SECR, UBL/SWR, BPL & JBP/WCR, MMCT & ADI/WR

²² CSMT/CR, HWH & SDAH/ER, KUR/ECOR, DNR/ECR, LKO/NR, PRYJ/NCR, KIR & LMG/NEFR, JP/NWR, MAS/SR, BZA/SCR, BSP & NGP/SECR, UBL/SWR, MMCT/WR, BPL & JBP/WCR

²³ Overall picture of 31 Divisions of 16 ZRs is given here against each category. In WAT division of ECoR, all dues were recovered, hence not commented.

1.1.6.7 Advertisement through mobile assets

RB introduced this policy in January 2017. The objective of the policy was to facilitate the IR to offer combined train packages consisting of internal and external advertisement. RB appointed RITES, as consultant. RITES, in turn, appointed E&Y²⁴ to identify assets for the purpose of advertising and develop a pricing strategy to evaluate them for advertisers.

In February 2018, RB decided to entrust the bid processing management to ZRs due to delay in awarding of contracts by RITES. During the period 2018-19 to 2020-21²⁵ various contracts were finalised by the ZRs under this policy.

Test check of records revealed that IR earned ₹ 93.25 crore (28.28 per cent) in 14 ZRs²⁶ as against the estimated earnings of ₹ 329.70 crore.

It was further observed that:

- (i) In 27 divisions of 15 ZRs²⁷, 698 trains were identified for advertisements, wherein 96 contracts were finalised for 569 trains and ₹ 49.30 crore was earned as against the estimated earnings of ₹ 60.61 crore. As of March 2021, ₹ 11.31 crore was outstanding mainly due to non-payment of license fees by the contractor.
- (ii) Due to non-receipt of offers for the tenders floated for 178 identified trains in four ZRs (CR-1, NR-162, SECR-8, SR-7), contracts were not finalised. Two selected divisions of NR accounted for the maximum shortfall of 91 per cent (162 trains).
- (iii) No trains were identified in five divisions of four ZRs²⁸.
- (iv) Only two ZRs (CR and NR) accounted for 65 per cent (522) of the total number of trains (797) identified for advertisement.

Thus, non-finalization of contracts for identified trains, non-payment of license fees by the contractors, and short realization of expected earnings due to Covid-19 resulted in non-achievement of earning potential on advertisement through mobile assets as assessed by E&Y. The selection

²⁴ E&Y was required to identify and evaluate the advertisement potential, develop a long-term revenue enhancement strategy, draft a detailed advertisement policy, develop a value assessment model, and carry out the bid management process to realize the additional advertisement revenue.

²⁵ Tendering process at ZR level started from 2018-19 onwards only and hence three years period viz. 2018-19 to 2020-21 was mentioned.

²⁶ Information in respect of the remaining two ZRs (ECR and NCR) were not made available to audit.

²⁷ CR-306, ER-16, ECR-4, ECoR-7, NR-216, NCR-10, NER-5, NEFR-4, NWR-9, SR-15, SCR-4, SER-39, SECR-11, SWR-126, WR-27, WCR-8

²⁸ ECoR-KUR, ECR-DNB, NEFR-KIR, LMG, NER-LJN, SECR-NGP, SWR-UBL, WCR-JBP

of RITES who was not in a position to deliver its appointed works was a failure resulting in selection of another agency.

1.1.6.8 Rail Display Network (RDN)

In July 2017, Ministry of Railways circulated this policy to enable real time flow of information to passengers related to running status of trains and other relevant information like platform numbers, coach guidance, RAC confirmation, etc. RDN was also aimed at unlocking digital advertising potential to generate additional non-fare revenue.

RailTel sought (July 2017) Request for Proposals (RFP) from eligible bidders to Build-Operate-Maintain²⁹ the RDN. The tender was, however, discharged in May 2018 due to poor response from bidders. RB, therefore, delegated (June 2018) full powers to ZRs to award advertising contracts of all kinds on station premises.

In January 2019, E&Y had assessed the annual potential value of ₹ 1072.75 crore for RDN advertisement packages for 2128 stations of different categories. Test check of records in 32 divisions of ZRs pertaining to the period 2017-21 revealed that:

- a) 208 contracts were finalised with projected revenue earning of ₹ 61.50 crore. The revenue actually realised was, however, ₹ 43.09 crore.
- b) While in ECoR, no contract was finalised, only 23 contracts (11 per cent) were finalised in eight ZRs³⁰.
- c) The maximum shortfall in achievement of projected revenue was ₹ 22.43 crore (62 per cent) in CR followed by NR (₹ 3.94 crore; 11 per cent) and SR (₹ 3.61 crore; 10 per cent).

The reasons for shortfall in achievement of target were as follows:

- i. Non-floating of tender (SDAH/ER, LMG and KIR/NEFR, DNB/ECR, WAT and KUR/ECoR, AII/NWR, CKP and KGP/SER).
- ii. Non-identification of sites (SDAH/ER, PRYJ/NCR, AII/NWR).
- iii. Termination of contracts due to non-receipt of license fee and security deposit (PRYJ/NCR, BSP/SECR).
- iv. Lack of response from bidder (TVC/SR, DLI and LKO/NR, BZA/SCR).

²⁹ MoR hereby grants to the Developer the right, permission and authority to construct, operate and maintain the Rail System, excluding the performance of Reserved Services, and the Developer hereby agrees to implement the Project subject to and in accordance with the terms and conditions set forth herein.

³⁰ ER(5), ECR(1), NCR(2), NER(2), NEFR(2), NWR(1), SR(7), WCR(3)

- v. Delay in finalisation of tender (JP/NWR).
- vi. Delay in installation (SBC/SWR).
- vii. Change of policy for bid management process (BPL/WCR, MMCT, ADI/WR).
- viii. Outstanding License fee (BB and Pune /CR, HWH/ER, DNR/ECR, DLI and LKO/NR, BSB and LJN/NER, MAS/SR, BZA/SCR, BSP/SECR, UBL/SWR, JBP/WCR).

Rail Display Network at New Delhi Railway station showing information related with arrival/departure of Trains

Arrivals				Time 13:06			
Train no.	Train Name	ExpA Time	PF No.	कतौ स.	वाहों का नाम	समय	पी.नं.
12485	Nanded SriGangaNagar	Cancelled		12055	दिल्ली-जयपुर शताब्दी एक्सप्रेस	15:20	11
12716	Sachkhand Express	Cancelled		51901	आगरा-दिल्ली पैसंजर	15:40	2
12626	Kerala Express	13:45	4	12442	विलासपुर-राजधानी एक्सप्रेस	15:45	15
12203	Saharsa ASR Garib Rath	Cancelled		12034	काजपुर-शताब्दी एक्सप्रेस	15:50	10
12460	Amritsar New Delhi Exp	Cancelled		22461	श्री शक्ति एक्सप्रेस	रद्द कि गई है	
12441	Bilaspur Rajdhani Exp	14:25	13	14212	आगरा इंटरसिटी एक्सप्रेस	19:50	6
12259	Sealdah Duronto Expres	14:30	9	12958	आजमगढ़-खण्डवा-राजधानी	रद्द कि गई है	
12561	Swatantrata Senani Exp	14:30	14	12628	राजद्विक एक्सप्रेस	रद्द कि गई है	
12349	Bhagalpur Express	15:00	12	12382	पूजा एक्सप्रेस	00:30	16
51901	Agra Delhi Passenger	15:35	2				
12419	Gomti Express	15:55	6				
12401	Magadh Express	16:50	14				

Welcome to New Delhi

पूजा नई दिल्ली रेलवे स्टेशन पर स्वागत है।

Source: Website- Shutterstock.com

Inspections of five stations of each ZRs including Metro Railway were carried out to see whether information related to trains, availability of passenger amenities at stations and other important instructions for the passengers were displayed on TV screens through RDN contracts. Scrutiny of records revealed that in most of the selected Divisions of the ZRs, information related to train services and availability of passenger's amenities at stations was not displayed on RDN screens (**Annexure 1.3**).

Thus, non-floating of tender, non-identification of sites, delay in finalization of tenders for identified stations, non-payment of license fees by the contractors, frequent changes in decision of RB in implementation of policy, etc. resulted in non-achievement of earning potential on advertisement through Rail Display Network as assessed by E&Y.

1.1.6.9 New and Innovative Ideas and Concepts Scheme

In May 2018, RB launched a New, Innovative NFR Ideas Scheme (NINFRIS) to boost new ideas and concepts for enhancing NFR. The scheme provided for full powers to DRMs for executing innovative ideas/concepts on their Division for generation of NFR.

Audit observed that the NINFRIS proposals received by the various ZRs, inter-alia, include the following:

- Display of advertisement in Passenger Reservation System (PRS) Ticket.
- Reverse Osmosis (RO) Water Purification in train coaches.
- Micro smart stay Lounge.
- Mobile application based suburban tracking System.
- Three-Dimensional (3D) product displays for products & Services.
- Advertisement on pay slips.
- Advertisement rights on bottle crushing machines.
- Advertising in EMU rakes through public information system.
- Exhibition at stations.
- Promotion of railway ticketing app (UTS on Mobile).
- Setting up of a mobile food court at railway station.

Test check of records in 32 divisions of ZRs pertaining to the period 2018-21 revealed that:

- I. Out of 400, only 12 proposals were received in NEFR (07) and NWR (05). The number of proposals received by the remaining 14 ZRs ranged between 11 (ECoR) and 65 (CR).
- II. 181 proposals were not executed. In six ZRs³¹, number of proposals not executed ranged between 1 (SER) to 38 (CR). The main reasons for not executing the proposals were cited as- 'Not suitable for sites', 'Party did not turn up', 'EMD not deposited', etc.

Further scrutiny revealed that:

- i. In Pune Division of CR, two proposals³² received during 2020-21 having earning potential of ₹ 0.50 crore per year remained pending with the Engineering Department. This indicates lack of inter-departmental coordination resulting in non-tapping of revenue.

³¹ CR (25), ER (19), ECR (13), NEFR (20), SR (36), SER (11) and SWR (20)

³² Setting up Facilitation of Logistics Services at Pune Goods Shed on 12 July 2020 with proposed License fee of ₹ 40,000 *per annum* for the period of five years and Setting up Pick up point at RTO signal on 5 August 2020 with proposed license fee of ₹ 10,000 *per annum* for the period of five years.

- ii. In Katihar Division of NEFR, Divisional authorities took more than 20 months to process and finalize four proposals. Similarly, proposal for Health ATM finalised in January 2020, but space was not allotted.
- iii. In SER, 11 stations (in Kharagpur and Chakradharpur Division) were identified for setting up of 24x7 convenient stores at the station premises. However, the same could not materialise for want of clarification and guidelines from RB.
- iv. In respect of proposals for wall painting of boundary walls inside Railway colony, SECR (Bilaspur) delayed by one year in finalising the bid. As a result, the bidders did not show interest and the proposal could not materialise. This had resulted in loss of earnings of 1.2 lakh per annum.

However, the above instances indicated the lack of effective and timely initiatives in enhancing sundry revenue. Out of 400 NINFRIS proposals received, only 203 proposals were executed by ZRs.

1.1.6.10 Other sources of sundry earnings

(1) Commercial exploitation of railway's land and building

(a) Earnings from leasing of vacant land

Review of records related to leasing and licensing of plots, land and buildings in the Divisions of ZRs revealed the following:

- (i) Out of 2243 plots, 2050 plots were leased to outside parties. Agreement was not executed in case of 232 leased plots. 193 identified plots of seven ZRs³³ were not given for commercial use.
- (ii) In October 2019, RB identified 37.19 hectare of land in three railway colonies of Pune Division/CR for redevelopment and commercial utilization. Thereafter, no action was taken by the railway administration. In addition, 22 plots of 7,85,200 square metres were identified as surplus land by Pune Division in 2010 and 2016. Commercial exploitation of the land was not done. Similarly, five plot measuring 133.53 acre of land identified by the SECR administration for commercial exploitation remained vacant for the reasons not available on record.
- (iii) In ECR, Engineering Department of Dhanbad identified (May 2020) vacant land/surplus land valuing ₹ 446.52 crore at 21 locations. The land was, however, not commercially exploited.

³³ CR (32), NR (4), NER (20), NWR (14), SCR (1), SECR (8) and WCR (114)

- (iv) In WCR, 84 plots remained vacant during 2017-18 to 2020-21 in Jabalpur Division and no concrete steps were taken by the WCR administration to tap revenue on such plots. In Bhopal Division, 45 vacant plots were identified for commercial use during 2017-18 to 2020-21. Out of which, 15 plots were licensed to outside parties and 30 plots remained vacant resulting in non-realisation of earnings on these plots.
- (v) Out of the total outstanding of ₹ 289.57 crore in 45 cases of 12 ZRs³⁴ and one RPU (BLW) as of 31 March 2021, three ZRs (ER, ECR and SWR) accounted for 58 per cent (₹ 167.74 crore) of the total outstanding.
- (vi) Rail Land Development Authority (RLDA) under the Ministry of Railway (MoR) was set up for the development of railway land for commercial use and generating non-fare revenue. Audit observed that the plots were entrusted to RLDA. These plots were, however, not developed as revealed from the **Table 1.6**.

Table 1.6: Details of plots entrusted to RLDA

Sl. No.	Zonal Railways/ Divisions	Area of plots (in sq. mts) entrusted to RLDA	Entrusted during	Reasons for non-development
1	Mumbai/CR	2,54,063 (07 plots)	Between 2017 and 2021	Not on record
2	PRYJ/NCR	3,000	July 2012	Not on record
3	AII/NWR	84,170 (11 plots)	2013	Not on record
4	Jaipur/NWR	21,680	Entrusted to RLDA in February 2014.	Physical hand over not done due to title dispute.
5	Chennai Division/SR	2,90,661 (10 plots)	2017-18	i. Poor response, ii. Site is falling under Coastal Regulation Zone, iii. Non-deposit of amount in case of repair of quarters etc.

Source: Records of Engineering Department of respective Zones

³⁴ ER, ECoR, ECR, NR, NCR, NER, NEFR, NWR, SECR, SR, SWR, WCR

Scrutiny of records further revealed that in two ZRs (SR and NWR) land handed over to RLDA was developed but Railways' share was realised partially. The total outstanding as of March 2021 stood at ₹ 20.49 crore³⁵.

(b) Earnings from leasing of building

Review of records of buildings leased on rent to outside parties, PSUs and Government offices over selected Divisions of ZRs revealed that an amount of ₹ 23.32 crore remained outstanding as of 31 March 2021 as shown in **Table 1.7**.

Table 1.7: Buildings leased on rent to outside parties, PSUs and Government offices

SI. No.	ZRs	Party	Outstanding amount (₹ in crore)
1	ER	Central Bank	0.72
2		State Bank of India	4.26
3	NR	Rail Mail Service (RMS) Buildings	16.68
4	NCR	Lease for building	0.19
5	NEFR	Various parties	0.85
6	SWR	IRCON	0.14
7	SWR	RailTel	0.34
Total			23.32

Source: Records of Engineering Department of respective Zones

The instances of non-development of land identified for commercial utilisation, cases of outstanding license fees for plots and buildings leased to outside parties and PSUs indicated that there was lack of effective monitoring by ZRs.

(c) Earnings from Retiring Rooms

With a view to provide better passenger amenities to passengers at stations, RB planned (2016) to hand over Retiring Rooms (RRs) and Dormitories to IRCTC phase-wise, except in some stations, which were entrusted for redevelopment to Indian Railway Station Development Corporation (IRSDC).

Test check of earning from RR in 32 selected divisions of ZR revealed a total earning of ₹ 48.17 crore during 2017-21. Audit observed that in eight

³⁵ NWR- ₹ 9.85 crore, SR- ₹ 10.64 crore

ZRs³⁶, RRs were handed over to Indian Railway Catering and Tourism Corporation (IRCTC) for upgradation as shown in **Table 1.8**.

Table 1.8: Zonal Railway-wise position of up-gradation of Retiring Rooms

Sl. No.	Division/ZR	No. of RR handed over to IRCTC	When handed over	Reasons for non-upgradation, if any
1	All division/NER	43	During 2018-21	Not available
2	Sealdah/ ER	4	2017	Not available
3	Patna/ECR	12	July 2019	Not upgraded and utilized.
4	Rajendranagar/ ECR	8	September 2019	Upgraded
5	Delhi/NR	38	Not available	Not available
6	Jaipur/NWR	24	12 RRs in 2018-19 and 12 RRs in 2019-20	Not clear whether upgraded
7	Chakradharpur/ SER	14	2017	Upgraded in 2019
8	Bilaspur Division of SECR,	8	2019-20	Upgraded
9	ADI/WR	13	7 RRs in 2018-19 and 6 RRs in 2019-20	Not available

Source: Records of Commercial Department of respective Zones

It was observed from the above that though the RRs of above ZRs were handed over to IRCTC, delay in renovation and short realisation of railways' share led to shortfall in sundry earnings.

1.1.6.11 Earnings from Parking

IR earned ₹ 613 crore during 2017-21 from Car/scooter parking at Railway premises/stations as shown in **Table 1.9**.

Table 1.9: Target and actual earnings for parking

Sl. No.	Year	Original Target as per Budget Estimate (BE) (₹ in lakh)	Actual Earnings (₹ in lakh)	Percentage shortfall w.r.t. BE
1	2017-18	154	181	-18
2	2018-19	280	212	24
3	2019-20	250	200	20
4	2020-21	272	20	93
Total		956	613	36

Source: Budget documents and Abstract Z of respective years

³⁶ ER, ECR, NR, NCR, NER, NWR, SECR, WR

The above table indicates that original target of receipt of earning from Car/Scooter parking at stations was not achieved during the review period by IR, except in 2017-18. Against the original target of ₹ 956 crore, the actual earning was ₹ 613 crore leaving a shortfall of ₹ 343 crore (36 per cent).

During test check of 460 parking contracts in selected Divisions of ZRs, Audit observed that ₹ 108.10 crore was realized as against accrued license fee of ₹ 132.38 crore leaving an unrealized balance of ₹ 24.28 crore as of March 2021.

1.1.6.12 Earnings from Tourism

Efforts taken by the ZRs for increasing revenue by introducing innovative suggestions and ideas related to tourism and tourist trains were examined in the ZRs which revealed poor response in respect of proposals related to tourism. Audit observed that -

- In ER, an amount of ₹ 30.90 crore was realized under tourism through unsolicited proposals received from IRCTC during the period 2017-18 to 2020-21.
- In SR, proposals for “Vista dome” coaches were sent to RB (August 2019). But the same could not materialize as of March 2021. This led to loss of potential revenue amounting ₹ 0.70 crore as assessed by Audit.
- CR in cooperation with Maharashtra Tourism Development Corporation (MTDC) was running Deccan Odyssey tourist train on a regular basis. During the scrutiny of records in Office of the PCCM, CSMT, Mumbai, it was noticed that an amount of ₹ 4.17 crore was recoverable from MTDC as of September 2021 as shown in **Table 1.10**.

Table 1.10: Amount recoverable from MTDC on CR (₹ in crore)

Sl. No.	Item	Amount
1	15 per cent Mark-up charges	1.53
2	18 per cent penal interest	1.36
3	Extra adjusted registration fees	0.02
4	Difference of haulage charges (From 1 April 2019 to 31 December 2019)	0.83
5	Fixed charges for April-September 2021	0.43
Total		4.17

Source: Records of Commercial Departement of Central Railway

In December 2020, MTDC requested to waive off the above claim of CR administration. The request of MTDC was forwarded to RB (September 2021). No response from RB was received and the amount of

₹ 4.17 crore remained outstanding as of March 2021. In other ZRs, no proposals were received.

1.1.6.13 Earnings received through licensing of Catering Services by IRCTC

In 2017, Railway Board formulated a new catering policy. As per this policy, Indian Railway Catering and Tourism Corporation (IRCTC) was made responsible for catering services through mobile catering units, base kitchens, cell kitchens, refreshment rooms at A1 and A category of stations, Food Plazas, Food Courts, Train Side Vending and Jan Aahars. License fee should be shared between Railways and IRCTC in the ratio of 40:60 in all the cases, except in case of departmentally managed units by IRCTC wherein revenue should be shared in the ratio of 15:85.

Scrutiny of records revealed that 256 mobile units and 283 static units were handed over to IRCTC in 13 ZRs³⁷. Out of the total earning of ₹ 507.79 crore of IRCTC accrued across ZRs³⁸, Railway share was ₹ 194.11 crore. In two³⁹ Zonal Railways, revenue sharing was not made at the rate of 40 *per cent*. In SER, the unrealised figure was obtained from Zonal headquarters, but the same was not available at selected divisions. It also revealed that ₹ 20.52 crore in respect of six ZRs⁴⁰ pertaining to the period 2017-21 remained unrealized till March 2021.

1.1.6.14 Earnings received through catering contracts by Railways

Catering services at static units, except base kitchens, cell kitchens, refreshment rooms at A1 and A category of stations, Food Plazas, Food Courts, Train Side Vending and Jan Ahaars are managed by ZRs. Minimum license fee/minimum reserve price is fixed as 12 *per cent* of the annual sales turnover for the static unit. Annual sales turnover is based on (i) category of station (ii) type of license (iii) number of originating passengers (iv) number of trains stopping (v) duration of stoppage (vi) location of the unit at the station (vii) approximate license fee of a similar type of unit at a similar category of station in proximity.

Test check of earnings in 32 divisions across ZRs revealed that as against ₹ 72.34 crore (license fee fixed as per the contract), license fee of ₹ 58.54 crore was realized during 2017-21. This has resulted in short recovery of license fee of ₹13.81 crore (**Annexure 1.4**). The reasons for shortfall in realization of earnings were:

³⁷ Records were not made available for two selected divisions in ECR, NEFR and SER.

³⁸ Except CR, ECR, NEFR and SER

³⁹ ER and SWR.

⁴⁰ ER- ₹ 7.17 crore, NCR- ₹ 0.47 crore, SR- ₹ 4.86 crore, SER- ₹ 7.18 crore, SECR- ₹ 0.43 crore, WCR- ₹ 0.41 crore.

1. Demand notes were not raised by Railway against the contractors (ER).
2. Contract closed/terminated (ECoR).
3. Pending court cases (SER).
4. Covid-19 (ECoR, NEFR, SECR)
5. No records were made available (NWR)

No action was taken by the ZRs to recover the outstanding amount of ₹ 13.81 crore as of March 2021.

1.1.6.15 Earnings through sale of scrap

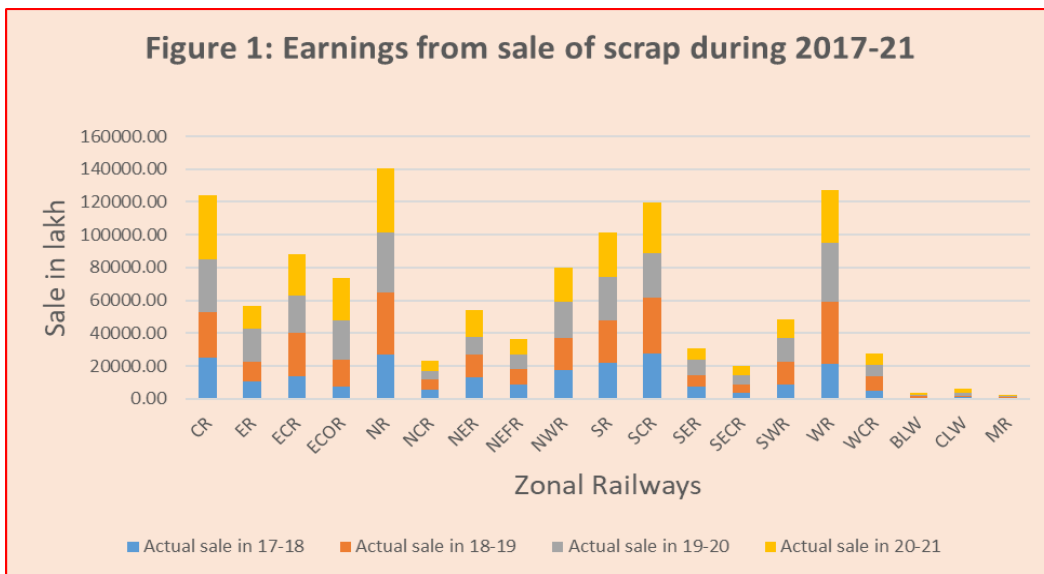
Scrap disposal has been identified as one of the high priority areas in recent years for generating internal resources for supplementing the Railway finances. Ministry of Railways directed all ZRs and Production Units to achieve zero scrap balance by the end of March 2018.

A committee of Senior Administrative Grade (SAG) level officers were constituted to examine all the aspects of scrap disposal as per Budget Speech of 2015-16. Railway Board circulated (January 2016) the recommendations of the committee to all ZRs and PUs for implementation.

Audit observed that IR earned ₹ 11645 crore from the sale of scrap during 2017-21 as against the target of ₹ 11418 crore. Eleven ZRs⁴¹ and two PUs⁴² achieved more than the target. However, shortfall in achieving the target was noticed in five ZRs (NR, NER, SR, SECR and WCR) and one PU (BLW). In these ZRs/PU against the earning target of ₹ 4837.24 crore during 2017-21, only ₹ 3471.86 crore was realised. Maximum shortfall in achievement of target was noticed in SECR (₹ 702.42 crore). Trend of ZRs earnings during the review period 2017-21 is shown below:

⁴¹ CR, ER, ECR, ECoR, NCR, NEFR, NWR, SCR, SER, SWR and WR

⁴² CLW and MR



Source: Records of Store Department of respective Zones

From the above, it can be seen that five ZRs (NCR, NEFR, SER, SECR, and WCR) failed to generate adequate earnings as compared to other ZRs.

1.1.6.16 Earnings from monetisation of Soft Assets

In April 2016, Railway Board circulated to all ZRs, instructions regarding monetisation of soft assets, including generation of revenue from websites through advertisements and web links. Prior to formation of NFR Directorate, revenue was generated by displaying advertisements on *www.indianrail.gov.in*, a site hosted by Centre for Railway Information System (CRIS). In November 2017, NFR directorate had issued a letter to CRIS and IRCTC to increase earnings from advertisements on this web site. This was, however, discontinued due to complaints of reports of display of objectionable/vulgar advertisements.

In September 2019, advertisements on the IR website were again allowed by providing security checks to prevent any display of objectionable/vulgar advertisements. No revenue was generated from IR websites during 2017-18 and 2018-19. Subsequently, it was decided to monetise advertisements in other websites of IR, such as, Indian Railway E-Procurement System (IREPS), National Train Enquiry System (NTES), Unreserved Ticketing System (UTS) etc. NFR was also planned to be generated by way of monetization of digital data available with IR in customer applications and internal applications. After due deliberations by RB with Department of Legal Affairs, Ministry of Law and Justice, RB instructed (June 2021) IRCTC to engage a suitable consultant to examine the holistic scope of monetization of anonymized and aggregated data available with IR.

Audit observed that IR earned ₹ 1.82 crore during 2019-20 by way of advertisement on IR websites as against projected earnings of ₹ 4.10 crore.

1.1.6.17 Earnings from Operation/licensing of Multi-Functional Complexes

Multi-Functional Complex (MFC) provides multiple facilities like shopping, food stalls/ restaurants, Book stalls, PCO Booths, ATMs, Medicines and Variety stores, Budget Hotels, parking spaces and other similar amenities to rail users at Railway stations. Initially, Operation/licensing of MFCs was under the purview of NFR Directorate. Subsequently, it was transferred to Land and Amenities (L&A) Directorate (March 2018).

Audit observed that in seven ZRs⁴³, 32 MFC sites were entrusted to PSUs (RLDA)⁴⁴. 12 MFCs were constructed in four ZRs (ECR-2, NCR-2 SR-4 and SER-4), however, only five MFCs were made operational. IR earned ₹ 10.78 crore (NCR- ₹ 9.33 crore, ECR- ₹ 1.17 crore, SR- ₹ 0.28 crore) from these five MFCs. In respect of remaining four MFCs constructed over SER, MFCs at three stations (Haldia, Ghatsila and Banspani) were lying unutilised as no response was received from any agency after incurring expenditure of ₹ 2.06 crore on construction of these MFCs. At present, MFC at Banspani was being utilised as Running Room as no response was received for operation. Similarly, three MFCs of SR remained unused due to no takers or licensee having backed-out. Work of six MFCs of three ZRs (ECR-4, NCR-1, WR-1) was in progress.

Fourteen other identified MFCs were not constructed in six ZRs (CR-1, ER-2, ECR-1, NCR-1, SR-4, SER-5). The reasons for not constructing MFCs in these ZRs are discussed below:

- i. In CR, space of 1500 sq.m. at Lokmanyatilak Terminus (LTT) was entrusted to RLDA in March 2011 for commercial utilization. This station was subsequently identified for redevelopment under the station redevelopment project. Though the site was de-entrusted in July 2017, an area of 1500 sq.m. remained entrusted with RLDA till March 2021.
- ii. In ER, construction of MFC could not be done by RLDA due to non-availability of required area of land.
- iii. In ECR⁴⁵, the site at Dhanbad was not handed over to RLDA.
- iv. In SER, five MFCs⁴⁶ were deferred by the RB in February 2017 as these would not be commercially viable.

⁴³ CR-1, ER-2, ECR-7, NCR-4, SR-8, SER-9 and WR-1.

⁴⁴ In SER, MFCs constructed by IRCON and RITES.

⁴⁵ In ECR, only one MFC is not constructed, work of other four sites in progress.

⁴⁶ Balasore, Midnapur, Jhargram, Jharsuguda and Tatanagar

1.1.6.18 Earnings from Way Leave Facilities

Way leave facilities/easement rights on Railway land involve occasional or limited use of land by a party for specified purpose like passage, *etc.* without conferring upon the party any right of possession or occupation of the land.

In November 2001, RB issued comprehensive instructions regarding way leave facilities/easement rights on railway land. According to these instructions, Way Leave Charges (WLC), for providing way leave facilities in cases like pipeline crossings, cable crossings, passage/roads for vehicles, *etc.* were to be recovered in advance for a block of ten years after which the next instalment of these charges become due. The advance equivalent to ten years' annual charges was inclusive of annual increase of seven *per cent* of land value. At the time of calculation of WLC for the next ten years, prevailing land rates have to be obtained from the revenue authorities and accordingly the calculation is to be made.

Revenue earned by IR from way leave facilities during the period of review (2017-18 to 2020-21) vis-à-vis the projects in the Budget Estimate and the Actual Earnings is shown in **Table 1.11**.

Table 1.11: Revenue earned by IR from Way Leave Facilities

Sl. No.	Year	Revenue anticipated at Budget Estimate (BE) Stage (₹ in crore)	Actual Earnings (₹ in crore)	Percentage shortfall w.r.t. BE
1	2017-18	738	305	59
2	2018-19	935	393	58
3	2019-20	563	413	27
4	2020-21	468	323	31
Total		2,704	1,434	47

Source: Budget documents and Abstract Z of respective years

The above table indicates that the revenue anticipated at the budget estimate was not earned by IR during the review period from Way Leave Facilities. During the period 2017-21, against the original target of ₹ 2,704 crore, the actual earning was ₹1,434 crore leaving a shortfall of ₹ 1,270 crore (47 *per cent*).

The main reasons for shortfall in earning of WLC were as follows:

- (i) The WLC was calculated taking into account the land value of earlier year than that of the year of the agreement. This had resulted in short realisation of ₹ 1.17 crore (SER).

- (ii) Renewals of the agreements were taken up much later from the due date of next instalments of the charges (NEFR).
- (iii) In 119 cases of three ZRs (CR-60, SECR-15 and SWR-44) the tenure of 10 years elapsed during 2017-18 to 2020-21, but renewal was not done. The reasons for non-renewal in remaining cases were not on record. Non-renewal of these cases resulted in non-realisation of WLC to the tune of ₹ 2.69 crore.

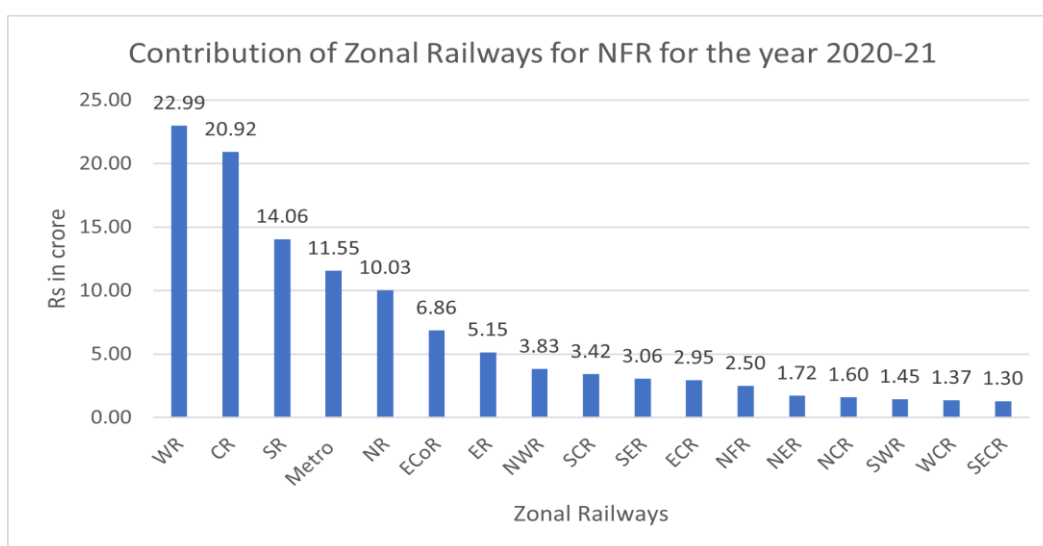
Thus, lack of effective monitoring on the part of ZR administration led to non-finalization of way leave proposals which had resulted in short realisation of WLC.

Monitoring mechanism and internal controls

The successful implementation of a policy/scheme depends on effectiveness of the monitoring mechanism and internal controls in place.

In March 2018, RB had constituted a committee under the chairmanship of Chief Commercial Manager/Southern Railway, to review the policy guidelines/circulars issued from RB with a view to examine and simplify the procedures, suggest procedures of contract management and delegation of powers for handling these contracts at zonal and Divisional levels to enhance potential for sundry other earnings. The committee was required to submit its report within 45 days from the date of its first sitting. In this connection, neither any record notes of discussion nor any recommendations of the Committee could be made available to Audit.

Further, in June 2018 and May 2019, RB introduced a system of monthly reporting of NFR earnings by the ZRs including the earnings on implementation of various policies launched in 2017.



Source: Records of Commercial Department of respective Zones

Scrutiny of records revealed that ZRs did not strictly follow the instructions of RB. On the other hand, the remedial actions taken by the RB in respect of under-performing zones, were not available on record.

Inadequate monitoring of earnings from non-fare activities had resulted in shortfall in achievement of target (Budget Estimate) by the ZRs during 2020-21.

The total earnings was ₹ 91.76 crore (20 per cent) of the budget estimate of ₹ 462 crore. The shortfall in achievement of target by the ZRs ranged between 74 per cent (MR) and 96 per cent (WCR) as shown in **Annexure 1.5**.

1.1.7 Conclusion

Despite introduction of *Nav Arjan* drive (2016-17) sundry earnings as percentage of receipts had declined from 4.85 in 2017-18 to 4.22 per cent in 2020-21. Also, NFR which was a small percentage of sundry earnings – declined from 2.35 per cent of sundry earnings in 2017-18 to 1.06 per cent of sundry earnings in 2020-21. As a percentage of receipts, NFR declined from 0.11 per cent in 2017-18 to 0.04 per cent in 2020-21. From these figures itself it can be inferred that all the initiatives to enhance sundry earnings and NFR could not achieve the desired results.

IR established a dedicated NFR Directorate with an aim to introduce and steer the initiatives for enhancement of non-fare revenues. However, through the years, IR kept diluting the scope of NFR Directorate by non-related activities.

IR wasted useful time and resources in finalization of a Consultant (E&Y) for chalking out road map for enhancing non-fare revenues. Besides, after selection it took almost 3 years from 2016 to 2019 to obtain the Consultant's report.

After a detailed study, the annual earning potential assessed from various sources of advertisements over IR assets was ₹ 1,598.06 crore.

For implementation of policies, powers were arbitrarily delegated to ZRs at times and arbitrarily withdrawn from ZRs at other times, in various areas. Further, no inputs were taken from ZRs while formulating annual targets. In other words, targets were just thrust upon ZRs without ascertaining the ground reality.

Audit noted weaknesses in monitoring mechanism of IR related to non-fare targets. Targets were arbitrarily fixed and were unreasonably high year after year despite the actuals being nowhere close. Even the drastically reduced revised estimates could not be achieved at the end of the years. From 2020-21, NFR Directorate initiated a good measure of compiling

figures pertaining to NFR at division level for the various sub-items of NFR.

1.1.8 Recommendations

Ministry of Railways may consider to:

- *Delegate the power of decision making for executing the policies to the Zonal Railway Administration judiciously for their smooth implementation.*
- *Fix realistic target for generating sundry earnings and monitor achievement of targets by the Zonal Railways.*
- *Strengthen monitoring and internal control mechanism at apex level for successful implementation of policies besides monitoring realisation of outstanding dues.*
- *Engage the final consultant itself and direct them to submit their report in a time bound manner which would save time, money and other resources.*
- *Create widespread awareness about IR's NFR initiatives with a view to maximise the revenue potential.*
- *Bring in Artificial Intelligence based sources of revenue from the huge database available in various systems available with IR.*

The matter was referred to the MoR in June 2022; no reply was received (August 2022).

Chapter 2 - Infrastructure

This Chapter includes two long paragraphs viz. (a) 'Construction of Dimapur– Kohima New Line Project' and (b) 'Functioning of Special Purpose Vehicles of IRCON International Limited' involving money value of ₹ 1100.33 crore. These paragraphs highlight compliance issues relating to Planning including conducting Survey, acquisition of land, Procurement of Stores, Execution of the New Line Project and functioning of Special Purpose Vehicles of IRCON, etc.

2.1 Construction of Dimapur – Kohima New Line Project: Northeast Frontier Railway

2.1.1 Introduction

Nagaland is a land-locked hilly State in the North-Eastern Region of India. One of the biggest impediments in development of the State has been its inadequate transport infrastructure. Road transport is the only means of transport for the common people. The existing Broad Gauge (BG) Railway Line in the entire State is only 11.13 km. The functional railhead connecting Nagaland with the rest of the country is Dimapur, which is on the border with Assam and about 74 km. away from Kohima, the State Capital.

With a view to develop Railway network in Nagaland, a Reconnaissance Engineering-cum-Traffic Survey (RETS) was conducted in 2004 by Northeast Frontier Railway (NEFR) Construction Organization for construction of a new BG Railway line from Dimapur (DMV) to Kohima. The RETS Report was submitted in December 2004 with an estimated Project Cost of ₹ 911.99 crore for 88.40 km up to Zubza Town near Kohima. The Rate of Return (RoR) of the New Line Project was calculated at (-) 26.44 *per cent*. It was proposed to terminate the Railway line at Zubza, which was 23 km⁴⁷ short of Kohima due to the steep terrain from Zubza to Kohima. Accordingly, a New Line Project was sanctioned by Railway Board in 2006-07 at an initial Estimated Cost of ₹ 850 crore. The Project was declared as a National Project in May 2007.

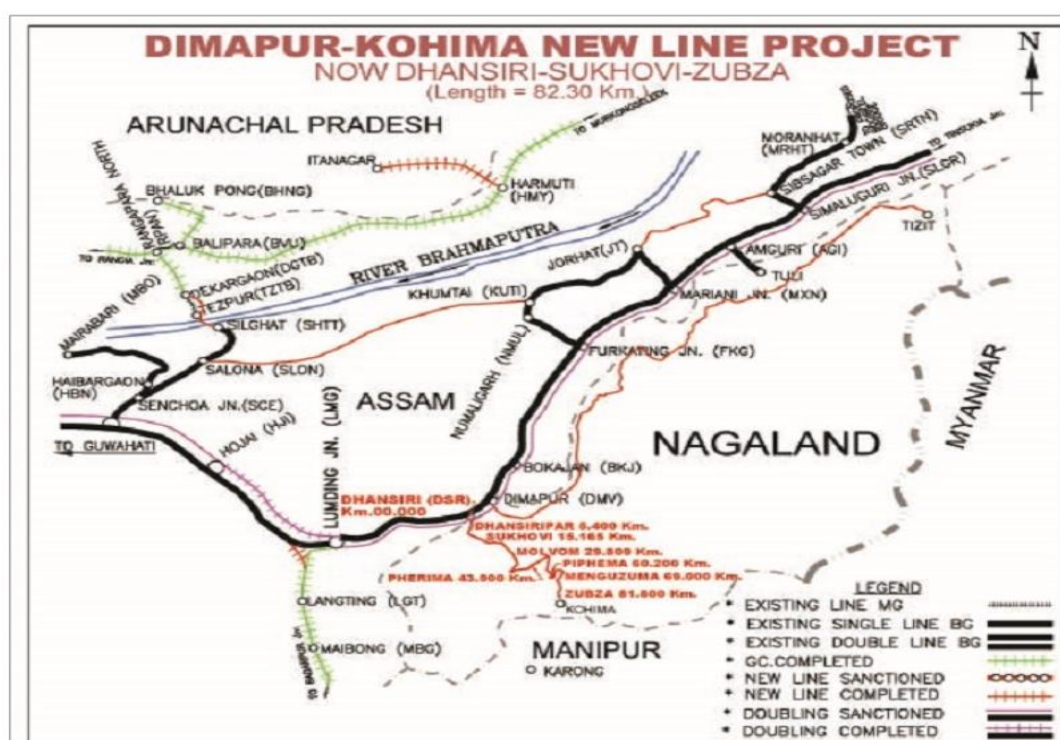
In January 2010, the Government of Nagaland requested Railway Administration for revision of the proposed alignment citing several problems – Reserve Forest and Zoological Park near Dimapur, very high compensation demanded by the farmers and connectivity to the Ganesh Nagar Industrial Area. Subsequently, the take-off of the project was

⁴⁷ As per RETS report of 2004.

changed to Dhansiri, a Railway Station on the BG main line in Karbi-Anglong district of Assam, about 19 km from Dimapur Railway Station.

Detailed Estimate for the New BG Line from Dhansiri – Sukhovi - Zubza was sanctioned by Ministry of Railways (MoR) in August 2015 for ₹ 2309.96 crore. The first revised estimate of the Project sanctioned in May 2022 was for ₹ 6663.20 crore. The month/period of completion of the New Line Project was March 2020 which has since been extended to March 2026. The physical and financial progress of the Project was below 25 per cent as of 31st March 2022.

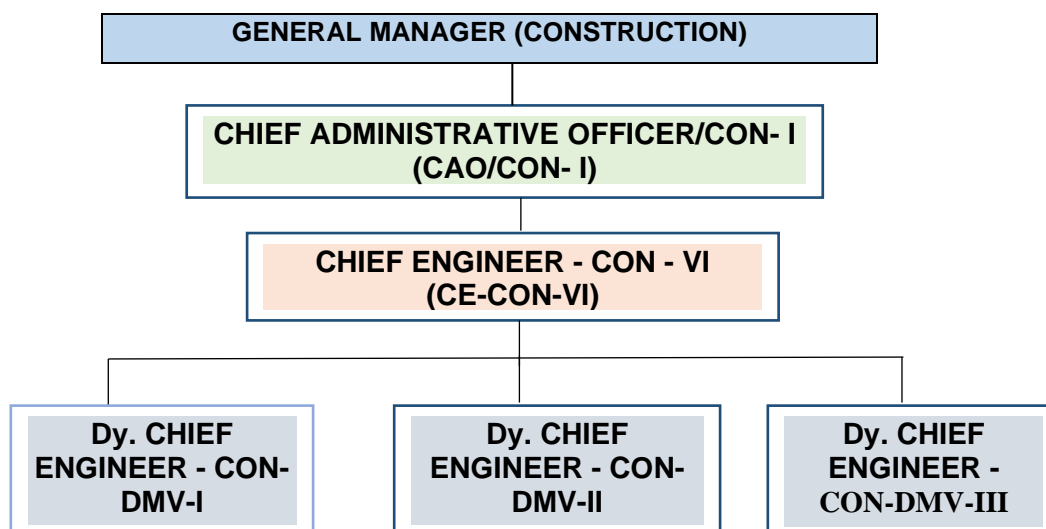
Dimapur to Zubza, now Dhansiri-Sukhovi-Zubza



Source: Records of NEFR (Construction)- brief of all projects as on 31 July 2018

The Chief Administrative Officer/Construction-I (CAO/Con-I) is the overall in-charge of the DMV-KOHIMA New Line Project and is responsible for its proper implementation. CAO/Con-1 reports to General Manager (CON) and is assisted by a Chief Engineer (CE/Con/VI) in Headquarters, Maligaon, & three Dy. Chief Engineers in Field Units— two in Dimapur and one in Lumding- along with Executive Engineers (XENs), Assistant Executive Engineers (AXENs) and other subordinate staff.

Organizational structure



This Audit report is on compliance issues relating to Planning including conducting Survey, acquisition of land, Procurement of Stores and Execution of the New Line Project, etc. The audit findings are discussed below:

2.1.2 Audit Findings

2.1.2.1 Planning

(A) Survey

(i) Infertuous expenditure of ₹ 5.44 crore on Pre-Construction Survey conducted by M/s RITES Ltd.

A Contract Agreement (CA) was awarded to M/s RITES Limited in July 2008 at a total cost of ₹ 6.85 crore for 'Final Location Survey (FLS)⁴⁸ between Dimapur to Zubza (approx. 88.40 km) with Geo-technical investigation and Pre-construction Survey⁴⁹ in connection with construction of new BG Railway line. The due date of completion of the work was 26 September 2009. Railway Administration later decided to delete the items of work related to Final Location Survey and the items related to Pre-Construction Survey were only executed.

Review of records revealed that M/s RITES completed the work at a total cost of ₹ 7.0 crore as per the Terms of Reference (ToR) and handed over Pre-Construction Survey Report to Railway Administration in November

⁴⁸ A Final Location Survey will generally be a post investment decision investigation to prepare working details and to make accurate costing in certain cases.

⁴⁹ Pre-construction Survey/Preliminary Survey consists of a detailed instrumental examination of the route to be selected as a result of the reconnaissance survey in order to estimate the cost of the proposed railway line.

2011. In December 2013, Railway Administration issued a Completion Certificate for the work.

Railway Administration awarded another Contract to M/s Associates Construction Company in May 2010 for the work- 'Conducting Geo-technical & geological investigation, sub-soil investigation for major/minor bridges and tunnels, Land Survey in connection with construction of new BG Line from Dimapur-Kohima' for ₹ 1.99 crore. The work was completed at a total cost of ₹ 2.52 crore.

Due to land acquisition problems and falling of a Zoological Park in the proposed alignment, the originating Station of the New Line Project was shifted from Dimapur to Dhansiri. The changed alignment originating from Dhansiri met the previously finalized alignment (by M/s RITES) which was at about 17 km from Dimapur end. To finalize the new alignment, FLS work was awarded to M/s Pioneer Surveyors from Chainage 0.00 km. to 20.00 km. in July 2012.

In February 2015, Railway Administration requested M/s RITES to suggest corrective measures for certain major anomalies detected in its Pre-Construction Survey Report (from Km. 20.00 to Km. 88.40). In reply, M/s RITES stated that the Final Report for Pre-Construction Survey was handed over to NEFR Administration after incorporating its comments. However, M/s RITES suggested some corrective measures, which were not agreed to by Railway Administration.

Railway Administration finally decided to abandon the Pre-Construction Survey Report of M/s RITES on the ground of difficulty in construction of alignment. While proposing for fresh FLS of the alignment, Railway Administration admitted that the Pre-Construction Survey Report of M/s RITES was not properly reviewed at that time. Railway Administration later awarded another Contract to M/s Ayesa in November 2015 for the work- 'Development of BG Single Railway line alignment from Chainage km. 20 (Dhansiri near Dimapur) up to Zubza near Kohima (approximate length - 60.00 km)' at a cost of ₹ 1.52 crore. The work was completed in November 2019.

Audit observed that even though the Pre-Construction Survey Report for the proposed alignment was submitted in November 2011 by M/s RITES, however, Railway Administration could examine (2015) the Pre-Construction Survey Report after more than three years. Thus, casual approach of Railway Administration to timely scrutinize the Pre-Construction Survey Report led to abandonment of the Report. Also the

Geo-tech Report on the finalized Section was abandoned resulting in infructuous expenditure of ₹ 5.44 crore⁵⁰ (**Annexure 2.1**).

Railway Administration in their reply stated (May 2022) that the alignment of RITES from Km 17.00 to Kohima was reviewed mainly to (i) avoid skirting of slopes which, owing to the geology of the area had the potential of inducing landslides, (ii) avoid sharp curves in Major Bridge portions and (iii) reduce overall alignment in curves by increasing length of tunnels. The decision to review the alignment was also attributed to inexperience of NEFR in construction activities in hilly terrain.

The reply of Railway Administration does not address the audit observation, i.e., failure of Railway Administration to timely review RITES Survey Report which was submitted in November 2011. Further, inordinate delay of about 3.5 years on Railway Administration's part in detecting/raising issues on technical anomalies/construction difficulties with M/s RITES led to abandonment of Survey Report. This, consequently led to infructuous expenditure of ₹ 5.44 crore on account of preparation of survey report by RITES.

As regard inexperience in construction activities in hilly terrain, it is pertinent to mention that the construction activities in adjoining Lumding - Silchar Gauge Conversion Project, which involved similar terrain, were in full swing in 2010 and the railway regularly experienced numerous cases of slope failure in the project. The reply of Railway Administration is vague, hence not tenable.

(B) Acquisition of land

Railway Administration started the land acquisition process for the Project from 2015 and continued post March 2021. Total compensation paid for land and zirat⁵¹ was ₹ 527.36 crore. The land acquisition process was delayed.

Audit noticed several major irregularities in the land acquisition process which led to irregular/infructuous expenditure of ₹ 141.70 crore during the period from 2015 to 2021 are discussed in subsequent paragraphs:

(i) Unjustified haste in acquisition of land led to infructuous expenditure of ₹ 23.34 crore

Pre-Construction Survey of the Project was conducted by M/s RITES and the Final Report was submitted to Railway Administration in November 2011. In 2012, the original alignment of Dimapur-Kohima New Line Project was revised. The take-off point of the New Line Project was

⁵⁰ Calculated proportionately

⁵¹ Zirat: Crops, including trees etc. standing on land.

changed from Dimapur (Nagaland) to Dhansiri (Assam). It was also decided to terminate the New Line alignment in Zubza, a place 18 km⁵² short of Kohima, due the high terrain from Zubza to Kohima.

Scrutiny of land acquisition records revealed that Northeast Frontier Railway Construction Organization (NFRCO) acquired a significant area of land (6161071.34 sq. ft.) for the Project in March 2016 on the alignment recommended by M/s RITES in their Pre-Construction Survey Report (November 2011), though the same was already decided (September 2015) to be improved/replaced by a new alignment and the work was already awarded to M/s Ayesa.

Audit further observed that the land acquired by Railway Administration based on the Pre-Construction Survey Report of M/s RITES did not fall on the revised alignment (as recommended by M/s Ayesa) of DMV-Kohima (now Dhansiri - Zubza) New Line Project. Railway Administration paid compensation of ₹ 23.34 crore for acquisition/procurement of land which was now of no use due to revision of the alignment and ultimately had to be abandoned.

Thus, it was observed that NEFR Administration was fully aware that the work for development of the revised alignment for the New Line Project (LoA issued in September 2015) was already in progress. Railway Administration did not wait for the Report on the proposed revision/up-dation of the alignment and acquired land hastily based on the old RITES Pre-Construction Survey Report (**Annexure 2.2**).

Railway Administration in their reply stated (May 2022) that Land Survey on ground was completed by March 2015. Thereafter, in September 2015, a new Agency, M/s Ayesha was engaged to revise/refine the alignment from Chainage (Ch.) 20 km. to Zubza Yard (82.50 km.). Railway Administration contended that as the alignment in Kohima District did not require any major changes, it was decided to go ahead with land plan already surveyed in March 2015. Accordingly, in January 2016, Railway field authorities requested Deputy Commissioner (DC) Kohima to prepare and submit the estimate for compensation amount towards land acquisition. The land compensation amount of ₹ 23.34 crore was transferred to DC, Kohima on 26 February 2016. Thereafter, Railway Administration approached DC, Kohima, on 29 February 2016 to stop the disbursement of land compensation on the plea that Railway was finalizing a new alignment. However, the land compensation amount of ₹ 23.34 crore was disbursed by State authorities on 26 April 2016.

⁵² As per M/s Ayesa Report of 2019.

Railway Administration also stated that the land thus acquired could be utilized as Dumping Yards for 10 tunnels and one Escape Tunnel.

The reply of Railway Administration is not tenable. The contention that the change in alignment was not expected in the area proposed for acquisition of land was completely misleading and bereft of facts. Railway Administration was fully aware of the need for re-survey/change of the alignment from Ch. 20 km. to Zubza Yard (82.50 km.) which included the area proposed for land acquisition in February 2015 itself. Accordingly, in September 2015, M/s Ayesha was engaged to revise/refine the said alignment. Despite engaging the Agency for revision/refinement of the alignment, Railway Administration did not wait for agency's Report and acted in undue haste in transferring the compensation amount of ₹ 23.34 crore for acquisition of land to DC, Kohima on 26 February 2016.

Further, Railway Administration's contention (May 2022) that the acquired land could be utilized as Dumping Yards for 10 Tunnels and one Escape Tunnel is also not acceptable. As per records, only nine small tunnels, eight tunnels with length of less than one km, were within the new alignment Chainage and not in the old alignment Chainage with acquired land which was abandoned (June 2019). Moreover, for all the nine small tunnels, adequate land was already acquired in portal area to cater to all requirements including dumping of debris. Besides, the debris from T-10 could not be dumped in the abandoned land, as almost the entire area was practically inaccessible for debris from T-10 to be dumped across a ditch/gorge (having depth of approx. 24 mtr. and width approx. 380 mtr.) laying near to the portal of the tunnel.

Thus, acquisition of land for the New Line Project on the alignment already under up-dation/revision (which was ultimately abandoned) indicated gross negligence and failure of NEFR Construction Organization in safeguarding the financial interest of Indian Railways. NEFR may fix accountability on officials involved in taking such a callous/negligent approach towards acquisition of land.

(ii) Irregular expenditure of ₹ 79.70 crore on acquisition of land over Tunnels

Para 819 of Indian Railway Engineering Code, *inter-alia*, states that: 'permanent land' is land which will be required permanently after the Railway is open for traffic and the work of construction is complete. This head includes all land to be occupied by the formation of the permanent line of Railway with side slopes of banks and cuttings, the entrances to tunnels and shafts belonging to them.

Further, instructions issued by Railway Board's letter in September, 2018 stipulate that the following guidelines are to be followed for land acquisition near Tunnels:

- No land acquisition over tunnels, except at the entrances of the tunnels, i.e., for portal and for any adits/shafts which may be required for facilitation of the rate of construction or for provision of safety features.
- In geologically unstable regions, where there are chances of cave-ins during tunneling/excavation and also at locations of lower over burdens land acquisition may be resorted to on a case-to-case basis by Zonal Railways, based on practical considerations.

Northeast Frontier Railway Construction Organization (NFRCO) indiscreetly acquired land situated over/above all Tunnels⁵³ of the Project. It was also noticed that land over most of the Tunnels except Tunnel No. 1, was acquired prior to issue of Railway Board instructions in September, 2018.

Audit observed that even though NFRCO was initially reluctant to acquire the land over Tunnel No. 1, the same was ultimately acquired, primarily based on the request of Chief Secretary, Nagaland. In his letter⁵⁴ addressed to the GM (Con) NEFR, the Chief Secretary, Nagaland cited the example of earlier (February 2016 to November 2018) acquisition of land over ten Tunnels⁵⁵ of the Project and the geological instability of the region. His request for acquisition of the land over Tunnel No: 1 was acceded to and NFRCO acquired the land at a cost of ₹ 5.07 crore in March 2020 . The same was justified stating that the acquisition conformed with (a) Para (ii) of the Railway Board letter of September, 2018 and (b) the request of the Chief Secretary, Nagaland.

Audit scrutiny further revealed that NFRCO initially acquired land over all Tunnels being constructed over the Project, except Tunnel No. 1 for ₹ 74.62 crore. Later 5,99,723 sq. ft. of land over Tunnel No. 1 was also acquired at a cost of ₹ 5.07 crore. Audit did not find any document/record related to land acquisition cases indicating that any study was conducted on the possibility of cave-ins during tunneling/excavations as directed by RB (September 2018)⁵⁶. Final Location Survey Report of M/s Ayesa on the Project indicated the presence of overburden⁵⁷ over all Tunnels of the

⁵³ There are overall nineteen (19) tunnels in the project. However, calculation for acquisition of land over fourteen (14) tunnels has been made by Audit.

⁵⁴ Chief Secretary's, Nagaland D.O. Letter No: CSO/LR/7-141/ACQ-RAILWAYS/2014 (Pt-1) dated 19 December 2019.

⁵⁵ Tunnel nos. 2, 3, 6, 7, 8, 9, 10,17,18 and 19.

⁵⁶ Railway Board's letter no. 2018/W-I/Gen/Land Acquisition/Pt I dated 6 September 2018

⁵⁷ Overburden is the material that lies above an area.

Project and there was no mention of the possibility of cave-ins during tunneling/excavation.

Acquisition of land over Tunnels was in violation of codal provisions and Railway Board's Instructions of September 2018. Thus, Railway Administration's decision to acquire land over fourteen Tunnels in Dhansiri - Zubza New Line Project was irregular which led to avoidable expenditure of ₹ 79.70 crore towards acquisition of land over tunnels (**Annexure 2.3**).

Railway Administration in their reply stated (May 2022) that the land over tunnels was acquired in accordance with Naga Customary Laws and Article 371-A of the Constitution of India and also at the request of the Chief Secretary, Nagaland for acquisition of land over Tunnel No. T-1. It was further stated that a policy/code cannot over-ride Statutory Laws and there was geological instability/possibility of cave-ins in the area. Railway Administration also defended the acquisition of land over tunnels citing 'disturbed area' status of Nagaland and existence of Armed Forces (Special Powers) Act (AFSPA) in the State.

The reply of NEFR Administration is not tenable. Land over all other Tunnels, except Tunnel No. T-1 was acquired by Railway Administration without adhering to existing codal provisions. Railway Administration did not raise any issue with State Authorities in respect of acquisition of land over Tunnels and willingly paid compensation for the same. The issue of Customary Law and Article 371 A was raised only when Railway Board intervened in the matter (2018) and instructed to avoid acquisition of land over Tunnels as per codal provisions. This clearly established that Railway Administration failed to adhere to codal provisions for acquisition of land over Tunnels in earlier cases, which paved the way for raising compensation demand for Tunnel No. T-1.

On prevalence of Armed Forces (Special Powers) Act (AFSPA), disturbance by locals, it is known that each Project has its own challenges which are expected to be dealt locally with active co-operation of State Law & Order Authorities.

Thus, justifications like Customary Law and Article 371-A as well as geological instability & possibility of cave-ins for acquisition of land over Tunnel No. T-1 were clearly an afterthought to defend the acquisition. Had Railway Administration not acquired land over all Tunnels from the beginning of the land acquisition process as per codal provisions, the huge irregular expenditure of ₹ 79.70 crore could have been avoided. Railway Administration may look into it and fix accountability for acquisition of land in violation of codal provisions.

(iii) Avoidable expenditure of ₹ 12.97 crore on acquisition of extra land for line between Stations

As per Para 822 (C) of Railway Engineering Code, 'The minimum width of land to be taken up for a single line should be under ordinary circumstances as shown in the Sections and Tables printed as Appendix III. Para 829 of Code also provides that 'For the line between stations, the general arrangements for land shown in the sections in Appendix III should be followed. For new lines and doublings, the acquisition of agricultural land should be limited to the bare minimum. Area to be acquired need not conform to the arrangement given in Appendix III and the possibility of bringing borrow earth from elsewhere within reasonable distance or by making deeper borrow pits and in special cases even reducing the width of berms on either side of the embankment should be borne in mind'.

Further, as per Para 8.7.3 of Railway Track Engineering, land purchased for construction of Railway Line is generally enough to accommodate slopes, borrow pits/spoil banks and for some margin between the toe of the bank and borrow pits/spoil banks.

Railway Board, in October 2020 directed GM (CON), NEFR to review the land requirement and limit the land width in Block Sections to 3 m from toe of bank to economize the Project.

Review of land acquisition records of the New Line Project, however, revealed that NFRCO acquired land much in excess of the minimum width required for the line between Stations (Block Section). A comparative study of land already acquired with what was actually needed for a single BG Railway Line revealed that NFRCO did not adhere to codal provisions and the land was indiscriminately acquired for the Project. Audit scrutiny further revealed that NFRCO acquired 16,22,815.48 sq. ft. of land in excess of what was actually needed as per prescribed norms. In doing so, NFRCO incurred avoidable expenditure of ₹ 12.97 crore on acquisition of excess land (**Annexure 2.4**).

On this being pointed out by audit, Railway Administration stated (May 2022) that the land was acquired to bare minimum as per the requirement but in some place in small stretches, extra land has been acquired which was essentially required to facilitate the construction of major bridges, tunnel portal, dumping yard and station yard.

Railway Administration remarks were as follows:

(A) Chainage from 18300 meter to 20250 meter

Muck from tunnel cannot be dumped along the same chainage⁵⁸. It was also contended that area could not be used for dumping due to construction of Bridge No. 85 between T- 1 A and T- 1.

Railway Administration's contention is not tenable. As per official records, Tunnel T-1 A starts from Ch. 21020 m to 21160 m and Tunnel T-1 from Ch. 21397 m to 24943 m. There was sufficient acquired land (ditch/valley) between Tunnel T-1 A and Tunnel T-1 for dumping debris from Portal 1 of the Tunnel. Physical evidence (picture below) clearly shows/proves that the debris from Portal 1(P-1) was being dumped in the valley/ditch adjacent to portal P-1 which contradicts the claim of Railway Administration about necessity of increased width of land between Ch. 18300 m to 20250 m to accommodate debris from Tunnel No. 1.

Portal P1 of Tunnel No. 1- Deposition of tunnel muck in ditch besides Portal P1



Source: Picture captured by Audit on 29 October 2021 (1100 hours) of Portal P1 of Tunnel No. 1 of Dimapur-Kohima New line Project

(B) Chainage from 38350 meter to 39150 meter

Railway Administration stated that extra width was taken to dump muck from Tunnel T-4, as dumping outside railway boundary will create social and environmental problems.

As per official records, sufficient land was acquired between Portal 1 (starting from Ch. 39843 m) of T- 4 and Ch. 39150 m, including a 200m x 200 m plot of land, which was more than sufficient for dumping

⁵⁸ Here Chainage (Ch.) denotes the distance of the location on the proposed New Line alignment from the Originating Point/Station (Dhansiri). The reference distance of the Originating Point/Station (Dhansiri) has been taken as 0 meter.

debris. There was absolutely no need to acquire the wide strip of land between Ch. 38350 m and 39150 m.

(C) Chainage from 43050 meter to 43300 meter

This Chainage falls in the location of Major Bridge No. 154 (Ch. 42695 to 43264). It is normal practice to acquire land of 50 m width on both sides of the center line of alignment of a Major Bridge. It was also stated that major/important bridge approaches are provided with minimum 50 m width for future repair and inspection.

Railway Administration reply is not tenable, as there is no extant/codal provision for acquisition of land over/along Major Bridges. Thus, acquisition merely based on 'normal practice' cannot be justified.

(D) Chainage from 73200 meter to 73600 meter

This stretch of land falls under Portal 2 of T-15 and generally, a Portal requires extra land for excavation and dumping of debris.

As per records, T-15 is a very small Tunnel⁵⁹ (Length: 160 m) and not much land was required for dumping debris. The stretch of land under consideration was 400 m long (Ch. 73200 to 73600) and only 20 m of this stretch (Ch. 73200 to 73220) falls inside T-15. In this regard 44000 sq. m of land was acquired, whereas the requirement was only 20164 sq. m. Moreover, a ditch existed between Ch. 73260 and 73280, which could be used for dumping debris of T-15. Thus, extra land of 23836 sq. m. was acquired unnecessarily, in violation of extant Rules for land acquisition.

(E) Chainage from 73600 meter to 73800 meter

As per Railway Administration reply, this stretch of land falls under A1 of Major Bridge No: 187, which required extra width.

Railway Administration reply is not tenable. As per official records, A1 of Major Bridge No:187 falls at Ch. 73910, which is more than 100 m away from the chainage (Ch.73800) up to which extra width of land was acquired. Moreover, to cater to the need for extra land at A1, a 120 m long and 100 m wide strip of land was already acquired.

Thus, non-adherence to extant provisions for acquisition of land for line between Stations (Block Section) led to avoidable expenditure of ₹ 12.97 crore. Reasons for acquisition of extra land may be investigated by Railway Administration and accountability fixed for the same. Steps may be taken to avoid such irregularities in future.

⁵⁹ Chainage of T-15 (including Portal) is from 73060 to 73220 i.e., 160 m long.

(iv) Irregular payment of compensation of ₹ 6.97 crore on Re-survey/re-classification of land

The Nagaland Land (Requisition & Acquisition) Act, 1965 deals with land acquisition cases and other related activities in the State.

Para 7(1) of the Act deals with the methodology where interested persons can appear personally or send duly authorized Agent before the Collector and state the nature of their respective interests in the land and the amount and particulars of their claim to compensation for such interests. Para 11 of the Act deals with the methodology of award of compensation which, *inter-alia*, provides that payment of such compensation may be agreed upon in writing between such persons and the Collector or in the absence of an Agreement, reasonable compensation in respect of:

- (a) requisition of such land; and
- (b) damage done during the period of requisition of such land.

Audit scrutiny of land acquisition cases related to Dimapur - Zubza New Line Project revealed that in two cases, Railway Administration paid additional compensation of ₹ 6.97 crore on account of re-classification/ re-survey of acquired land just after two to three years of payment of compensation to the affected land owners.

In both cases, re-survey/re-classification was done by the State Administration and no Joint Re-survey/Re-classification Report was found on record. Audit noticed that in one case, revised Estimates, along with Calculation Sheets for assessment of compensation on re-surveyed/re-classified land were forwarded by the District Administration to Railway authorities with only the signature of DC, Dimapur i.e., without joint signatures of Railway officials. When the issue of absence of joint signatures of State and Railway Officials on the Calculation Sheets and revised/additional Estimates of compensation was flagged by Associated Finance, the same were re-submitted with signatures of Railway officials on Xerox copies of original Calculation Sheets.

Audit found that compensation of ₹ 1.12 crore was also paid for Fish Ponds, which were non-existent during the original Survey, on the basis of re-survey of the land. Review further revealed that Dy. CE (Con), DMV, vide letter⁶⁰ addressed to DC, Dimapur stated that the Land Survey and Zirat⁶¹ Survey from Dhansiripar Village to Chumukedima were conducted along with District officials from the Land Record & Survey Department,

⁶⁰ Letter No: W/207/DMV/2014/19 dated 16 December 2014

⁶¹ Zirat: Crops, including trees, etc., standing on the land.

Gaon Buras, Village Chiefs and Villagers. There was nothing on record to show that DC, Dimapur, ever replied/contradicted Dy. CE (Con), DMV letter regarding Joint Land Survey/Zirat Survey with officials of relevant Departments (Land, Fisheries, etc.) and other relevant persons/entities (Gaon Buras, Village Chiefs and Villagers).

Thus, failure of Railway Administration to contest the compensation claims, based on irregular re-survey and in violation of Rules thereof, was questionable. Railway Administration decision to pay additional compensation on account of re-survey/re-classification of land was unjustified which led to irregular payment of ₹ 6.97 crore (**Annexure 2.5**).

In reply, Railway Administration stated (May 2022) that the land classification was done by the District Administration and not by Railways. Land Acquisition in Dimapur District from 2.8 km to 18.3 km started on 6 August 2014 and compensation was paid in March 2015. Later in February 2017, an amount of ₹ 2.66 crore was paid to affected land owners, comprising mainly of House, Fisheries and few plantations which were left in the main estimate, as officials from Fisheries Department and Public Works Department (PWD) were not available when the estimate was finalized.

All the fisheries were jointly surveyed by the CEO, Fisheries Department and XEN/CON/DMV on 15 October 2015 and the estimate was prepared by Fisheries Department. Houses and other left-out property were subsequently jointly surveyed on different dates as per convenience of State officials and Railway officials. State authorities were requested to furnish copies of Joint Re-survey/Re-classification Reports. Therefore, it can be seen from the above that there was no irregular payment regarding Re-Survey/Re-Classification of land.

Railway Administration reply is not tenable. As per available records, it was clear that in some cases, Joint Verification for Re-survey/Re-classification were not conducted. Contention of non-payment of compensation of left-out property and Fishery cases was not acceptable, as the issue of absence of officials and non-payment for property was neither raised by beneficiaries nor officials during Original Survey or when compensation was received by beneficiaries. It was clear that compensation payment for Re-survey/Re-classification was an afterthought and not based on facts or as per the Nagaland Land (Requisition & Acquisition) Act, 1965. Thus, the decision of Railway Administration to pay additional compensation without following Rules on the plea that Court proceedings were long and time consuming, was unjustified.

The issue of irregular additional payment for Re-survey/Re-classification needs to be scrutinized thoroughly and accountability be fixed on concerned officials. It may be ensured that future cases of Re-survey/Re-classification are dealt as per land acquisition rules.

(v) Irregular Payment of Establishment Charges of ₹ 18.72 crore on Land Compensation Cost

As per Para 853 of Indian Railway Engineering Code: 'The State Government is entitled, under Article 258 of the Constitution of India, to the re-imbusement of extra expenditure actually incurred over the Land Acquisition staff and contingencies for the work of acquisition for the Central Government. A reasonable charge, calculated on percentage basis, would be justified if the amount of such extra cost cannot be arrived at otherwise. Cost of litigation arising out of Collector's award also will be borne by the Railways'. Further, Para 854 of Indian Railway Engineering Code provides that the entire cost of any special establishment which may be entertained under Government Orders for acquisition purposes is included in the cost of land whether incurred by Civil or Railway Disbursing Offices.

Scrutiny of records related to acquisition of land for Dimapur-Zubza New Line Project revealed that:

- (A)** State Government (Nagaland) levied Establishment Charges/Cost at the rate of 8 *per cent* on total land acquisition cost/amount. The Establishment Cost at the rate of 8 *per cent* had two separate components viz. (i) expenses as State Revenue at the rate of 4 *per cent* and (ii) expenses for Technical Survey and preparation of Departmental Estimates at the rate of 4 *per cent*.
- (B)** Total payment made (inclusive of 4 *per cent* State Revenue) to Nagaland State Land Acquisition authorities by Railway Administration on acquisition of land for the Dimapur-Zubza New Line Project was ₹ 486.73 crore.

Audit observed that in land acquisition cases, codal provision authorized the State Government to levy Establishment Charges/Cost to be incurred on Land Acquisition staff and any special establishment contingencies for the work of acquisition for the Central Government. Levy of Establishment Charges/Cost, on subjects/matters other than that mentioned above viz. State Revenue, clearly violate codal provisions thereon. Railway Administration's failure to identify and object to the unfair levy/demand of Establishment Charges (as State Revenue) at the rate of 4 *per cent* by the State Government led to irregular payment of ₹ 18.72 crore **(Annexure 2.6)**.

On this being pointed out by Audit, Railway Administration stated (May 2022) that the matter was taken up with State authorities and after obtaining their views, further required steps would be initiated for return of the amount levied as State Revenue.

Railway Administration needs to take appropriate steps in this regard and pursue the matter with the State Government to return the amount of ₹ 18.72 crore levied as State Revenue.

(C) Design and Drawings

Indian Railway Code for the Engineering Department and extant instructions of the Ministry of Railways (Railway Board) envisage that Contracts should not be awarded unless all Plans, Drawings and Estimates are approved/sanctioned by the competent authority. Extant provisions also envisage that due care should be exercised in conducting necessary soil and site investigations before finalization of Design & Drawings.

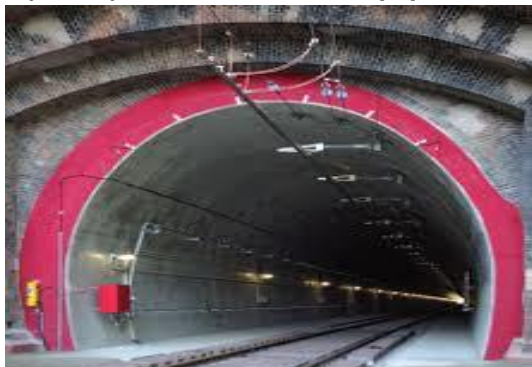
Anomalies related to Design & Drawings are discussed in subsequent Paragraphs.

(1) Avoidable liability of ₹ 879.05 crore due to injudiciously proposed cross-section of Tunnels

As per Paras 3.1 and 3.3 of Chapter 6 of Handbook on Railway Tunnels, shape and dimension of the cross-section of a Tunnel are determined by several factors, like required dimensional/clearance profile, additional space requirements for operating and safety equipment, drainage requirements, requirements arising from safety and rescue viewpoints, etc. Economic consideration is also an important factor in determining the dimension of the cross-section of a Tunnel.

One factor affecting determination of a tunnel cross-section is additional space required for operating equipment. In Tunnels with provision for 25 KVA Electric Traction power supply, Over Head Equipment (OHE) is one such operating equipment required to be provided. There are two types of Over Head Equipment namely, fixed OHE [also called Rigid Overhead Conductor Rail System (ROCS)] and flexible OHE. ROCS has many advantages like less requirement of overhead tunnel space, less maintenance cost etc. over flexible OHE.

Rigid Overhead Conductor Rail System (ROCS)/ Fixed Over Head Equipment



Source: RDSO's instruction No. TI/IN/0041

Flexible Over Head Equipment



Source: Indian Railway Green Energy Initiatives (irgreenri.gov.in)

Another factor affecting determination of a Tunnel cross-section is space required for provision of rescue pathways/walkways along the track inside the Tunnel. As per European Regulations (2014), walkway of minimum width of 0.80 m has to be provided on at least one side of tunnels (catering to single track) having length more than 500 m. Swedish Regulations provide for walkways of 1.20 m width for tunnels of more than 500 m in length. Further, Chief Commissioner of Railway Safety (CCRS) in May 2020, advised Railway Board to consider providing ROCS instead of flexible OHE in new tunnels in view of its operational as well as economic benefits due to less requirement of head space. This could lead to savings of about 9 *per cent* in construction cost and overall savings of about 25 *per cent* of the total cost of the tunnel.

Review of proposed cross-sections of Tunnels being constructed (T-6 to T-19) in DMV-KOHIMA New Line Project revealed that:

- (i) The Tunnels had provision for flexible Over Head Equipment (OHE).
- (ii) Walkways of 1.20 mtr width were provided on both sides of the track.
- (iii) All Tunnels had provision of Ballastless Track (BLT) of 3.10 mtr width.
- (iv) Drainage with dimensions more than the requirement (as per Hydrological Study) was provided in cross-sections of all Tunnels.
- (v) All the above-mentioned facilities/equipment were provided in all Tunnels, irrespective of their length.

Review further revealed that Railway Board while scrutinizing the 1st Revised Estimate for the Project asked (April 2021) NEFR Administration to clarify the type of OHE (fixed or flexible) provided in the Tunnels as it would affect the size and cost of a Tunnel.

NEFR Administration in their reply (June 2021) stated that the reduction of height due to adoption of fixed type OHE structure do not influence the

overall tunnel profile. The overall dimension of tunnel profile adopted will remain same for both the cases; hence, there is no reduction in the cost of the tunnel due to adoption of fixed type OHE in the tunnel.

Audit observed that NEFR Administration did not take cognizance of the advice of CCRS for provision of ROCS instead of flexible OHE in the tunnels. Audit further noticed that the pathways of the maximum width inside tunnels were provided even though the projected passengers traffic for the section was negligible. Also, the drainage of more than the required dimensions was provided to cater to unforeseen situations of large amount of water entering the tunnels.

Thus, NEFR Administration's reluctance/refusal to provide fixed OHE which was recommended by CCRS and unnecessary provision of facilities in the tunnels led to anticipated avoidable liability of ₹ 216.75 crore and overall liability of ₹ 879.05 crore on proposed construction of 14 tunnels of the Project (**Annexure 2.7**).

Railway Administration in their reply stated (May 2022) that Dimensioning of tunnel profile is based on the following main requirements but not limited to:

Functional Requirement as per Indian Railway Schedule of Dimensions (IRSOD):

As per Diagram No: 1A (Modified) of Indian Railway Schedule of Dimensions (IRSOD), applicable to tunnels and bridges, height of fixed structures above Rail level for 25 KV AC is 5870 mm. 650 mm depth below Rail level is required to accommodate track structure. Therefore, minimum clear height of fixed structure from crown to tunnel floor comes to 6520 mm.

Safety and other emergency requirement:

Safety issues for self-evacuation during emergency, i.e., Escape Walkway width, Electrical and Mechanical (E&M) i.e., ventilation requirements, fire safety and mitigation issues i.e., spread of fire and smoke, signages & CCTV fixtures, etc., play an important factor in tunnel profile.

Structural Design Requirement:

Horseshoe shape for the tunnel was adopted for the Project, duly optimizing the cross-section area. It automatically accommodates even Flexible OHE requirement. Therefore, even if we go for the ROCS, it would hardly be possible to reduce the cross-sectional area of the tunnel.

It is clear that the cross-section is not governed by OHE height/type but by other requirements such as E&M equipment, Walkway width and most importantly, the Fixed structure envelope. Statement VII made for

comparison had used data from Delhi Metro Rail Corporation (DMRC). DMRC tunnel shape is circular whereas in this Project it was horseshoe shaped as explained above. Therefore, the comparison is not realistic as the tunnels shapes were different and used for different Railway systems.

During the Exit Conference, Railway Administration stated that till date (June 2022), there were no instructions from Railway Board for adoption of Rigid OHE installation.

The reply of Railway Administration was not tenable in view of the following observations:

(a) Non-provision of Rigid Overhead Conductor Rail System (ROCS)

Audit contention in favor of provision of Rigid Overhead Conductor Rail System (ROCS) instead of flexible Over Head Equipment (OHE) was primarily based on the following considerations:

(i) Less Construction Cost

Provision of Rigid Overhead Conductor Rail System (ROCS) definitely requires less vertical clearance as it can be easily fitted in the crown of the tunnel with minimum length of fixed equipment/fixtures. As far as IRSOD is concerned, this is not sacrosanct and is amendable.

Further, while recommending for provision of ROCS in tunnels, Chief Commissioner of Railway Safety (CCRS), who is the highest authority on Railway safety having sound knowledge of different aspects of IRSOD and with competence for waiver of Schedule of Dimensions (SOD), must have given due cognizance of this aspect. Literature available on the Internet also clearly favors ROCS over flexible OHE in tunnels due to requirement of less vertical clearance and consequent savings in construction cost.

(ii) Maintenance benefits including huge recurring savings

Provision of ROCS in tunnels instead of flexible OHE is hugely advantageous due to the following reasons:

Easy Operation and Maintenance

As the contact wire allows more wear and its installation/replacing is easy in rigid catenary system, maintenance cost is greatly reduced. Periodical control of current bar profile connectors and tightening/cleaning of isolators are the only maintenance operations to be conducted.

No risk of breaking-off, more security

As there is no traction stress, it allows more contact wire wear without risk of breaking-off in rigid catenary system (ROCS).

More current carrying capability

Besides these maintenance benefits, the most significant benefit of ROCS is that of huge savings in Maintenance Costs as pointed out by audit. Most importantly, provision of the type of Overhead Equipment system is primarily concerned with the Electrical Department (Open Line & Construction) which is the end user, and its opinion is of paramount importance. As per available records, no correspondences/consultations were made with the Electrical Department in this regard.

Railway Administration's contention that there were no instructions from Railway Board for adoption of rigid OHE installation, was not tenable. Guidelines for provision of ROCS for Tunnels were issued by RDSO in September 2020, but the same were not implemented/provided by Railway Administration while designing the cross-section of Tunnels.

Thus, NEFR Administration (i) did not give due cognizance to the advice of Chief Commissioner of Railway Safety, (ii) did not implement the guidelines issued by RDSO and (iii) did not seek advice of the User Department for provision of ROCS, etc. which resulted in financial burden/liability to Railway.

(b) Disproportionate/excess provision of Walkway width

Railway Administration in their reply did not give reasons for excess provision of width of pathways, size of drainage, etc. However, during the Exit Conference, Railway Administration stated that optimum width of pathways (1.20 mtr) was provided as per provisions of UIC-779-9. It was required for safe movement in tunnels during regular maintenance and evacuation, in case of emergencies. Therefore, it was required in all tunnels irrespective of their length.

Regarding pathways inside tunnels, the maximum width as per the international norm was provided ignoring the fact that the projected passenger traffic for the section was negligible with bleak prospects for its future increase. In case of emergency/accident, the full width of walkways (1.2 mtr) would be available to passengers, besides additional space of 0.115 mtr (maintenance reserve) on either side, which extended the walkways to 1.315 mtr width on each side. It clearly indicated that provision of walkways with 1.20 mtr width on both sides of the track in tunnels was more than that actually required even after considering safety aspects.

Moreover, NEFR Administration applied same parameters (width) for provision of walkways in tunnels having length less than 500 mtr (in one case walkway was provided even for tunnel of 80 mtr length) as provided for tunnels having length of more than 500 mtr. This was in violation of EU

guidelines which were being followed by the Railway Administration. Further, the space beside the Ballastless Track provided inside the tunnels could also be used as Escape Pathways in case of emergency, thus obviating the need for providing Pathways of maximum dimension. Moreover, safety tunnels are provided in all tunnels of more than 3 km with cross passages at 500 mtr intervals which greatly enhances the safety of passengers in case of emergency.

Keeping all these aspects in mind, provision of Footpath/Walkways of maximum width was not judicious as it had a significant escalating impact on the cross-section of the tunnel and consequent huge financial implication.

Audit has made cost comparisons based on data available in CCRS recommendations which cannot be overlooked. Railway Administration may examine the macro-aspects of Audit suggestions, CCRS recommendations and also seek opinion of the end user without going into micro-aspects of the case. This can lead to huge financial savings towards construction and maintenance of all future Projects not only in NEFR but in other Zonal Railways too.

(2) Inconsistency in planning for tunnel construction led to avoidable expenditure of ₹ 6.14 crore

CA No. CON/DMV-KOHIMA/2331 dated 16 March 2017 was executed with ABCI Infrastructures Private Limited in March 2017 for the work - 'Construction of three Single Line BG Tunnel (approx. length: 3960 RM⁶²) in between Stations Sukhovi and Molvom in connection with DMV-KOHIMA New Line Project' at a total cost of ₹ 321.59 crore.

Review of records revealed that at first, the cross-section area of the Tunnels was approved with provision of ballastless track, which had lesser cross-sectional area. Later, considering maintenance problems of ballastless track, Railway Administration decided (March 2018) to construct the Tunnel with ballasted track and making provision for future track maintenance with Ballast Cleaning Machine (BCM). This change in scope from ballastless to ballasted track resulted in increase of the cross-section area of Tunnels No: T-1A, T-2 & T-3, as ballasted track required more horizontal space (width) than the ballastless one. As Tunnel No: T-1 already had sufficient cross-section area, there was no need to change the same. However, increase in the cross-section area of the Tunnels (T-1A, T-2 & T-3) resulted in increase in cost of the Tunnels by about 7.2 *per cent* of the Original Cost.

⁶² RM – Running Meter.

In 2020, Railway Administration proposed to provide ballastless tracks in all Tunnels of the Project (including T-1, T-1A, T-2, T-3) based on recommendations of the Study Team on Tunnels. The proposal was conveyed to Railway Board through Revised Estimate 1 (RE-1) for the Dimapur-Kohima New Line Project. The Revised Estimate was sanctioned in May 2022 and Railway Board agreed to the proposal of provision of ballastless track as recommended by the Zonal Railway Administration.

Audit noticed that in March 2018, Railway Administration decided to provide ballasted track instead of ballastless track for Tunnels No: T-1, T-1A, T-2 & T-3 (as initially proposed), on the plea that ballastless tracks had maintenance problems and its excessive cost. In March 2020, it was decided to adopt ballastless track on the ground of it being maintenance free and economical. The diametrically opposite stand on the type of track taken within two years clearly indicated that Railway Administration's decisions were not based on any scientific or engineering study.

As a result, the decision to change the scope of work from ballastless to ballasted track increased the cross-section area of Tunnels No: T-1A, T-2 & T-3. The subsequent decision of Railway Administration to again adopt ballastless track made the increase in cross-section area of the Tunnels unnecessary/meaningless.

Thus, unnecessary increase in cross-section area of Tunnels led to avoidable expenditure of ₹ 6.14 crore (**Annexure 2.8**).

Railway Administration in their reply stated (May 2022) that the length of tunnel increased to 4526 mtr to avoid skirting around the fragile slope of the hilly terrain. Tunnel No. 1 has ruling gradient of 1 in 60 with final cross-section area 41.55 sq. mtr. Ballasted track was preferred and it requires provision for maintenance by Ballast Cleaning Machine and hence the extra width. Therefore, to run Ballast Cleaning Machine for maintenance inside Tunnel No. 1, cross-section changed and increased. The Section adopted is as per decision taken in March-2018. In addition, Tunnel No. 1 is 3490 mtr long and requires extra cross-section so as to expedite fumes of the diesel loco from the tube of the tunnel by flow of air inside the tunnel.

Railway Administration further stated that based on the experience gained from ballasted track in tunnels in Lumbding- Silchar (LMG-SCL) Section in NEFR and from other sections, it was decided to adopt ballastless track in tunnels in Phase-3 of the Project. Hence, increase in cross-section area of Tunnel cannot be termed as unnecessary which was using ballasted track as per extant construction practice at the time of taking decision. Thus, the expenditure of ₹ 6.14 crore could not be avoided and was justified as per the then requirement.

Railway Administration's contentions are not tenable. The Audit observation was related to the increase in cross-section area of Tunnels No: T- 1A, T-2 & T-3 and not T-1, as mentioned in the Railway reply. The cross-section area of these Tunnels was originally approved with provision of ballastless track with lesser cross-sectional area.

Railway Administration did not make any advance study of the cost and maintenance implications/benefits in providing ballastless instead of ballasted tracks. Had Railway Administration made a proper study on the benefits of ballastless tracks in time, the entire extra expenditure on provision of excess cross-section area could have been avoided.

(D) Stores Procurement

(i) Procurement of Signaling material resulted in blockage of Railway revenues to the tune of ₹ 11.44 crore

As per Para 1438 of Indian Railway Code for Engineering Department, procurement of material for specific works should not be done in excess nor in undue advance of the requirement. While premature procurement results in blockage of Railway revenue and loss of utility of material, delayed procurement results in delay in commissioning of Projects. Better understanding between Departments involved in a Project and judicious approach of concerned Executives w.r.t. timely procurement, can avoid premature/delayed procurement of stores material.

In a construction Project, work related to Signal & Telecommunication (S&T) Department comes into play only after completion of civil construction activities. Inter-linking the procurement process of Signaling material with progress of Civil Engineering works is very important to avoid premature/delayed procurement.

Review of records related to procurement of Signaling material for DMV-KOHIMA New Line Project revealed that huge quantities of Signaling material were procured at a very early stage of Project execution (2017 to 2020) without ascertaining the progress of Civil Engineering works. It was found that all Signaling material required for the whole Project worth ₹ 11.44 crore was procured when progress of Civil Engineering works was not even 25 *per cent*. It was also seen that in many cases, material like Integrated Power Supply (IPS), cables etc., were still not installed/utilized even after more than 15-20 *per cent* of their codal life was over. Further review of records revealed that the revised target date of completion of the whole Project was March 2026.

Thus, improper and hasty procurement of signaling material led to blockage of ₹ 11.44 crore of Railway revenue for a period ranging from one year to four years (**Annexure 2.9**).

In reply, Railway Administration stated (May 2022) that:

- A) The Detailed Estimate of DMV-Kohima New Line project has been sanctioned by Board in the year 2015-2016 and initially tentative target for completion of the project was March/2020 and accordingly Civil Engineering works were also in advance stage. After observing the progress of the civil work and to complete S&T work within the targeted period, process for procurement of stores materials viz. IPS, Cables, LED Signals etc. had been initiated.
- B) The target set for First phase for this project was in the year 2020-21. As store procurement is a long lead process required around one year to receive the materials, hence, the procurement has been planned in the year 2017-18 and materials have been received in the year 2018-19. The physical work has been started in the year 2019-20 and finally get commissioned in the year 2020-21. Further, the work of Phase-2 is in progress and targeted for commissioning in the year 2022-23.

Further, the codal life of Signalling assets, viz. Cables, IPS is 20 years and codal life of LED signals, secondary cells, etc. are based in terms of operations i.e., from the date of installation. Hence, major portion of codal life of store materials those were procured is intact. Hence, there is no loss of revenue due to loss of codal life of Assets.

The reply of Railway Administration is not acceptable as huge quantities of Signaling material were procured at a very early stage of Project execution (2017-2019) when physical progress of the Project was very less. Consequently, most of the material was lying idle resulting in blockage of Capital and loss of significant portion of codal life.

Railway Administration may develop a proper mechanism for procurement of S&T material and initiate the procurement process only after civil engineering works of a Project reach an advanced stage. This would go a long way in avoiding cases of blockage of Capital due to idling of assets/materials.

2.1.2.2 Execution of Project

(A) Irregular Expenditure of ₹ 6.50 crore on provision of Blanketing Material

Detailed Estimate for DMV-KOHIMA New Line Project was sanctioned by Railway Board in 2015. While sanctioning the Detailed Estimate, Railway Board (January 2015) made observations against the proposed thickness (1 meter) of blanketing material and asked NFRCO to assess the real requirement. In response, NFRCO assured (February 2015) the Railway Board that in view the quality of local earth available, provision of 600 mm

thick blanketing material was kept in Detailed Estimate. This was reiterated by NFRCO in March 2015.

Further, as per RDSO Instructions (July 2019) for 'rationalization of formation layer thickness on Indian Railway track', blanketing material thickness over sub-grade soil of SQ1 category would be 550 mm.

Review of records related to provision of blanketing material in Dhansiri - Sukhovi Section of DMV-Kohima New Line Project, revealed that:

- (i) Contrary to its assurance, Railway Administration provided 1 m thick blanketing material on most of the formations in Dhansiri-Sukhovi Section.
- (ii) Despite specific Instructions of RDSO (July 2019), NFRCO continued to provide blanketing materials of 1 m thickness on formations after July 2019.

Further scrutiny of records revealed that Railway Administration provided 23296 cubic meter of blanketing material in excess of requirement, violating its own commitment (February & March 2015) at a cost of ₹ 2.67 crore. Moreover, even after clear RDSO Instructions, 33867 cubic meter blanketing material worth ₹ 3.83 crore was provided, in excess of requirement, after July 2019.

Provision of blanketing material of thickness more than agreed/required on formations, was highly irregular and led to avoidable expenditure of ₹ 6.50 crore **[Annexure 2.10 (a) & (b)]**.

In reply, Railway Administration stated (May 2022) that guidelines of GE: G-0014 (Nov-2009)/RDSO were followed for Earthwork & Blanketing in the Dhansiri - Sukhovi section as per which blanketing thickness was to be kept 1000 mm for SQ1 grade of soil in Railway formation. RDSO released guidelines in July 2019 i.e., 'Rationalization of formation layer thickness on Indian Railway track' with recommendation of 550 mm thick blanketing layer for SQ1 grade soil by the time formation was almost ready except few stretches where blanketing material was not compacted properly. These stretches were also provided with 1000 mm blanketing for uniformity in section as per extant guidelines applicable at that time.

The opening of section is done by CRS, who insist to do work as per railway specifications and guidelines. The assurance though was given for less thickness of blanketing material to RB at time of Detailed Estimate (DE) sanction, considering revision of specifications under process. However, as there was delay in revision of specifications, during initial execution of phase 1 work, same was done as per extant specifications at the time of execution, as mentioned above.

Railway Administration reply is not acceptable in view of the fact that a significant quantity of blanketing material was provided with 01 m thickness, even after receipt of RDSO Guidelines of July 2019 for provision of blanketing material of 550 mm thickness which was in violation of same. Further, NFRCO assured RB in February 2015 that the provision of 600 mm thick blanketing material was kept in the Detailed Estimate keeping in view the quality of local earth available.

This showed that the Railway Administration was well aware of the quality of local earth. But in spite of the assurance, Railway Administration provided blanketing material of 1 meter thickness. This was contrary to the assurance given to Railway Board and in excess of the blanketing requirement which resulted in avoidable expenditure.

(B) Payment of ₹ 42.38 crore to Contractors towards Price Variation

Timely completion of a Project is vital for achievement of desired objectives. Proper Contract Management is critical to ensure achievement of Project targets. But due to various factors, Projects are delayed and extensions to currency of Contracts granted either on Railway or Contractor Account. Such extensions unless granted judiciously often result in payment of undue Price Variation.

Review of records revealed that several extensions ranging from three to 58 months were granted to contractors in 11 cases mainly due to non-clearance of site, i.e., land. It was also noticed that in seven Contract Agreements, involving payment of Price Variation, main reasons for extension of currency of CAs were delay in approval of drawings and clearance of site. This led to slow progress in execution of works.

Thus, failure of NFRCO to complete works within the original date of completion in respect of seven Engineering Contracts resulted in obligatory payment of Price Variation of ₹ 42.38 crore to Contractors for the period beyond the original date of completion (**Annexure 2.11**).

In reply, Railway Administration attributed the delay in completion of works to various factors, viz., lengthy process of land acquisition, COVID-19 pandemic, local agitations, land disputes, encountering of bad geological strata in work-site and Nagaland being a disturbed area. It also stated that the work, being a targeted work, Contracts were awarded in anticipation of earliest resolution of issues and acquisition of land.

Price Variation was provided as per relevant General Conditions of Contract (GCC) Clauses and on merit of each case. Being targeted work, Contracts are awarded in anticipation of earliest resolution of issues and

acquisition of land so that work commences at the earliest to achieve the targets.

Railway Administration reply is not tenable in view of the instructions contained in Indian Railway Compendium for Tenders/Contracts wherein it was clearly stated that 'Before calling Tenders, the following conditions should be fulfilled in terms of Railway Board letter dated 29 August 1980 and 22 February 1985:

- (i) The Railway is in a position to handover the site of work and plan to the Contractor.
- (ii) The Railway should be ready with full knowledge of character and scope of work.
- (iii) The Railway is ready with design, detailed drawing, Schedule of Quantities etc.'

Had Railway Administration followed the above instructions, delay in execution of Project work and payment of Price Variation of ₹ 42.38 crore could have been avoided.

2.1.2.3 Other Issues

(i) Avoidable expenditure of ₹ 7.68 crore on ballast due to poor Contract Management

A Contract Agreement (CA) was executed in August 2018 for the work 'Manufacture, supply & stacking of machine crushed ballast between Dhansiri - Rangapahar Section and between Dhansiri to Sukhovi stations in connection with Dhansiri - Zubza (BG) New Railway Line' with M/s Shivam-Pushpas-TQ (Joint Venture) for ₹ 18.95 crore. As per CA, the total scope of work for the whole Dhansiri - Sukhovi Section was 88000 cubic meter of machine crushed ballast.

Review of records revealed that various extension for completion of the work were granted in a casual manner, even when the target date for opening of the section was imminent. Even though progress of work was very poor from the start, Railway Administration never took serious action to make the Contractor to expedite the work, viz. issue of seven days' Notice, 48-hour Notice or even terminating the CA. The Contractor could supply only 33280 cubic meter of Ballast costing ₹ 7.16 crores out of the total requirement of 88000 cubic meter.

Meanwhile, Railway Administration executed another Contract Agreement in December 2020 with M/s Cementone for the work 'Manufacturing and supply of 45000 cubic meter hard machine crushed stone ballast of Pakur' for the Section from Dhansiri (0 km) to Sukhovi (17 km). The Contractor supplied 49275 cubic meter Pakur Ballast. It was observed that the average cost of Pakur Ballast inclusive of freight charges was ₹ 3712.61

per cubic meter⁶³ as compared to cost of local Ballast of ₹ 2152.95 per cubic meter supplied by M/s Shivam-Pushpas (Previous contractor).

Railway Administration did not manage the Contract for local machine crushed Ballast properly to ensure timely supply of the contracted quantity of Ballast and resorted to procurement of Pakur variety Ballast (costly compared to local Ballast) to make good the shortfall. Had the Contract for procurement of local Ballast been properly managed, the necessity for procurement of Pakur ballast could have been avoided and extra money of ₹ 7.68 crore paid on Pakur ballast saved (**Annexure 2.12**).

In reply, Railway Administration stated (May 2022) that the Contractor could start the supply for local machine crushed ballast from 2019 when the formation became ready. The slow progress of the work was attributed mainly to Covid -19 pandemic in the years 2020 and 2021. They further contended that the work being a targeted one, with CRS inspection being scheduled in the year 2021, it was decided for supply of Pakur ballast as local suppliers were unable to supply adequate ballast. The work for supply of Pakur Ballast was awarded in September 2020.

Railway Administration's reply was not tenable as the Contractor for supply of local ballast was unduly favoured. Extensions for completion of supply were liberally given and no penal action was taken despite the very slow progress of work. No Tender was floated for supply of local ballast in the intervening period. In fact, the Tender for supply of Pakur variety ballast was floated way back in November 2018. This resulted in avoidable expenditure of ₹ 7.68 crore on ballast procurement due to poor Contract Management. Thus, it was evident that Railway Authorities had already made up their mind for procurement of Pakur variety ballast, even when the supply of local machine crushed ballast had not started due to on-going formation work.

2.1.3 Conclusion

With a view to develop Railway Network in Nagaland, a New Line Project to connect the State Capital Kohima with Dimapur was sanctioned by Railway Board in 2006-07. However, the New Line Project was re-aligned between Dhansiri and Zubza near Kohima. The work on the project was started in the year 2016.

Pre-construction Survey of the DMV-Kohima New Line Project was completed in 2011. Due to laxity of Railway Administration, Final Location Survey of a major part of the Project (60 km.) had to be

⁶³ Cost per cubic meter- ₹ 1260.70 (+) average freight charges per cubic meter- ₹ 2451.91

re-conducted, resulting in infructuous expenditure of ₹ 5.44 crore on the original Pre-Construction Survey work which had to be abandoned.

Audit noticed several major irregularities in the land acquisition process which led to irregular/infructuous expenditure of ₹ 141.70 crore during the period from 2015 to 2021. These included infructuous/avoidable expenditure of ₹ 23.34 crore on account of compensation paid for acquisition/procurement of land which was of no use due to revision of the alignment, ₹ 79.70 crore towards acquisition of land made over tunnels, ₹ 12.97 crore on acquisition of excess land, additional compensation of ₹ 6.97 crore paid on account of re-classification/re-survey of acquired land just after two to three years of payment of compensation to the affected land owners and ₹ 18.72 crore paid to the State Government towards establishment charges.

A case of avoidable liability ₹ 879.05 crore was noticed where reluctance to adopt cost cutting measures coupled with excessive provision of facilities in cross-section designs of Tunnels led to huge avoidable liability in construction of Tunnels. In another case, reversal of decision regarding use of ballasted or ballastless track in Tunnels led to avoidable expenditure. Irregularities were also noticed in provision of blanketing where blanketing material was provided in excess of requirement which led irregular expenditure of ₹ 6.50 crores. In one case, poor Contract Management led to avoidable expenditure of ₹ 7.68 crore, where the more expensive Pakur Ballast had to be procured due to improper handling of Contract Agreement for procurement of local ballast at cheaper rates.

Though the Detailed Estimate for the New Line project was sanctioned in 2015, progress of the Project was hampered due to initiation of a new FLS work which was completed in 2019. Progress of the Project was also hampered due to land disputes and delays in settling unjustified re-survey/reclassification claims. Extensions for completion of work were granted liberally resulting in delay in completion of works coupled with extra payment of ₹ 42.38 crore due to Price Variation. All these factors led to change in the target date for completion of the Project from March 2020 to March 2026.

The audit observations on land acquisition in this Report are few illustrative cases where serious irregularities were noticed. There is a likelihood that such errors of omission and commission, whether in this project or other projects may exist in many more cases. Railway Administration may thoroughly examine the remaining land acquisition cases to rule out existence of such irregularities.

2.1.4 Recommendations

Ministry of Railways may consider:

- *To ensure that the Pre-Construction Survey/Final Location Survey (FLS) Reports are critically analyzed to detect probable technical/construction lacunae and their comprehensive resolution prior to final acceptance. This would prevent delays affecting progress of the Project and infructuous expenditure on multiple Surveys.*
- *To strengthen land acquisition mechanism in order to prevent wasteful/avoidable expenditure on account of unnecessary /irregular acquisition of land. Accountability for acquisition of land in violation of codal provisions may be fixed.*
- *To allow payment of compensation in re-classification/re-survey cases only after proper Joint Verification of claims and provided they fell under the purview of relevant provisions of the Nagaland Land (Requisition & Acquisition) Act, 1965. The issue of irregular additional payment for Re-survey/Re-classification needs to be scrutinized thoroughly and accountability be fixed on concerned officials. It may be ensured that future cases of Re-survey/Re-classification are dealt as per land acquisition rules.*
- *To revisit the proposals related to cross-sections of Tunnels of DMV-Kohima New Line Project and also other upcoming Construction Projects to avoid unnecessary financial liability.*
- *To issue instructions for strict compliance of codal provisions/rules/orders and ensure timely approval of Designs & Drawings and handing over of sites to Contractors to avoid delay in completion of work and payment of Price Variation to Contractors.*

The matter was referred to the MoR in June 2022; no reply was received (August 2022).

2.2 Functioning of Special Purpose Vehicles of IRCON International Limited

2.2.1 Introduction

IRCON International Limited (IRCON), the Company, was incorporated in April 1976, for the purpose of construction of Railway Projects in India and abroad. The Company diversified its activities in 1985 to other constructions too. The scope was further enhanced in 1993 to include

projects on Public Private Partnerships (PPPs), business relating to leasing, real estate, etc. IRCON International Limited has formed four⁶⁴ wholly owned subsidiaries to undertake the projects relating to development, maintenance and management of National Highways. These subsidiaries were formed as Special Purpose Vehicles (SPVs) to undertake National Highway Projects awarded by National Highway Authority of India (NHAI) on PPP Mode. The National Highway Projects viz. Vadodara Kim Expressway and Davanagere Haveri Highway were under construction as on March 2020. Operations in other two projects viz. IPBTL and ISGTL started February 2019 and June 2018 respectively.

2.2.2 Scope of Audit

Audit reviewed two projects i.e., IRCON PB Tollway Limited (IPBTL) and IRCON Shivpuri Guna Tollway Limited (ISGTL) as indicated in **Table 2.1**.

Table 2.1: Details of the Projects

Sl. No	Project	SPVs created (date) for the project	Date of award by NHAI. (Commencement of project)	Concession period	Project cost
1	Four laning of Shivpuri to Guna from Km 236.00 to km 332.100 (Package-I) in the State of Madhya Pradesh	ISGTL (May 2015)	31/03/2015 (07/06/2018)	20 years from 25/01/2016	Phase-I ₹ 868.26 crore Phase-II ₹ 126.78 crore (Agreement was finalized at Premium of ₹ 20.19 crore per annum with 5 per cent annual increment)
2.	Widening and Strengthening of the existing Bikaner & Phalodi Section to Four lane from km 4.200 to km 55.250 and Two Lane with paved shoulder from Km 55.250 to Km 163.500 of NH-15 in the state of Rajasthan	IPBTL (September 2014)	27/08/2014 (15/2/2019)	26 years from 14/10/2015	₹ 844 crore 1. Equity Share Capital of ₹ 165 crore 2. Debt Capital: ₹ 352 crore & 3. NHAI Grant: ₹ 327 crore

Source: Records of IRCON International Limited

⁶⁴ IRCON PB Tollway Limited (IPBTL), IRCON Shivpuri Guna Tollway Limited (ISGTL), IRCON Vadodara Kim Expressway Limited and IRCON Davanagere Haveri Highway Limited)

Audit examination included ascertaining whether the viability of the projects was worked out realistically.

2.2.3 Financial performance of the Special Purpose Vehicles

The project executed by IRCON Shivpuri-Guna Tollway Limited (ISGTL) is being executed in two phases viz. Phase-I and Phase-II. Phase-I commenced toll collections from 7 June 2018 where as the project executed by IRCON Phalodi-Bikaner Tollway Limited (IPBTL) commenced its operations from 20 February 2019. The financial performance of the two Special Purpose Vehicles (SPVs) is indicated in **Table 2.2**.

Table 2.2: Financial performance of the two SPVs i.e ISGTL and IPBTL (₹ in crore)

Sl. No.	Particulars	ISGTL					IPBTL				
		2020-21	2019-20	2018-19	2017-18	2016-17	2020-21	2019-20	2018-19	2017-18	2016-17
1	Equity Share Capital	150	150	150	150	150	165	165	165	165	165
2	Loan from holding company	490.07	540.87	561.59	525.82	162.65	297.04	379.29	337.85	242.85	80
3	Revenue from Operations	110.78	94.44	149.75	381.93	294.12	54.86	70.4	356.07	277.54	177.89
4	Other Income	0.38	0.44	0.43	0.02	0.61	0.44	0.33	0.82	1.27	0.88
5	Total Income	111.16	94.88	150.18	381.95	294.73	55.3	70.73	356.89	278.81	178.77
6	Total Expenses	125.22	125.61	180.69	381.93	294.12	68.39	87.89	359.71	277.57	177.94
	Net Profit (Loss) after tax	-14.06	-30.83	-30.61	-0.06	0.39	-21.38	-17.17	-2.11	0.82	0.54

Source: Financial statement of ISGTL and IPBTL

From the above, it can be seen that the revenue from operations of ISGTL after commissioning (June 2018) had increased from ₹ 94.44 crore in 2019-20 to ₹ 110.78 crore in 2020-21. Similarly, the loss suffered by the Company also decreased to ₹ 14.06 crore in 2020-21 from ₹ 30.83 crore in 2019-20.

Whereas in case of IPBTL the revenue from operations which was ₹ 70.40 crore in 2019-20 (after commissioning in February 2019) decreased to ₹ 54.86 crore in 2020-21. Due to decrease in revenue the loss of the SPV increased to ₹ 21.38 crore 2020-21 as compared to loss of ₹ 17.17 crore in 2019-20.

2.2.3.1 Viability of the projects

IRCON engaged consultants⁶⁵ for pre-bid engineering services for these two projects at a cost of ₹ 31.65 lakh (₹ 16.64 lakh for ISGTL and ₹ 15.01

⁶⁵ M/s Caritas Infra Consulting Private Limited for pre-bid engineering services of ISGTL engaged in February 2015 and M/s Almondz Global Infra Company Ltd for pre-bid engineering services of IPBTL projects engaged in July 2014.

lakh for IPBTL). The viability of the projects was required to be evaluated in terms of Project Internal Rate of Return (IRR)⁶⁶ and Equity IRR⁶⁷ using discounted cash flow analysis⁶⁸. Based on the capital cost and financial analysis option for either Grants for implementation of the projects or premium in the form of revenue share and/or upfront payment was to be worked out. The Company prepared a financial model for the projects and decided to bid for (a) ISGTL for a premium of ₹ 20.19 crore per annum with annual increment of 5 *per cent* and for (b) IPBTL a grant of ₹ 327 crore as per the details indicated in **Table 2.3**.

Table 2.3: Details for assessment of viability of the Projects

S. No.	SPV	Concession period	Proposal for the Project	IRR, Equity IRR and NPV
1	ISGTL	20 years including construction period of 910 days	Premium of ₹ 20.19 crore per annum with annual increment of 5 <i>per cent</i>	12.96 <i>per cent</i> , 15.07 <i>per cent</i> and ₹ 314.23 crore respectively
2	IPBTL	26 years including construction period of 910 days	Grant of ₹ 327 crore	13.38 <i>per cent</i> , 13.75 <i>per cent</i> and ₹ 70.97 crore respectively

Source: Records of IRCON International Limited

NHA awarded these projects i.e., Bikaner Phalodi Tollway and Shivpuri Guna Tollway Project to IRCON on 27 August 2014 and 31 March 2015 respectively.

IRCON stated (July 2021) that as per the financial model for ISGTL, Project IRR was 12.79 *per cent* and Equity IRR was 17.46 *per cent*. The Project NPV and Equity NPV for ISGTL were ₹ 247.96 crore and ₹ 272.76 crore respectively.

⁶⁶ The Internal Rate of Return (IRR) is the discount rate at which the net present value of the cash flow of a project is zero. The IRR may be calculated based on either economic, or financial (ie, market) prices of all costs and revenues (or benefits). If the financial IRR is less than the cost of capital, it implies that the project would lose money. If the economic IRR is less than the opportunity cost of capital (i.e. a predetermined cut-off rate of investment), the project is not viable from an economic point of view.

The project IRR takes as its inflows the full amount(s) of money that are needed in the project. The outflows are the cash generated by the project. The IRR is the internal rate of return of these cash flows. The calculation assumes that no debt is used for the project.

⁶⁷ Equity IRR assumes that you use debt for the project, so the inflows are the cash flows required minus any debt that was raised for the project. The outflows are cash flows from the project minus any interest and debt repayments. Hence, equity IRR is essentially the "leveraged" version of project IRR.

⁶⁸ **Discounted cash flow (DCF)** is a valuation method used to estimate the value of an investment based on its future **cash flows**. **DCF analysis** attempts to figure out the value of an investment today, based on projections of how much money it will generate in the future.

The reply of the management is not acceptable as the management, while obtaining the approval for submission of bid on 27 March 2015 had quoted the Project IRR at the rate 12.96 *per cent* and Equity IRR at the rate 15.07 *per cent*.

2.2.3.1 (i) Unrealistic financial analysis of the projects

The financial model is a tool for evaluating a new project and facilitating negotiations among lenders, sponsor(s) and a government authority. Since the core aim of financial modelling is to forecast the performance of a project under uncertainty; economic and financial assumptions are made to predict the project performance. The financial viability of the project is prepared on the basis of proforma financial statements (e.g. income statement, balance sheet and cash flow statement) and key ratios such as Net Present Value⁶⁹ (NPV), internal rate of return (IRR) and return on equity. In addition, three types of financial model outputs such as revenues, net profit and IRR will be enough to find the most suitable strategy for the project.

Audit examined the assumptions made by the Company in the financial model for ascertaining the viability of the projects. It was revealed in audit that the assumptions made in the financial model for the projects were not proper and realistic. Had the assumptions for the financial model been taken realistically, the IRR and Equity IRR for both the projects would have been less than the projected as stated in the following paragraphs.

IRCON stated (July 2021) that it had followed due diligence in bidding for the two Build-Operate-Transfer (BOT) road projects. IRCON had appointed traffic study consultants for both projects and based on the field data collected by the traffic study consultants, the financial models were developed duly incorporating standard financial modeling concepts.

The financial model developed for ISGTL and IPBTL provided decision making parameters like Project IRR, Equity IRR, NPV and Debt Service Coverage Ratios. Based on the values of the same, it was decided to bid for the projects. The financial models for projects gave desired returns, based on which management decided to participate in the bids.

Though the IRCON had appointed the consultants for traffic study and financial modeling but it had ignored the report submitted by the Consultant in case of IPBTL and inflated the projected revenue figures to improve the IRR.

⁶⁹ Net present value (NPV) is used in capital budgeting and investment planning to analyze the profitability of a projected investment or project. It is the sum of the present value of all future cash flows. The present value refers to discounted value of cash flows at future dates. A project is considered for investment if its NPV is positive.

2.2.3.1 (ii) IRCON- Bikaner-Phalodi Tollway Limited (IPBTL)

As per the financial model, the projected IRR by the Company for the project was 13.38 *per cent* and Equity IRR of 13.75 *per cent*. With these projected values, the NPV of the project worked out to ₹ 70.97⁷⁰ crore as indicated in **Annexure 2.13**. The Company submitted the bid for the project for a grant of ₹ 327 crore after assessing the project IRR, Equity IRR and NPV as given above. Audit, however, observed that the Company had not made the following assumptions realistically to ascertain the viability of the project.

Expenditure for toll collection

In the Financial Model, the expenditure towards three toll collection plazas of IPBTL was considered as ₹ 5.20 crore for the year 2018-19 with an annual escalation of 5 *per cent*. The basis on which the expenditure for toll collection was considered as ₹ 5.20 crore was not on record. However, it was observed that while awarding the tender for appointment of a toll collection agency for this project, the estimated expenditure for toll collection was worked out (March, 2018) as ₹ 16.18 crore per annum. This estimate was prepared on the basis of the actual expenditure of IRCON's similar Joint Venture project i.e., IRCON Soma Tollway Private Limited (ISTPL).

However, the Company at the time of preparation of financial model for IPBTL ignored the fact that the actual toll collection expenditure of ISTPL during 2014-15 was ₹ 8 crore for two toll plazas. Therefore, assuming ₹ 5.20 crore as toll collection expenditure for three toll plazas of IPBTL was unrealistic.

Under estimation of toll collection expenditure resulted into overstatement of IRR of the project.

IRCON stated (July 2021) that the comparison of ₹ 5.20 crore for toll plaza collection expenditure with ISTPL's expenditure of ₹ 8 crore is not reasonable. As per work methodology of IRCON in tolling projects, Toll Expenditure consists of toll collection Expenditure, Patrolling & Incident Management and Office Expenses such as Premise up keeping, maintenance, manpower supply etc.

In the finance Model prepared (For 3 Tolls – one of 10 Lanes & other two of 8 Lanes, in 2018-19), while bidding the above components were Toll Collection Expenditure (₹ 5.20 crore), Electricity & Patrolling (₹ 2.14 crore) and Office Expenditure (₹ 3.69 crore). The total of above comes out to

⁷⁰ At a discount rate of 12 *per cent*

₹ 11.03 crore. After excluding Electricity cost the expenditure for Toll Plaza collection & Operation including Patrolling comes out to ₹ 10.97 crore.

As compared to above, the expenditure of two tolls of 10 lanes of ISTPL, is ₹ 8 crore as stated in the audit para. If we calculate Toll Palza expenditure in proportion of Lanes the expenditure for above three tolls comes out to ₹ 10.69 crore.

In light of above, it can be seen that the estimated expenditure considered against Toll Plaza is in line with latest available project expenditure at the time of bidding.

The reply of IRCON is not acceptable in view of the fact that the toll collection expenditure of ISTPL amounting to ₹ 8 crore for the year 2014-15 did not include Electricity expenses and office expenses. Further, these expenses of ₹ 8 crore pertain to 2014-15 which should have been adjusted for cost during 2018-19. Instead, only ₹ 5.20 crore has been considered for 2018-19

Thus, the expenditure towards three toll collection plazas of IBTP considered by the Company was not realistic.

Equity support by NHAI

The Company, in the financial model, had considered the equity support (grant) by NHAI for the project as ₹ 329.16 crore. However, the bid of IRCON for this project was submitted by the Company with a grant of ₹ 327 crore which was accepted by NHAI. Thus, the main bidding component was not considered correctly by the Company while preparing the financial model. This also affected the projected IRR of the project.

IRCON stated (July 2021) that the bid parameters for deciding the bid were either the payment of Premium or Grant. Thus, in order to submit most competitive bid, least grant needed be quoted and thus the parameter for consideration was kept 13.75 *per cent* Equity IRR (EIRR) which resulted in grant of ₹ 327 crore.

The Management contention that with EIRR of 14 *per cent* the grant would have been ₹ 327 crore is wrong. The Management while working out the Project IRR of 13.38 *per cent* and Equity IRR of 13.75 *per cent* had considered the Equity support (Grant) as ₹ 329.16 crore.

Audit worked out the projected IRR, Equity IRR and NPV of the project on the basis of financial model prepared by the Company after incorporating the realistic parameters pointed out above. It was observed that Project IRR and Equity IRR were 11.67 *per cent* and 11.47 *per cent* respectively only against project IRR of 13.38 *per cent* and Equity IRR of 13.75 *per*

cent, projected by the Company in its appraisal. Further with the above parameters, pointed out by Audit, the NPV of the project was 'negative'.

Thus, the Project IRR and Equity IRR were lesser than projected by the Company (**Annexure 2.14**). The reasons for the assumptions regarding lower toll collection expenditure and higher equity support were not found on record. Moreover, with the realistic parameters pointed out by audit, the NPV of the projects would have been negative (**Annexure 2.14**). Thus, audit observed that the project was not viable.

2.2.3.1 (iii) IRCON Shivpuri Guna Tollway Limited (ISGTL)

The IRR projected, in the financial model; by the Company for the project was 12.96 per cent and Equity IRR of 15.07 per cent. With these projected values, the NPV of the project was positive (₹ 314.23 crore) (**Annexure 2.15**). On the basis of these projections, the project was assessed as viable. Audit, however, observed that the Company had not made the following assumptions, realistically, in the financial model, to ascertain the viability of the project.

Traffic Revenue

The Company had appointed a consultant for conducting traffic surveys and recommend feasibility or otherwise of the project. The traffic surveys were to be used for working out the projected toll revenue in the financial model. It was noticed that the Company, in the financial model, had taken toll revenue at higher side than the projections made by the consultant. The average toll revenue suggested by the consultant was ₹ 280.38 crore⁷¹ per year (for 18 years of concession period) whereas the Company had inflated the toll revenue to an average of ₹ 322.57 crore (for 18 years of concession period). This resulted in higher projected toll revenue to the tune of ₹ 760.26 crore for the project during 18 years concession period (excluding construction period of two years).

IRCON stated (July 2020) that during the bid stage, for forecast of Toll rates w.r.t Toll Notification 2007, escalation based on WPI⁷² was calculated and it was found that there is escalation of 6.91 per cent per year till 2014-15. Based on this calculation, escalation factor per year was taken 6.5 per cent for calculating Toll rate in 2014-15. The same factor was taken for estimating Toll Rate in the year 2018-19. But the actual inflation rate was in lower side considerably during these years hence, the

⁷¹ This included toll revenue at toll plazas for seven categories of vehicles viz. car/jeep/van, LCV(incl mini bus), buses, trucks, three axial commercial vehicles, HCM/EME (4 to 6 axle) and Over sized vehicles (7 or more axles)

⁷² Wholesale price index

revenue forecast based on extrapolated escalation rate of 6.5 *per cent* was found higher side.

IRCON further stated (July 2021) that the traffic survey was conducted as per Indian Road Congress standards by the consultant. The annual growth rate of the revenue from traffic was recommended as 5 *per cent* while finalization of financial model, the same 5 *per cent* was considered as annual growth rate for the revenue from traffic.

As can be seen from the financial model, the average toll revenue for 18 years is ₹ 280.38 crore only. Toll rate increase in the financial model is only 5 *per cent*.

IRCON's reply is not accepted in view of the fact that the consultant had considered the escalation rate of 5 *per cent* considering the escalation of 6.91 *per cent* in WPI. But, the IRCON at bidding stage inflated the revenue suggested by consultant by ₹ 760.26 crore which made the IRR attractive. The IRCON in its reply of July 2020 accepted that escalation factor per year was taken 6.5 *per cent* for calculating Toll rate in 2014-15. The same factor was taken for estimating Toll Rate in the year 2018-19.

Repayment of loan

As per the assumptions in the financial model, the loan of ₹ 696.53⁷³ crore is repayable in 12 years in equal installments. However, in the financial model, the repayment of loan was considered only in case of surplus instead of scheduled repayment of equal installments. As the estimated revenue worked out in the financial model was not sufficient to repay the scheduled installment of loan, the Company considered the repayment of loan in case of surplus only. Due to this, the Equity Investment was shown at lower side which resulted into depiction of higher and attractive Equity IRR.

IRCON stated (July 2020) that the repayment of loan instalments were assumed for 10 years as per the assumption sheet. It is submitted that, during Financial Model calculation, instalment period was considered for 12 years. Based on Financial Model submitted by the consultant, Competent Authority has reviewed with different combination of premium, Equity & desired IRR with calculated Project Cost. Competent authority, to make the bid proposal more competitive, has accorded approval for bidding with Project IRR 12.96 *per cent* and Equity IRR 15.07 *per cent*.

⁷³ Rs 607.78 crore for phase-I and Rs 88.75 crore for phase-II. Subsequently, the SPV entered into agreement with the holding company for a loan 579.59 crore for phase-I of the project.

IRCON further stated (July 2021) that the loan to ISGTL was provided by IRCON. This project is a BOT project and may experience cash outflow uncertainty due to traffic risk. Therefore, it was decided at the modelling stage that the SPV will repay surplus cash after meeting its expenditure.

IRCON's contention that it was decided at the modelling stage that the SPV will repay surplus cash after meeting its expenditure was not found on record and seems to be only an after thought. Further, assumptions contained in the financial model clearly mentioned that loan would be repayable in 12 years in equal instalments.

The overall impact of the above audit observations was that the project IRR and Equity IRR of the project worked out to 10.85 *per cent* and 10.28 *per cent* only as against 12.96 *per cent* and Equity IRR of 15.07 *per cent* respectively projected by the Company in its financial model (**Annexure 2.16**). The NPV of the project taking into consideration the facts brought out by audit worked out as negative {(-) ₹ 65.91 crore at discounted rate of 12⁷⁴ *per cent*}. Thus, it is observed that the project was not viable.

IRCON stated (July 2021) that the conclusion is not correct, as even if audit observations are taken into account and the Project IRR is 10.85 *per cent*, it is higher than the Weighted Average Cost of Capital (WACC) of 9.12 *per cent*. In such a case where the WACC is lower than Project IRR, the Project NPV cannot be negative. It is correct that the Equity NPV of ISGTL is calculated to be ₹ 272.76 crore by taking discounting factor of 9.12 *per cent* (WACC) instead of 12 *per cent* as was done for IPBTL. However even if 12 *per cent* discounting factor was used, the Equity NPV would be ₹ 133.81 crore. As per standard financial models, if the project has positive Equity NPV, it can be accepted as viable project.

IRCON's reply that project IRR 12.79 *per cent* is more than the WACC is not correct as the actual projected IRR was 10.85 *per cent* only which is less than the hurdle rate of 13 *per cent*. Further, IRCON's reply is not correct as at 12 *per cent* discounting factor, the NPV worked out as negative (-) ₹ 65.91 crore.

2.2.4 Operation and Maintenance of the Toll Roads

The operation of Phase-I of the Shivpuri Guna Tollway (executed by ISGTL) toll road started w.e.f. 7 June 2018. Audit compared the projected

⁷⁴ As per functional plan on 'Transport for National Capital Region-2032', the prevailing discount rates are computed at a rate of 12 *per cent*. It was observed that whereas the NPV of the ISGTL was calculated at a discount rate of only 9.12 *per cent*, the NPV for IPBTL was calculated at a discount rate of 12 *per cent*. Thus, the Company had not computed NPV on the basis of prevailing discount rate uniformly.

revenues and traffic volume of the project with the actuals. It was observed that the actual revenue from operation of these projects was less than the projected revenues by 30 *per cent* in 2018-19 and 33 *per cent* during 2019-20. Similarly, actual traffic volumes were less than the projected volumes by 8.58 *per cent* and 9.22 *per cent* during 2018-19 and 2019-20 respectively. In 2020-21, though the actual traffic was higher than the projected traffic by 5.78 *per cent* but the actual revenue was less than the projected revenue by 10.71 *per cent* as is clear from the details given in **Table 2.4**.

Table 2.4: Details of projected revenues and traffic volume of the Project with the actuals

Sl. No.	Particulars	2018-19	2019-20	2020-21
1	Projected revenue (₹ in crore)	104.15	115.15	123.675
2	Actual revenue (₹ in crore)	72.88	94.160	110.430
	Variation (in per cent)	- 30.02	- 18.29	- 10.71
3	Projected average daily traffic volume PCU ⁷⁵	23,156	24,313	25,529
4	Actual average daily traffic volume PCU	21,169	22,069	27,005
	Variation (in per cent)	- 8.58	- 9.23	5.78

Source: Records of IRCON International Limited and ISGTL

Similarly, in respect of IRCON Bikaner-Phalodi Tollway project (completed on 15/2/2019), the actual traffic was less than the projected traffic by 24.06 *per cent*, 32.69 *per cent* and 41.27 *per cent* during the years 2018-19, 2019-20 and 2020-21 respectively. Revenue earned also did not match upto the projected figures during the years from 2018-19 to 2020-21 detailed in **Table 2.5**.

Table 2.5: Details of projected revenues and traffic volume of the Project with the actuals

Sl. No.	Particulars	2018-19	2019-20	2020-21
1	Projected revenue (₹ in crore)	6.63	66.81	73.76
2	Actual revenue (₹ in crore)	4.74	45.12	43.02
	Variation (in per cent)	- 28.51	- 32.46	- 41.68
3	Projected average daily traffic volume PCU	37,505	39,380	41,349
4	Actual average daily traffic volume PCU	28,483	26,506	24,286
	Variation (in per cent)	- 24.06	- 32.69	- 41.27

Source: Records of IRCON International Limited and ISGTL

⁷⁵ Passenger Car Unit (PCU) is used to measure the traffic volume or number of vehicles passing through a road.

Audit observed that the traffic volumes were inflated by the Company which resulted in unrealistically higher NPV for the project.

IRCON stated (July 2021) that Traffic survey was conducted as per IRCSP- 19 and standard industry practice. As per the respective reports for both the projects, the traffic PCU were forecast. The same was used as input in Financial Model also for purpose of revenue calculation.

IRCON's contention that revenue forecast by the consultant was used as input in financial model was not correct as while working out the projected revenue in case of ISGTL, IRCON has considered the higher toll rates than the rates considered by the consultant which resulted into overstatement of toll revenue to the tune of ₹ 760.26 crore.

2.2.5 Conclusion

The Company undertook two tollway projects of NHAI (Shivpuri Guna Tollway Project and Bikaner Phalodi Tollway Project) on PPP mode and formed two SPVs to execute these projects. These projects were assumed financially viable on the basis of a financial model. The NPV of the projects executed by ISGTL and IBPTL was worked out as positive in the financial model. Audit observed that assumptions in the financial model were not proper and realistic. Consequently, as per the realistic assumptions pointed out by Audit, NPV of both the projects turned out to be negative and therefore non-viable. It was also seen that the profitability of both the SPVs had decreased after commencement of the operations. Thus, the financial results of the SPVs after commencement of their operations also corroborated the audit observations.

2.2.6 Recommendation:

The Company may consider:

Adopting more realistic assumptions in the financial models for such projects.

The matter was referred to the MoR in October 2020; no reply was received (August 2022).

Chapter 3 – Traction and Rolling Stock

This Chapter includes two Pan India paragraphs viz. (a) 'Procurement and Utilization of Wagons in Indian Railways' and (b) 'Centralized Import of rolling stock parts' involving money value of ₹ 4144.57 crore discussing compliance issues on Rolling stock and Material Management.

3.1 Procurement and Utilization of Wagons in Indian Railways

3.1.1 Introduction

Indian Railways (IR) constitutes the principal mode of transportation for long haul freight movement in bulk as well as passenger movement. Freight is a profit-making business segment of IR and is the backbone of Railways revenue. During 2020-21, originating tonnage of freight and freight earning was 1234 million tonnes and ₹ 1,15,738 crore respectively. This comprised 88 *per cent* of the total revenue earned by the Railways. IR was holding a total fleet of 3,02,624 wagons as of March 2021⁷⁶.

Achievement of freight target largely depends on efficient wagon management, which can be ensured through proper assessment of requirement, availability of wagon as per requirement, optimum utilization of wagons through development of requisite infrastructure and proper and timely repair/maintenance.

Market share of IR in freight sector has declined substantially from 53 *per cent* to 35 *per cent* during the last two decades whereas the road segment increased to 59 *per cent* of the total freight movement in the country.

The study was undertaken to assess the efficacy of the existing system of assessment of requirement of wagons, availability of wagons as per requirement, utilization of wagons as well as their effective maintenance and existing monitoring mechanism to oversee freight operations in IR.

3.1.2 Previous Audit Reports and follow-up action

Performance Audit on "Management of Goods Trains in Indian Railways" earlier conducted over all Indian Railways (Railway Audit Report No. 31 of 2014), inter-alia, covered issues such as acquisition of wagons as per assessed requirement, funding of acquisition, adequate availability of wagons and their effective utilization, wagon maintenance and monitoring mechanism to oversee freight train operations *etc.* Ministry of Railways, in their Action Taken Note (ATN) of November 2015, submitted certain

⁷⁶ Indian Railway Year Book (2020-21)

corrective/remedial measures taken on the basis of the Audit Report as detailed in **Annexure 3.1**.

In the current study, follow-up/compliance of the remedial measures taken by Zonal Railways (ZRs) was also reviewed. Audit findings are indicated in Para 3.1.8.36.

3.1.3 Organizational Set up

At the Railway Board (RB) level, Member/Operations and Business Development along with the Additional Member/Mechanical Engineering and Additional Member (Railway Stores) is responsible for laying down policies on Assessment/Procurement of wagons. The Functional Directorates under them assist and aid in decision-making and its further monitoring.

At the Zonal Railway level, General Manager (GM) is the overall in-charge for the activities of their Zone. The freight business operations including collection of revenue are vested with the Commercial Department under the Principal Chief Commercial Manager (PCCM). The Operating Department under Principal Chief Operations Manager (PCOM) is responsible for allotment of Goods stock and running of Goods Trains. Principal Chief Mechanical Engineer (PCME) is responsible for maintenance and repairs of wagons. Freight business operations are vested with the Chief Commercial Manager (Freight Marketing) [CCM (FM)] and Chief Freight Transport Manager (CFTM).

At Divisional level, Senior Divisional Commercial Manager (Sr. DCM) is responsible for implementation of commercial policies and Senior Divisional Operations Manager (Sr. DOM) is responsible for freight operations. Senior Divisional Mechanical Engineer (Sr. DME) looks after repairs and maintenance of wagons.

3.1.4 Audit Objectives

Theme Based Audit was conducted to assess whether:

- (i) Requirement of wagons to meet the incremental freight traffic was properly assessed, acquisition of wagons was planned accordingly and adequate funding ensured.
- (ii) Planned acquisitions were completed and wagons made available to zones for meeting the demand for freight loading.
- (iii) Optimum utilization of wagons, effective wagon maintenance and proper monitoring mechanism ensured.

3.1.5 Audit Criteria

Theme Based Audit was conducted on the basis of the following criteria:

- (i) Provisions prescribed under the various Railway Codes and Manuals of Operating, Commercial, Mechanical Departments of IR.
- (ii) Guidelines/instructions issued from time to time by the RB/ZRs on assessment of requirement, procurement, utilization and maintenance of wagons.
- (iii) Twenty Fourth Report of Railway Convention Committee, 2014, National Transport Development Policy Committee Report-Working Group on Railways (June 2012).

3.1.6 Audit Scope and Methodology

Audit reviewed major aspects that impact planning, availability and utilisation of wagons, maintenance and monitoring mechanism, covering the period from 2017-18 to 2020-21. Audit Methodology includes:

- (i) Review of records on assessment, procurement, utilization and maintenance of wagons maintained at Railway Board, Production Units, Zonal Railways, Divisions, Stations, Goods sheds/sidings, Wagon Workshops, Wagon Depots and Terminal Yards including Sick Lines and sheds.
- (ii) Analysis of the relevant quantitative data including reports generated from related Information Technology (IT) Systems {viz. Rake Management System (RMS), Terminal Management System (TMS), Rake Allotment and Allocation system (RAS) Modules of Freight Operations Information System (FOIS), Control Office Application (COA), etc.}.
- (iii) Review of Reports on Freight operations and wagon movement generated from FOIS by Zonal Railway/Divisions.
- (iv) Analysis of FOIS data pertaining to registration of demand, allotment of wagons, Brake Power Certificates, movement of trains, etc.
- (v) Physical verification including Joint Inspection of selected units with the Railway Officials, Pictorial evidence and their authentication for infrastructure facilities at loading/unloading points, terminal yards etc.

3.1.7 Sample Selection

Sample size selected by the zones for examination of various issues at the Zonal level is indicated in **Table 3.1**.

Table 3.1: Details of Sample size

Sl. No.	Name of the activity centre	Selection criteria/sample size
1.	Division	Two Divisions (with highest volume of Goods traffic in each zone)
2.	Loading points (Sidings/Goods Sheds)	Two Loading points (involving highest volume of goods traffic in each selected Division)
3.	Unloading points (Sidings/Goods sheds)	Two Unloading points (involving highest volume of goods traffic in each selected Division)
4.	Terminal Yard including sick line	Two from each zone
5.	Wagon Depot	One from each zone
6.	Wagon Workshop	One from each zone
7	Railway Board	Review of all related records maintained at Railway Board.

Zone-wise sample selected for the review is indicated in **Annexure 3.2**.

3.1.8 Audit Findings

(A) Audit Objective 1: Whether requirement of wagons to meet the incremental freight traffic was properly assessed, acquisition of wagons was planned accordingly and adequate funding ensured?

Rolling Stock, comprising of locomotives and wagons is the backbone on which freight movement depends.

3.1.8.1 Assessment of requirement of Wagons

Wagon acquisition is a need-based activity dependent on traffic needs and availability of funds after taking into consideration the replacement of wagons due for condemnation *etc.* As per Para 1001 of the Indian Railway Rolling Stock Code, zonal planning is to be done at the Zonal Headquarters, for meeting the requirements of the Zone. Railway Convention Committee, in their Report of 2014 (submitted in Parliament in 2017 and 2018), had also recommended to associate the ZRs (i.e. the ultimate users) in the consultation process for their respective requirements of Rolling Stock which would in no way impede the central procurement system and would establish a scientific and pragmatic approach.

Review of records of ZRs/Railway Board, Audit observed that:

- ZRs neither worked out requirement of wagons nor communicated any such requirement to RB during the entire review period. The entire requirement was assessed at RB level in contravention to the above codal provision.
- RB had assessed requirement of wagons up to 2018-19 based on traffic projection of loading of 1225 Metric Tonnes (MT) in 2018-19 with a lead⁷⁷ of 580 Kms. and taking into consideration other related factors like Net Tonne Kilometers (NTKM) (assuming wagon day utilization of 8650 NTKMs), Peak Load, ineffective percentage, expected condemnation of wagons *etc.* The net additional wagon requirement from 2016-17 to 2018-19 was worked out at 34,150 wagons. Taking into account the orders already placed with the wagon manufacturers, net additional requirement for 2018-19 account was worked out at 11,232 numbers. The net additional wagon requirement during the above period was subsequently reassessed (January 2018) at 41,308 wagons on assumption of reduced wagon utilization of 8400 NTKMs per wagon day in 2018-19 due to traffic block.
- In March 2018, keeping in view the uncertainty regarding the expected efficiency of the wagon usage (NTKM per wagon day), Traffic Directorate had planned to procure 15,000 wagon per year from 2019-20 to 2022-23.
- Position of projected additional wagon requirement from 2017-18 to 2020-21, reassessed and approved by the Member Traffic/RB vide Background Note on Item No.19 dated 16 October 2019 and Note on Point No.7 (dated 9 September 2021), is indicated in **Table 3.2**.

Table 3.2: Year-wise wagon requirement

Sl. No.	Year	Wagon requirement projected
1	2017-18	Nil
2	2018-19	20490
3	2019-20	14800
4	2020-21	4721

Source: Member Traffic/RB's Background Note on Item No.19 dated 16 October 2019 and Note on Point No.7 (dated 9 September 2021)

Note: The detailed calculation of above requirement of wagons was not mentioned in the records.

⁷⁷ Average distance each tonne of goods transported.

From the above, it is evident that in absence of any specific guidelines regarding assessment of requirement of wagons and any input from zones, RB kept on changing requirement of wagons.

Wagon holding in zones vis-a-vis Wagon requirement on the basis of Wagon utilization norm (NTKM)

In absence of any assessment of requirement of wagon by zones, Audit has attempted to assess the same on the basis of NTKM per wagon per day and compared the same with wagon holding of zones.

On the basis of records available at RB, Audit observed that:

- There was overall shortfall ranging from three *per cent* (2018-19) to eight *per cent* (2020-21) in wagon holding with reference to assessed requirement 2017-18 to 2020-21.
- In four Zonal⁷⁸ Railways, wagon holding was less than assessed requirement whereas in 10 ZRs⁷⁹, wagon holding was more than the assessed requirement throughout the review period. In South Central Railway (SCR), wagon holding was more than assessed requirement for the years 2017-18 to 2019-20 whereas in 2020-21, wagon holding was less than assessed requirement.
- Average Lead⁸⁰ of Traffic decreased in eight zones⁸¹ in 2020-21 in comparison to 2019-20. Such decrease was particularly high in Northeast Frontier Railway (NEFR) (39.27 *per cent*) and South East Central Railway (SECR) (15.88 *per cent*).

3.1.8.2 Planning for acquisition of wagons

Annual Rolling Stock Programme (RSP) is a follow-up of Five-Year Plans, formulated for IR in respect of the acquisition of Rolling Stock. RSP for acquisition of coaches, locomotives and wagons is prepared at RB level every year, based on the anticipated annual requirement of rolling stock (additional and replacement) over the next three years, normally within the purview of the Five-Year Plans. Provisions required to be made in the RSP on replacement account is arrived at by projecting likely condemnation in the period for which plan is made. However, the augmentation of wagons is planned centrally at RB every year. This requirement is approved by RB and Minister for Railways which in turn sanctioned by the Parliament.

⁷⁸ ER, ECR, ECoR and SECR.

⁷⁹ CR, NCR, NR, NER, NEFR, NWR, SR, SER, SWR and WCR.

⁸⁰ Average lead of traffic-represents the average distance each tonne of goods is transported.

⁸¹ CR, ER, ECR, ECoR, NER, NEFR, NWR and SECR.

On review of records, Audit observed that:

- Allotment of wagons was made by RB without any demand by ZRs.
- There was no consistency between the wagons allotted by RB and wagons commissioned by the ZRs throughout the review period.
- In the absence of the data of wagons demanded by ZRs, shortfall in addition against wagon demand, wagon holding and wagons available for freight could not be assessed for seven zones⁸².

3.1.8.3 Funding the acquisition of wagons

Financing the procurement/acquisition of all the rolling stock appearing in the Annual RSP is met from Gross Budgetary Support (GBS), Internal Generation, Extra Budgetary Resources (EBR) through Indian Railway Finance Corporation Limited (IRFC) and Private participation by the interested customers. Expenditure on procurement of wagons for incremental traffic is charged to Capital and that on replacement account is met from Depreciation Reserve Fund (DRF). Ministry of Railways also generates funds through public borrowings (Bonds) to finance procurement of wagons. The Budget Grant (BG) and Actual Expenditure (AE) for procurement of rolling stock are depicted in capital segment of the Grant (erstwhile Demand No.16) under Rolling Stock and details of procurement planned are mentioned in the RSP of Railways.

Audit noted that during 2017-18 to 2020-21, no allotment was done under the Depreciation Reserve Fund and Depreciation fund. However, expenditure ranging from ₹ 11 crore to ₹ 36 crore were booked in DRF resulting in excess expenditure. There was huge saving of ₹ 262.52 crore under the head 'Capital' during 2020-21.

Indian Railway Finance Corporation Limited (IRFC) was set up as a public limited company in December 1986 with the sole objective of raising money from market to part finance the plan outlay for meeting the developmental needs of IR. Funds are raised through issue of bonds, term loans from banks/financial institutions and availing external commercial borrowing etc. The company leased rolling stock assets (including locomotives, wagons and coaches) worth ₹ 2,56,150 crore to the IR up to 31 March 2021. IR has been making lease payments and principal repayment to IRFC on half-yearly basis.

⁸² CR, ER, ECR, NR, NCR, ECoR and WR.

Audit observed that Railway had procured 466 and 137 more wagons than planned through IRFC funding during 2018-19 and 2019-20 respectively, whereas 69 less wagons were procured than planned during 2020-21.

(B) Audit Objective 2: Whether planned acquisitions were completed and wagons made available to zones for meeting the demand for freight loading?

3.1.8.4 Acquisition of Wagons

In the current study, wagon production plan targeted vis-a-vis their achievement during the review period was reviewed. Details of Wagon production by Railway Workshops, Public Sector Undertakings (PSUs) and Private sectors during 2017-18 to 2020-21 is given in **Annexure 3.3**.

Audit observed that there was shortfall in achievement of production target in the year 2017-18 to 2019-20 ranging between 396 and 1465. Target was substantially reduced from 12000 nos. (2019-20) to 10000 nos. (2020-21). Shortfall was due to non-availability of wheels from Rail Wheel Factory (RWF), Bangalore, Steel from various Steel Plants and other input materials. It was also observed that Railway discontinued the system of providing Steel, Wheel set and Cartridge Taper roller bearings (CTRB), free of cost, to the contracting firms from 2018-19 onwards and ordered that CTRB and Steel had to be purchased from Research, Design and Standards Organization (RDSO) approved/Railway sources and wheel sets to be purchased from RWF.

From the above, it is indicated that Railway Administration failed to ensure availability of required items, especially Rail wheels which hampered production of wagons and ultimately led to shortfall in production of wagons.

3.1.8.5 Manufacturing of wagons by Railway's own Workshops.

IR has five in-house production units (workshops)⁸³ for manufacturing wagons. Audit analysed production capacity, targets fixed and actual production of wagons by the Workshops during the review period and observed that:

- Amritsar Workshop of NR, Samastipur Workshop of ECR and Jamalpur Workshop of ER failed to achieve the target mainly due to non-availability of required material, which adversely affected availability of wagons for freight loading as well as under-utilization

⁸³ Jamalpur (ER), Samastipur (ECR), Amritsar (NR), Golden Rock Workshop (SR) and Carriage Repair Workshop, Hubballi (SWR).

of available manpower and plant & machineries at these Workshops.

- Installed capacity for production of wagons of Golden Rock Workshop was not assessed by Southern Railway. The production capacity of the workshop was assessed based on available man-hours and not on availability on machine hours.
- There was no shortfall in production of wagons by Carriage Repair Workshop (Hubballi) under South Western Railway (SWR).

3.1.8.6 Procurement of wagons by Direct purchase

Procurement of wagons is mainly done from the approved wagon manufacturers of both public sector and private sector. There are four Central PSUs and 13 private wagon manufacturers as shown in the **Annexure 3.4**.

(a) Fresh Orders Issued to Private Firms despite default in supply of previous orders

Review of Contract Orders of wagons issued by RB and Monthly Wagon Production Statement maintained by RB during the review period revealed that RB had placed supply orders on the firms who have repeatedly defaulted in supply of wagons within stipulated time. Firm-wise position is indicated in **Annexure 3.5**.

Audit observed that:

- M/s. Besco Ltd. could manufacture only 412 wagons (15 per cent of total orders of 2706 wagons) during 2018-19. Despite such poor performance, the firm was awarded fresh orders of 395 wagons on 14 January 2019. Out of outstanding supply of 587 wagons as on 1 April 2020, the firm was able to produce only 175 wagons (29.81 per cent) during 2020-21.
- M/s. Cimco Ltd. could not produce any wagon from January 2018 to May 2018 and also in September 2018. At that time, huge orders were due from the firm.
- Outstanding order against M/s. Titagarh Wagons Ltd. as on 01 April 2017 was 218. Though the firm was able to produce only 197 wagons during 2017-18, they were awarded fresh order for 1147 wagons on 28 December 2017.
- Out of outstanding orders of 1407 wagons as on 01 April 2020, M/s. Texmaco was able to manufacture only 863 (61.34 per cent) wagons during 2020-21.

- Outstanding order against M/s. Modern Industries as on 01 April 2017 was 688. The firm manufactured no wagons during July 2017 to December 2017 and could manufacture only 249 wagons (i.e. only 25 per cent of total order) during 2017-18. The firm was given fresh order to supply 323 wagons on 28 December 2017 and 2643 on 06 December 2018. But the firm could not supply wagons as per committed time.

(b) Delivery Period extended without Liquidated Damages and Denial Clauses

As per Clause 6 of contract order issued by Railway Stores (W) Directorate and Clause 12 of General Conditions of Contract (GCC), Liquidated Damages (LD) should be imposed in the event of supplier's failure to deliver wagons by due date.

During review of contract files of wagons pertaining to 2017-18, Audit observed that delivery dates were extended several times initially with LD and Denial Clauses, recording reasons therefor. The delivery period was subsequently extended without LD on the same reasons recorded earlier. Some examples are cited below:

- Delivery period of Contract awarded to M/s. Cimmco Ltd, Kolkata on 28 December 2017 for supply of 1191 wagons was extended four times initially with LD and Denial Clause. However, the delivery period was subsequently extended without LD and Denial Clause through Amendment.
- The delivery periods of the contracts placed on M/s. Jupiter Wagons Ltd., M/s. Titagarh Wagons and M/s. Texmaco Rail & Engg. Ltd. under same tender batch, were initially extended with LD and Denial Clauses. Later on, the delivery periods were extended without LD and Denial Clauses without mentioning any new reasons.

Thus, non-enforcement of LD clause as per contract order and GCC resulted in delayed supply of wagons by the wagon manufacturers.

3.1.8.7 Acquisition of wagons under private investment- Public Private Partnership (PPP) Mode

In the recent past, IR has launched five schemes viz. Liberalized Wagon Investment Scheme (LWIS), Special Freight Train Operator (SFTO), Automobiles Freight Train Operator Scheme (AFTO), Wagon Leasing Scheme (WLS) and General-Purpose Wagon Investment Scheme

(GPWIS) for induction of wagons into the IR network through private investment.

Main features⁸⁴ of these schemes are indicated as under:

LWIS	The Scheme allows investment by end users (viz. producers, manufacturers and consumers of goods).
SFTO	The Scheme allows investment in procurement of SPW and HCW for transportation of non-traditional commodities.
AFTO	The Scheme permits procurement and operation of special purpose rakes by private parties in transportation of automobile sector.
WLS	The Scheme allows induction of rakes on lease basis through PPP route. The leasing companies lease out rakes to end users, logistics service providers.
GPWIS	The Scheme allows investment by end users, PSUs, Port Owners, Logistics Providers and Mine Owners in GPWs. The Scheme permits eligible parties to invest in minimum of one rake of GPWs for movement in any of the approved circuit(s) to carry any commodity.

Source: Indian Railway Year Book 2018-19

Audit examined the position of wagons proposed to be acquired through the above Schemes as approved by RB vis-à-vis actually inducted in the system to ascertain how far Railway was able to materialize the initiatives to harness private investment by capital infusion. Outstanding Maintenance Charges of Wagons as per Agreement and related reasons were also examined.

Summarized position of rakes actually inducted in the Railway system in all Zones during the review period is indicated in **Table 3.3**. Zone-wise position is indicated in **Annexure 3.6**.

Table 3.3: Details of induction of rakes through private investments in IR

Sl. No.	Year	Zone	Number of rakes for which proposal approved by RB					Total proposed	Number of rakes inducted in the IR system					Total inducted
			LWIS	SFTO	AFTO	WLS	GPWIS		LWIS	SFTO	AFTO	WLS	GPWIS	
1	2017-18	All	21	4	34	2	0	61	7	1	14	2	0	24
2	2018-19	Zones	2	6	0	5	48	61	7	4	4	5	2	22
3	2019-20		9	3	9	39	32	92	4	2	15	39	21	81
4	2020-21		1	4	0	5	38	48	2	7	3	5	4	21
Total			33	17	43	51	118	262	20	14	36	51	27	148

Source: Zonal Railways relevant records

⁸⁴ Indian Railway Year Book 2018-19

From the above table it is indicated that Railways was not able to realize the full potential of the schemes as proposed induction of rakes through private investments did not materialize.

Detailed scrutiny further revealed that:

- In Southern Railway (SR), M/s. APL Logistics Vascon Automotive Private Ltd. opted for AFTO scheme. RB accorded approval for procurement of 25 rakes of which 20 rakes were inducted during the Review period. For the remaining five rakes, RB granted (June 2021) extension of time up to May 2023.

The Mechanical Directorate of RB, with the concurrence of the Freight Marketing and Finance Directorate, instructed (September 2014) Zonal Railways that routine maintenance cost was to be charged at a fixed rate of five *per cent per annum* on capital cost of the private wagons. SR sought clarification (December 2014) from RB on execution of a rider agreement for alteration/modification to be effected in the agreement already executed. Neither any clarification was received from RB nor did SR pursue the issue further.

Freight Marketing Directorate and Finance Directorate had not taken cognizance of Mechanical Directorate's above instructions. Subsequently issued Circular No.13 of 2018 dated 19 April 2018 and Master Circular No. Freight Marketing Master Circular/AFTO/2021/0 dated 26 October 2021) on the AFTO scheme, which prescribes that maintenance of the wagons will be undertaken by IR at its own cost during the currency of the concession agreement.

Due to lack of co-ordination between two Directorates of RB and in absence of any clear-cut instruction from RB, SR could not claim any maintenance charges from the AFTO Operator amounting to ₹ 42.71 crore for the period from September 2014 to March 2021.

- South Eastern Railway (SER) allotted 123, 76 and 216 rakes during the year 2017-18, 2018-19 and 2019-20 respectively at Banspani (BSPX) and Jaroli (JRLI) without any demand from the party in contravention of codal provision which may invite inherent risk of non-utilization of rakes allotted without demand.

3.1.8.8 Allocation of wagons amongst Zonal Railways

Adequate availability of wagons and locomotives as well as appropriate paths is an essential requirement for movement of goods trains. Each ZR is authorized by the RB to keep specified number of rolling stocks which is referred to as authorized stock. On the basis of available wagons for operational activities with ZRs, RB distributes newly built wagons amongst

ZRs. RB also allows transfer of wagons from one ZR to another ZR, keeping in view the demand of goods traffic in ZRs.

During review of records, Audit observed that:

- During the review period, RB allotted 39658 newly built wagons among ZRs. However, as per zonal railway records the allotment of wagons was 36347.
- Wagons allotted by RB were not received in the same year in 11 Zones⁸⁵, which led to delay in achievement of intended benefits. In two zones⁸⁶, wagons were received in excess than allotted by RB.
- Since Wagon Manufacturers handed over wagons directly to the nearest division of the ZRs, delay in handing over of wagons to the Operating Department and their induction in the railway system could not be assessed in Audit.
- There were discrepancies in the number of wagons allotted by RB between records maintained by RB and at Zonal level (details in **Annexure 3.7**).

3.1.8.9 Availability of wagons on demand by parties

Each ZR is authorized to keep a specified number of rolling stock which is referred to as authorized stock. ZR maintains Wagon Registers showing brief details of procurement and maintenance as per authorized stock. Station in-charge maintains day-to-day figures in respect of the wagons and gets them relayed to the control in time.

Audit analysed demand vis-à-vis allotment of rakes in respect of 58 sidings/goods sheds⁸⁷ over 32 divisions in 16 ZRs on the basis of data collected from sidings/goods sheds and observed the following:

- In 28 loading points of 13 zones⁸⁸, all the rakes demanded by the party were supplied by Railways.
- In two loading points of NEFR, all the rakes demanded by the party were supplied by Railways except in one occasion of non-supply of five rakes.
- In 20 loading points of eight zones⁸⁹, out of total 19974 rakes demanded during the selected three months (May, December and

⁸⁵ ER, ECR, NR, NWR, SER, NCR, NEFR, SCR, SR, WR, ECoR

⁸⁶ SECR, SWR

⁸⁷ Details in respect of two loading points viz. UMSG and Ghugghus of Nagpur division of CR not made available to Audit.

⁸⁸ Four each in ECoR, SR, SWR, two each in CR, ER, NR, NCR, SCR and WCR, one each in ECR, NWR, NER and WR.

March) of 2017-18 to 2020-21, 17628 rakes were supplied by Railways. Out of 2298 rakes cancelled by parties, 2188 rakes were cancelled due to non-supply of rakes by Railway. In 48 cases at Sankrail Goods Terminal Yard (SGTY) of SER, rakes were not supplied even after more than ten months of placement of indent and Railway lost the potential earning. As a result of non-supply of rakes demanded, Railway sustained a loss of approximate freight charges⁹⁰ to the tune of ₹ 1195.28 crore.

- In three loading points of two zones⁹¹, out of total 6906 rakes demanded during the selected three months (May, December and March) of 2017-18 to 2020-21, 6673 rakes were supplied by Railways. Out of 233 rakes cancelled by parties, 232 rakes were cancelled due to non-supply of rakes by Railway. As a result of non-supply of rakes demanded, Railway sustained a loss of approximate freight earnings⁹² to the tune of ₹ 56.45 crore.
- In five loading points of two zones⁹³, out of total 2340 rakes demanded during the selected three months (May, December and March) of 2017-18 to 2020-21, 2255 rakes were supplied by Railways. Out of 85 rakes cancelled by parties, 63 rakes were cancelled due to non-supply of rakes by Railway. As a result of non-supply of rakes demanded, Railway sustained a loss (Net earning of goods wagon/per km X distance for which rake, short supplied, was indented X number of wagons indented in the rake, short supplied) to the tune of ₹ 7.44 crore.

In its reply, NEFR stated that during the month of March 2018, restriction for loading to Jirania was imposed for 09 days by RB due to heavy pipeline. So, there was shortfall in supply of 100 wagons due to this reason. The required number of wagons were provided at Numaligarh Refinery Oil Siding in May 2017 except one wagon bearing No. WRBTPNL 956518 was declared as unfit to run by TXR staff. The said wagon was declared as unfit from the safety point of view.

The contention of Zonal Railway Administration is not tenable on the ground that the restriction was imposed only for loading of FCI food grain to JRNA for 09 days by Railway Board due to heavy pipe line. But Zonal

⁸⁹ Four in SER, three in ECR, NER, WR, two each in NCR, WCR, SECR and one in SCR.

⁹⁰ Mode of calculation- Permissible capacity of the rake, short supplied (x) freight charge for the commodity for the distance for which short supplied rakes were indented.

⁹¹ Two in ER and one in SCR.

⁹² Mode of calculation- Average earnings per rake loaded from the concerned siding (x) No. of rakes cancelled.

⁹³ Two in NR and three in NWR.

Railway Administration could not supply wagons to the party in March 2018 for booking. At the time of audit, no record was furnished against NRSR station to the effect that one wagon was declared unfit to run by TXR staff, as claimed now.

(a) Allocation vis-à-vis Demand analysis of Rakes

Various parties raise demands for rakes and rakes are allotted to the parties in accordance of availability. The demand is either fulfilled (F) or cancelled (C). There are other two categories viz. I and M– but they are not significant in terms of numbers.

Analysis of the FOIS data regarding year-wise demand fulfillment for the period from 2016-17 to 2020-21 revealed that more than 85 per cent demand was fulfilled, as indicated in **Table 3.4**.

Table 3.4: Year-wise demand fulfillment

Sl. No.	Demand Status	Total Of ID	%age 1	2016-17	%age 2	2017-18	%age 3	2018-19	%age 4	2019-20	%age 5	2020-21	%age 6
1	C	304567	12.99	35507	8.38	58527	12.54	77799	15.70	66883	14.21	65851	13.47
2	F	2001887	85.35	379300	89.49	394928	84.61	407721	82.29	399104	84.79	420834	86.11
3	I	38872	1.66	8973	2.12	13288	2.85	9919	2.00	4682	0.99	2010	0.41
4	M	140	0.01	50	0.01	38	0.01	29	0.01	14	0.00	9	0.00
Total		2345466	100.00	423830	100.00	466781	100.00	495468	100.00	470683	100	488704	100

Source: FOIS data for the period from 2016-17 to 2020-21

Detailed analysis further revealed the following:

- Zone-wise demand fulfilment: NEFR, ECR and SECR had a consistently low demand fulfilment percentage for all the five years (**Annexure 3.8**).
- Zone-wise position of average time taken (in days) in demand fulfilment: Average time taken in demand fulfilment in the zones like ECR, NEFR and SECR had been consistently high for all the five years (**Annexure 3.9**).
- Station-wise time taken in demand fulfilment (where more than 60000 days were taken in five years for demand fulfilment): At M/s. Churcha Colliery, Baikunthapur of SECR and Santaldih Station, Santaldih of SER, average time taken in demand fulfilment was more than 90 days and 125 days respectively (**Annexure 3.10**).
- Party-wise demand fulfilment (with more than 10000 demands during the period): Though three parties (MCFL, SECL, CCL) had huge demand of rakes, their demand fulfilment percentage was as low as less than 70 per cent (**Annexure 3.11**).

(C) Audit Objective 3: Whether optimum utilisation of wagons, effective wagon maintenance and proper Monitoring Mechanism ensured?

Sub objective 1: Whether optimum utilization of Wagons ensured?

Adequate availability, optimum utilization with minimum detentions and reduction in empty haulage of wagon stock are crucial for profitable operation of the Railways. The major activity centres of freight operation include terminals, yards, control office and stations (Goods sheds/Sidings).

3.1.8.10 Analysis of efficiency parameters/indices in respect of locos and wagons

Audit reviewed the performance of ZRs under various efficiency parameters set by RB to ensure efficient utilization of wagons such as (i) Wagon Turn Round (WTR) (ii) Detachments (iii) Train partings (iv) Hot axles and (v) Poor brake power *etc.*

Audit observed that:

i) Wagon Turn Round (WTR)

Wagon turn-round (WTR) is the interval of time between two successive loadings of a wagon.

- Two zones (NWR and WCR) could not achieve the target throughout the review period. ECR could not achieve the target during 2017-18 and 2020-21.
- WTR ranged from 1.48 to 3.40 days in all zones during 2017-2021, whereas the All-India Average during the same period ranged from 5⁹⁴ to 5.43 days⁹⁵. This indicates that Zonal position/all-India average did not reflect true picture.
- In Five⁹⁶ Zones, WTR improved in 2020-21 as compared to 2017-18, whereas the position deteriorated in the remaining 11 Zones.

ii) Detachment

During the running of train, sometimes wagons get detached due to coupler breakage. This affects movement of following trains and also a threat to the safety. RB fixes targets for monitoring the detachment cases. On review of records, Audit observed that:

- Targets fixed by RB varied widely amongst the ZRs.

⁹⁴ Indian Railway Year Book.

⁹⁵ Indian Railways Annual Reports and Accounts 2020-21.

⁹⁶ CR, ECR, NER, NWR and SECR.

- Three⁹⁷ Zones exceeded the target of detachment throughout the review period. In four⁹⁸ zones, detachment cases were more than 50 in all the years. ECR recorded the highest number of detachment cases of 176 nos. in 2019-20. Reasons for the same were not available on record. In NCR, number of detachments were 89 against the target of three during 2020-21.

iii) Train Parting

Train parting refers to detachment of entire rake or portion of rake from the engine.

Audit observed that:

- The targets fixed by RB varied widely between one and 50 amongst ZRs.
- Train parting cases exceeded targets in two⁹⁹ zones during 2017-18 to 2019-20.

iv) Hot Axles

These are mechanical failures on account of the defects developed in the bearing of the wheel set mainly by heavy loading of wagons with a cascading effect on running of all the trains in that section.

Review of hot axle cases during the review period revealed that:

- In eleven zones¹⁰⁰, number of hot axles cases increased to 178 in 2020-21 as compared to 71 in 2017-18. This was ranging between 7.14 *per cent* (WR) and 80 *per cent* (NEFR). Incidences of hot axle exceeded the target by more than 100 *per cent* in seven zones¹⁰¹. In three¹⁰² zones, incidences of hot axle exceeded target throughout the review period.
- In absence of record relating to actual time taken in replacing the wheel set and wagons remaining out of service, Audit could not assess loss of earning capacity of wagons.

Increased instances of hot axle cases are clear indication of heavy loading and poor maintenance of wagons.

⁹⁷ ECR, NWR and WCR.

⁹⁸ CR, ECR, NCR and WCR.

⁹⁹ ER, ECR

¹⁰⁰ CR (75 *per cent*), NEFR (80 *per cent*), NWR (60 *per cent*), SECR (35.71 *per cent*), WCR (33.33 *per cent*), SER (26.92 *per cent*), NCR (23.21 *per cent*), ECoR (18.60 *per cent*), NR (14.29 *per cent*), SWR (7.69 *per cent*), WR (7.14 *per cent*).

¹⁰¹ CR (2018-19 and 2019-20), NEFR (2019-20 and 2020-21), NWR (2018-19), SWR (2017-18 and 2020-21), NCR (2020-21), NER (2020-21) and WCR (2020-21).

¹⁰² NER, NEFR, WCR

v) **Poor Brake power or the rakes found running without Brake Power Certificate**

Brake Power Certificates (BPCs) are issued to the freight trains after examination and remain valid either up to the destination or for a specified distance. On safety considerations, it is mandatory that freight trains are to be moved only after it is certified by train examination department up to the distance authorized.

Audit observed from the data available with ZRs that no target was fixed by RB. No Poor Brake Power occurred in any Zone except NCR (4 cases in 2017-18 and one each in 2018-19 and 2019-20) and CR (one case in 2020-21). Detailed scrutiny of the issue through analysis of the related FOIS data, however, revealed that actual number of invalid BPCs during 2016-17 to 2020-21 was 2728. Audit findings are elaborated in Para No. 3.1.8.34.

Any untoward incidence due to invalid BPC adversely affect the train operations, besides financial losses as a result of damage to track and rolling stock.

(Annexure 3.12)

3.1.8.11 Utilisation of privately owned wagons as well as leased wagons

Railway acquires wagons under different wagon schemes as well as on lease basis from private parties. The facilities to be availed by the investors are specified in detail in the Wagon Investment Schemes.

In the current study, Audit examined the issues of rakes demanded and allotted for loading, reasons for pending demand, lease charges and maintenance charges for the leased wagons.

Zone-wise Audit findings are narrated below:

CR: Wagons under Own Your Wagon Scheme (OYWS) were taken on lease from five PSUs as shown in **Table 3.5**.

Table 3.5: Wagons taken on lease under OYWS in CR

Sl. No.	Name of the party owning wagons	Number of wagon and date on which taken on lease under OYWS	
1	Rashtriya Chemicals and Fertilisers Ltd.	416	10-09-1999
2	Indian Oil Corporation Ltd.	86	14-03-1998
3	Indian Oil Corporation Limited (IBP Division)	7	16-09-1996
4	Hindustan Petroleum Corporation Ltd.	29	11-02-1997
5	Bharat Petroleum Corporation Ltd.	135	09-12-1997
Total		673	

Source: Relevant records of CR

As per Para 7 of the agreement entered into with the PSUs, CR has to pay lease charges at the rate of 16 *per cent per annum* of actual cost of wagons for the first 10 years and at the rate of one *per cent per annum* for next 10 years. The agreement period was for 20 years.

RB vide Freight Marketing (FM) Circular No. 25 of 2019 dated 29 October 2019 directed that for wagons found mechanically and operationally fit for further service after expiry of 20 years (secondary lease) period, agreement should be extended for another 10 years or till the codal life of wagons whichever is earlier. The above extension (tertiary lease) shall be done by the ZRs. The lease charges payable should be decided by the ZRs subject to lease charges capped at maximum 0.5 *per cent per annum*. These instructions shall be effective retrospectively i.e. from the date of expiry of 20 years period with reference to the signing of agreement.

In CR, no fresh agreement was entered into by Railway with the lessor even after expiry of 20 years initial lease period though these wagons were considered fit for loading and were being loaded and available in FOIS as certified by the CCM (FS) and PCME's office. As a result, lease charges at the rate of one *per cent per annum* continued to be paid to the companies in violation of RB's above circular.

In all cases of wagon taken on lease under OYWS mentioned in **Table 3.5** above, the lease agreements had expired after 20 years. Non-execution of any fresh agreement after expiry of initial 20 years, revising the lease charges capped at maximum 0.5 *per cent per annum*, resulted in excess payment of lease charges to these companies to the tune of ₹ 25.54 lakh for the period from 2017-18 to 2019-20. The matter was taken up with CR administration in March 2021. Lease charges for the year 2020-21 were not paid as the bills were not preferred by the companies.

SER: In 2019-20, 195 wagons were taken on lease under OYWS and other schemes (M/s. TISC (TML)-11 nos., M/s. Rungata Mines Limited (RML)- 7 nos., M/S Rashmi Metalics (ORSM)- 3 nos. and M/s Adani-174 nos.). In 2019-20, demand of 265, 129 and 92 rakes were placed by M/s. TISC, M/s. Rungata Mines Limited (RML) and M/s. Rashmi Metalics (ORSM) respectively. Out of the demand made above, SER Administration could not supply 124, 69 and 50 rakes respectively due to delay in turnround.

WR: An amount of ₹ 1.34 crore stood unrealized on account of lease charges at the end of the year 2020-21. Further, Six BTPN wagons of M/s. Indian Oil Corporation (IOC) were condemned without assigning any reason for condemnation and without Enquiry Report. This resulted in excess payment of lease charges amounting to ₹ 0.42 crore on the condemned wagons. On being taken up, WR Administration stated that the above wagons were not condemned. Railway's reply is not tenable as no such documentary evidence was furnished to Audit.

In ten Zones¹⁰³, no wagon was taken on lease under OYWS during the review period.

3.1.8.12 Empty movement of Goods train

Empty running of wagons is wastage of transport capacity and result in loss of earning capacity but inescapable on account of unbalanced nature and quantity of outward traffic and inward traffic at terminals and need to supply empty wagons.

During the review period, empty haulage of wagons ranged from 35 to 37 *per cent* of total wagon kilometre. The summarized position of empty/loaded running of wagons on all ZRs is indicated in **Table 3.6**.

Table 3.6: Comparison of loaded and empty wagon kilometres

Sl. No.	Year	Total wagon km (loaded + empty) (in lakh km)	Wagon km loaded (in lakh km)	Percentage of loaded km to total km	Percentage of empty km to total km
1	2017-18	184570.18	118670.97	64.30	35.70
2	2018-19	193640.66	125654.92	64.89	35.11
3	2019-20	188457.23	117820.11	62.52	37.48
4	2020-21	152634.28	96690.90	63.35	36.65

Source: Annual Statistical Statements of IR

¹⁰³ ER, ECR, ECoR, NR, NCR, NER, NEFR, NWR, SR and WCR

Zone-wise position is indicated in **Annexure 3.13**.

Audit observed that in eleven zones¹⁰⁴, position of empty haulage of wagons deteriorated in 2020-21 as compared to 2017-18.

On examination of the fitness of wagons for loading of consignment, Audit observed the following irregularities:

- In CR, rakes were placed for loading without inspecting the rakes/wagons, resulting in rejection of wagons by the party due to various reasons. These unfit wagons were not detached and rakes were run without removing/repairing the empty unfit wagons. Non-replacement of the unfit wagons with fit wagons led to potential loss of earning capacity to the tune of ₹ 4.36 crore during the period from 1st April 2020 to 24th June 2021.
- In the ISCG siding/GUA and Jodapukur Coal Washery (JDWS) of SER, unfit wagons were allowed to run as empty wagons with loaded wagons resulted in loss of potential revenue to the tune of ₹ 4.62 crore.

In its reply, NEFR stated that inward loads are released on priority to generate empty wagons to run in down direction due to the reasons that BOXN empty wagons are utilized for loading of Coal & Gypsum. However, due to NGT ban and environmental issues coal loading decreased gradually. Gypsum loading was stopped due to no demand in the market. BCN empties were utilised for Bamboo loading which was stopped due to change in rate class from LR4 to LR3.

NEFR Administration remarks do not hold any substance, as the 'Percentage of Empty Km. to Total Km.' remained more or less same during the period under Review.

IR needs effective monitoring to minimize empty running of wagons and may evolve suitable mechanism to ensure that indents in the empty directions are met with.

3.1.8.13 Detention during loading/unloading operation

Effective utilization of rolling stock calls for supply of rakes to customers as per demand and delivery of consignments at the destination minimizing *en-route* detention to rolling stock. Hence, timely loading/unloading of wagons is necessary to make wagons available for further loading. Railways have laid down norms for permissible detention for various types

¹⁰⁴ CR, ER, ECoR, NR, NCR, NER, SCR, SER, SECR, SWR and WR

of wagons during loading and unloading operations in sidings/goods sheds¹⁰⁵.

During examination of data regarding detention at 120 loading/unloading points in 16 ZRs during the selected months of May, December and March of 2017-18 to 2020-21, Audit observed that 75.32 lakh wagons suffered detentions in selected goods sheds and Loading/Unloading points over IR during loading and unloading operations with consequential potential loss of earning capacity of ₹ 1266.69 crore.

(a) Analysis of FOIS data

Audit examined the trend of Terminal detention- Loading/Unloading/ Turnaround detention through analysis of FOIS data. Results are indicated in **Table 3.7**.

Table 3.7: Terminal Halt reason-wise – year-wise – count

Sl. No.	Halt Reason	2016-17	2017-18	2018-19	2019-20	2020-21	Total	%age
1	Examination	65172	64298	64649	55040	68233	317392	7.10
2	Loading	354068	369293	389651	355582	441286	1909880	42.72
3	Re-Booking	536	607	1316	1915	475	4849	0.11
4	Unloading	345197	358049	376628	345506	428340	1853720	41.46
5	Weighment	5	4	10	10	10	39	0.00
6	Not mentioned	61669	63093	64812	69039	126475	385088	8.61
Total		826647	855344	897066	827092	1064819	4470968	100

Source: FOIS data

From the above table, it is observed that Loading/Unloading comprised 84.18 *per cent* of the halts. Reason-wise composition of number of halts was quite consistent during 2016-17 to 2019-20. However, halts on account of loading/unloading activities increased in 2020-21. Count (and percentage) of unloading was slightly lower than loading.

(b) Terminal Halt type wise – year-wise – halt time

There are three parts of terminal detention:

- Halt0–Time between Load arriving at the destination and placement for loading/unloading/examination.

¹⁰⁵ Railway Board's Master Circular on Demurrage, Stabling, Wharfage and Stacking TC-I/2016/201/1 dated 19 May 2016.

- Halt– Time taken for loading/unloading/examination (discussed in the earlier section).
- Halt1– Time between release of rake after loading/unloading/examination and departure of the new load.

Table 3.8: Halt Type-wise Terminal detention

TYPE	2016-17	%Age1	2017-18	%Age2	2018-19	%Age3	2019-20	%Age4	2020-21	%Age5	Total	%Age6
Halt0	3263486.46	20.23	2943510.59	18.62	2885844.43	18.53	3245304.25	21.03	4585092.26	23.05	16923316.41	20.43
Halt	6417171.78	39.79	6315001.5	39.95	6407333.73	41.14	5943771.74	38.52	8249969.08	41.47	33333407.23	40.24
Halt1	6448857.89	39.98	6549261.21	41.43	6280535.11	40.33	6240930.2	40.45	7058758.89	35.48	32578505.49	39.33
Total	16129516.13	100	15807773.3	100	15573713.27	100	15430006.19	100	19893820.23	100	82835229.12	100

Source: FOIS data

It can be seen from the above table that the percentage composition of the three types of halts was almost same across all the five years. 20 per cent of the terminal halt was between arrival of a load and placement of the load for loading/unloading/examination. The time between placement & release and the time between release & departure of next load were same (40 per cent each). Therefore, almost 60 per cent detention time was on operational reasons during each of the five years with consequential loss of earning capacity of wagons.

3.1.8.14 Recovery of Demurrage Charges

Free time is allowed for completion of loading/unloading operations at station/ siding/ loading/unloading points. Detention beyond permissible limit increases the wagon turn round and leads to non-availability of wagons for loading and loss of earning capacity of the detained wagons. Demurrage charges (DC) at the prescribed rate¹⁰⁶ are leviable for detention beyond free time.

Audit reviewed the trend of accrual of DC, its waiver and causes of accrual/waiver in 114 selected loading/unloading points during the review period, revealed that:

- DC of ₹ 925.66 crore was accrued on 193526 rakes (34.66 per cent) out of 558261 rakes dealt with during the period under review. ₹ 221.73 crore was waived and ₹ 693.77 crore was realized.

¹⁰⁶ Railway Board's Master Circular on Demurrage, Stabling, Wharfage, Stacking No. TC-I/2016/201/1 dated 19 May 2016.

- Outstanding DC was ₹ 24.08 crore at the beginning of 2017-18, which enhanced to ₹ 34.68 crore at the end of 2020-21.
- The percentage of waiver of DC ranged between 0.12 (SER) and 93.76 (CR). Main reasons for frequent accrual of DC were bad weather condition, shortage of labour, congestion of unloading platform, local festivals, power failure, non-availabilities of basic facilities at stations, delay in coal tipping, traffic restriction, bunching of rakes, heavy congestion in yard, agitation by local people, wet coal, Covid 19 pandemic *etc.*

In its reply, NEFR stated that the DC of Numaligarh Refinery Oil Siding (NRSR) at the end of financial year 2017-18 was ₹ 5,55,500 which have been cleared on 30 March 2019. Against New Jalpaiguri (NJP), an amount of ₹ 443032 is still lying outstanding due to reasons of court case, waiver application is under examination. Railway authority is allowing waiver as per Standard Operating Procedure (SOP) and Railway Board's master circular demurrage-wharf age/waiver/2016/0 dated 19 May 2016.

Railway Administration was silent on New Guwahati (NGC) Goods Shed. However, reasons furnished in respect of NJP Goods Shed indicated improper management on the part of Zonal Railway Administration.

Railway needs to ensure that DC is not waived as a routine nature so that deterrent effect of levy of DC is not diluted. Existing recovery mechanism also needs to be strengthened.

3.1.8.15 Infrastructural facilities at loading/unloading points

Para 606¹⁰⁷ of Indian Railway Code for the Traffic Department makes provision for Infrastructural facilities at Goods sheds.

In June 2007, RB identified 50 goods sheds over IR for up-gradation to develop as Freight Terminals. Norms for the number of goods shed lines required for handling the traffic in the identified goods shed is as under:

Less than 15 rakes/month	One full length line.
15-29 rakes/month	Two full length lines
More than 30 rakes/month	Three full length lines with at least one High Level Platform with covered shed

Source: RB's orders of June 2007

¹⁰⁷ Proper approach roads and circulating areas, Adequate goods shed accommodation and goods platforms, Waiting rooms for traders and merchants with electric fans (where electricity is available), Adequate lighting arrangements in goods shed premises, Drinking water and toilet facilities, Telephones in big goods offices, Improved delivery windows, Cranes and other mechanical handling devices, (ix) Weighbridges, Fire-fighting equipment.

Audit test checked the Infrastructural facilities available at 134 selected goods sheds/Sidings (loading/unloading points) thorough Joint Inspection with concerned Railway officials. Audit observed that basic infrastructural facilities were not provided in a substantial number of selected loading/unloading points including goods sheds identified to develop as Freight Terminals (Non-availability of required Infrastructural facilities indicated in **Annexure 3.14**, which adversely affected placement, removal and loading/unloading operations causing detention to rakes.

Railways need to address the deficient infrastructural facilities with due priority.

3.1.8.16 Late start of goods train

Late start of goods train causes detention to wagons in the yard leading to under-utilization of wagon stock. The main reasons for the late start of goods trains are non-availability of power (engine) and crew, delay in inspection by Carriage and Wagon (C&W) inspectors, delay in clearance, *etc.*

Ministry of Railways, in its ATN on Report No. 31 of 2014, mentioned that the steps have been taken to reduce the incidences of late start of goods trains.

In the current study, Audit reviewed the steps taken to reduce the incidences of late start of goods train and its impact during the selected months of May, December and March of 2017-18 to 2020-21, revealed the following as indicated in **Table 3.9**.

Table 3.9: Steps taken to reduce the incidences of late start of goods train and its impact

Total No. of Goods trains started	Late starting of Goods trains	Remarks
77919	60968 (78.25 per cent)	<p>The position of late start trains remained almost same during the review period.</p> <ul style="list-style-type: none"> ➤ Audit analysed cause-wise delayed start of 48306 Goods trains in 13 zones¹⁰⁸, 28368 trains (58.73 per cent) and 10339 trains (21.40 per cent) were delayed for want of path and want of loco respectively. This clearly indicates that Railway failed to ensure timely availability of locos for running Goods trains and provide dedicated paths for movement of goods trains which contributed to 80.13 per cent of delayed start. ➤ In NCR and NWR, all the goods trains started late. ➤ In SCR, analysis of the FOIS data at four selected loading points¹⁰⁹ revealed that the specific reason for late start of the trains was not filled in several cases. Non-filling up of this vital information in FOIS deprived Railway to use the date analysis and corrective action in future operations. Late start of goods trains ranged up to 128:19 hours. ➤ In SER, Average delay per train was abnormally high at ACYS/Abada (29:24 hours) and SGTY (41:26 hours). All trains started late from SGTY. ➤ In Santaldih Thermal Power station (STPS) siding, Santaldih Railway Yard and Mahuda Yard of SER, 2507 outward rakes were detained due to want of loco/non-availability of movement order resulted in potential loss of earning capacity of wagons to the tune of ₹ 73.49 crore.

Source: Zonal Railways relevant records

From the above, it is indicated that efforts taken by Railways were not sufficient to minimize incidences of late running of trains for want of loco, crew and path. This clearly indicates that the constraints still persist.

¹⁰⁸ ER, ECR, ECoR, NR, NER, NEFR, NWR, SR, SCR, SER, SWR, WR and WCR

¹⁰⁹ RUSG, GXSG of SC Division and KSLK, PKPK of BZA Division

3.1.8.17 Unconnected wagons

Commercial Manual (Para 2117, sub-para 7) stipulates that unconnected wagons are to be connected within 72 hours. The Commercial department of the divisions has Non-Receipt (NR) Cells to deal with the tracing of unconnected wagons. FOIS application is intended to serve all major aspects/purposes of goods operation, including tracking of rakes/wagons on real time basis.

Analysis of data of unconnected wagons and their connection during the period under review revealed the following:

- Out of 3242 wagons found un-connected, only 686 wagons (21.16 *per cent*) were connected within 72 hours and 2232 wagons (68.85 *per cent*) in 14 zones¹¹⁰ were connected beyond 72 hours. In eight zones¹¹¹, 324 wagons (9.99 *per cent*) remained unconnected. Total 150 unconnected wagons of earlier period were connected in SECR during the review period.
- Out of 16 zones, only ten zones¹¹² could assess time taken in connecting unconnected wagons beyond 72 hours. Loss of earning capacity of wagons for the time taken for connecting 814 wagons by these ten zones has been assessed in Audit at ₹ 33.08 crore, based on the time taken in connecting unconnected wagons.
- NR cell was functional in ECR, NER, SECR and NR (except Firozpur division where Commercial Control/FZR looks after the working of NR Cell on case-to-case basis).
- In only five zones (ECR, NER, NR, SECR and WR), FOIS was utilized to connect unconnected wagons. FOIS was partially utilized in three zones (ER, NEFR and WCR). In the remaining zones, FOIS was not utilized for connecting unconnected wagons.

(Annexure 3.15)

NEFR in its reply stated that Lumding Division has already been advised to arrange for disposal of the rest unconnected/undelivered wagons also as per extant Railway procedure without further delay.

Railway Administration admitted that 10 Wagons could not be connected till the date of Audit. However, despite availability of FOIS, they failed to connect the unconnected Wagons within 72 hours.

¹¹⁰ CR, ECR, ECoR, ER, NCR, NER, NEFR, NR, SECR, SER, SR, SWR, WCR, WR

¹¹¹ CR, ECR, ER, NEFR, NR, SECR, SER, WCR

¹¹² ECR, NCR, NER, SCR, SECR, SER, SR, SWR, WCR and WR

3.1.8.18 Standardisation of Goods rakes

To achieve higher speed and minimal delivery time, standardization of rake composition is an essential factor. Non-standardisation of rakes is bound to affect the carrying capacity and speed of wagons.

In the current Audit, it examined formation of rakes with wagons having different speed potentials and observed that in eight¹¹³zones, rakes were formed with wagons having different speed potentials. Attaching high speed wagons with wagons having lower speed potential adversely affected average speed of goods trains and intended benefit of higher speed of rakes was not achieved.

Sub Objective 2: Whether wagon maintenance was effective and wagons were condemned as planned?

3.1.8.19 Maintenance of Wagons

Primary maintenance/repairs of wagons are carried out in the wagon maintenance depots. Train examination (TXR) in wagon maintenance depots is periodically carried out to assess the condition of wagons and TXR examination in freight terminals certifies the fitness of wagons for the next run. Major repairs and periodical overhaul (POH) are carried out in workshops.

3.1.8.20 Wagon examination, nature and cost of repairs to wagons in sick line and detention

Defects in a wagon attached to a rake, if noticed at a station/siding are immediately intimated by the station/siding staff to the next station for remedial action by the C&W staff either at the station or in the yard. In case the wagons found unfit for operational activities, the same are separated from the rake and are placed on the sick lines for repairs.

The above issues were test checked in Audit. In absence of any parameter for normal time for repair, Audit has considered two days as normal time for repair for the purpose of calculation of detention to wagons at sick line and observed the following:

- During the review period, 52280 wagons were declared unfit for operational activities and sent to sick lines for repair. Wagons were detained for 46296 days in sick line/terminal yard beyond two days with consequential potential loss of earning capacity to the tune of ₹ 20.13 crore, out of which ₹ 16.27 crore (81 *per cent*) was in eight terminal yards under four zones (WCR, ECoR, WR and NCR).

¹¹³ CR,ER, ECoR, NCR, SR, SER, SWR, WCR

- The main reason for abnormal detention of wagons was shortage of materials, shortage of staff, out of placement and heavy repair.
- 317 wagons declared unfit and warranted repairs within 90 days of POH for which 540 wagon days were lost. IR incurred ₹ 19.78 crore towards cost of repair of wagon in sick line.

Detention due to shortage of materials and staff indicates deficient inventory management and human resource management respectively. Wagons becoming sick within 90 days of POH are indicative of poor workmanship in workshops.

In its reply, NEFR stated that wagon examination in yards are designed for rake examinations, on train repairs, sick wagon detachments, sick wagon repairs and detachment of wagons for POH and/or Routine Overhaul (ROH). In course of rake examination, if a wagon(s) is (are) found beyond on train repairs, Wagon(s) is (are) detached & placed in sick line for repairs using repair facilities of EOT crane, welding plants, wheel sets replacements, wheel turning, component/sub-assembly replacement etc.

NEFR Administration's remarks are general in nature. They did not furnish any specific reason for 'Total Period of Detention (beyond two days) to Wagons given for repairs in Sick Line' in NJP during the period under Review.

3.1.8.21 Non-availability of infrastructure facility as well as required machinery and plant at Terminal Yards

Necessary infrastructure facilities, machinery and plant are required in the terminal yards for conducting intensive examination and maintenance of wagons as prescribed in the Chapter 11 of the Maintenance Manual for Wagons. Terminal yards need adequate infrastructure to minimize wagon detention. Inadequate infrastructure in the Terminal yards contributes to detention of wagon during operation.

Audit assessed the necessary infrastructure facilities and Machinery & Plant at 33 selected Terminal Yards, having high volume of traffic, in 15 zones (except NWR where there is no Terminal Yard) through physical verification including Joint Inspection along with Railway officials. The list of important infrastructure facilities/ Plant and Machineries required for maintenance and their non-availability in the selected terminal yards is indicated in **Annexure 3.16**.

Audit observed that deficient infrastructural facilities adversely affected placement, removal, Loading/unloading operations causing detention to rakes and centre to centre distance between tracks for nominated lines provided for conducting intensive examination was inadequate.

In its reply, NEFR stated that it is factually correct that track centres between examination lines are inadequate. For examination Yards, pathways between lines is more important than track centres. It is imperative that lines with lesser track centre will have less space for pathways. All efforts are being made continuously to remove infrastructural in-adequacies. Efforts are also being continued to reduce detentions, clear backlogs and control wagon in-effective percentage.

3.1.8.22 Periodical Overhaul (POH) in Workshops

For the purpose of uninterrupted operational services, wagon stock is required to be periodically overhauled (POHed) at prescribed intervals as detailed in Para 206 of the Maintenance Manual for Wagons. On receipt of newly built wagons, intensive examination is conducted before operational activities and its maintenance periodicity (POH/ROH *etc.*) is determined and recorded on the wagons. Yearly target for POH of wagons is fixed by RB based on capacity of workshops. Factors like ongoing modernization works, expansion works are also suitably considered in fixing the targets.

Audit examined annual target for POH/ROH, their achievement and shortfalls and observed that:

- Target for POH could not be achieved by 12 zones¹¹⁴, shortfall ranging between 4 (NWR) and 872 (SECR) number of wagons. Reasons for shortfall were generally less feed of wagons, undertaking ROH and lockdown/working with less staff due to pandemic.
- Target for ROH could not be achieved by nine¹¹⁵ zones, shortfall ranging between 3 (ECR) and 1125 (NR) number of wagons. Main reasons for shortfall were less feed of wagons, staff shortage and material constraint.
- In six zones¹¹⁶, ROH was done against nil targets.
- In NCR, RB had fixed target to carry out POH of wagons only but besides carrying out POH, Workshop authority carried out ROH of 546 wagons during 2017-18 to 2020-21 and the same was also included in the outturn of POH. This resulted in the under-utilisation of manpower as well as the infrastructure of the POH workshop.
- In response to Audit query on non-achievement of target, Workshop Authority of SER stated that the major factors that had a direct effect on outturn were availability of proper mixed feed, manpower *etc.*

¹¹⁴ CR, ER, NR, NCR, NER, NEFR, NWR, SR, SER, SECR, WR, WCR

¹¹⁵ CR, ER, ECR, ECoR, NR, SR, SER, SWR and WR.

¹¹⁶ ER, ECoR, NCR, NER, NWR and WCR

- In SWR, out of 10932 wagons ROHed, 920 wagons (8.41 per cent approx.) were received at the depot within 100 days of ROH resulting in loss of potential earnings of these wagons. Common defects noticed were damages to body/door/floor/channel, etc.
- In four¹¹⁷ zones, Joint Procedure Order (JPO) existed between different departments of Railways.

Thus, Railway not only failed to achieve the target of POH of wagons but also was not aware of the specific reasons for shortfall due to ineffective internal control mechanism.

Minimum standard time for POH/ROH may be prescribed for early availability of freight stock. Reasons for shortfall may be recorded for better analysis and monitoring of performance by the Management.

3.1.8.23 Erroneous despatch of wagons not due for POH to workshops and wagons overdue for POH

(a) Erroneous despatch of wagons not due for POH to Workshops/Sheds

Audit scrutiny of data maintained in 15 workshops¹¹⁸ over 14 Zonal Railways (there was no workshop in ECoR and SWR) revealed that:

- Total 9427 wagons not due for POH were erroneously received in the workshops for POH and returned to Division/Depot with total delay of 193541 days with consequential loss of earning capacity to the tune of ₹ 82.85 crore.
- Maximum time for returning wagons erroneously received for POH was taken by ER (1653, 1697, 1778, 1931 and 2130 days in five cases) and SR (568 days in one case) both in the year 2020-21.

Thus, erroneous despatch of wagons not due for POH to workshops, though next date of POH is stenciled on each wagon, led to unnecessary movement of wagons and delay in return of these wagons after unnecessary detention and blocking of track area, besides potential loss of earning capacity. The main reasons for erroneous despatch of wagons, not due for POH, was lack of co-ordination between Divisional Operating Authorities and Workshop Authorities.

(Annexure 3.17)

In its reply, NEFR stated that reported 'Not due POH' cases in 2017-18, 2018-19 and 2019-20 are 14, 34 and 29 respectively. These are 'special repair

¹¹⁷ NR, SR, SWR, WCR.

¹¹⁸ KWV of CR, JMP of ER, SPJ of ECR, JUDW of NR, JHANSI of NCR, IJN workshop and Gonda Depot of NER, NBQ workshop of NEFR, Ajmer Diesel Loco & Wagon Workshop of NWR, CW/PER of SR, WRS/GTPL of SCR, KGP of SER, Wagon Repair Shop /Raipur of SECR, DHD of WR, WRS, KOTA of WCR.

cases'. Special repair cases are the repairs, not executable by Sick lines due to nature of damages and inadequacy of sick line infrastructure. The cases are sent to Workshop with Headquarters permission after due scrutiny.

NEFR Administration's reply was not tenable as quoting the MCDO of Workshop Manager of NBQ, it was pointed out that 56, 40 and 23 Wagons (not due for POH) were sent for POH in 2017-18, 2018-19 and 2019-20 respectively. As such, the figures projected now do not match with the MCDO's figures of the Workshop Manager.

Moreover, it was observed that there was no special repair during 2017-18 and 2018-19, though 23 wagons were sent for special repair in 2019-20. Hence, the claim of sending 14, 34 and 29 wagons in 2017-18, 2018-19 and 2019-20 respectively for special repair was not acceptable.

(b) Wagons overdue for POH

Audit examined the position of Wagons overdue for POH and its impact on freight operations during the review period and observed as indicated in **Table 3.10**.

Table 3.10: Position of Wagons overdue for POH

Total Numbers of wagons overdue	Overdue period					Remarks
	Less than 3 months	3 to 6 months	6 months to 1 year	1 year to 3 years	More than 3 years	
1	2	3	4	5	6	7
151721*	78934	42366	15926	3052	365	*All Zones excluding SWR (no wagons workshop) and ECR as no POH was undertaken in these zones.

Source: Zonal Railways relevant records

From the above table, it can be seen that out of 151721 wagons, 3417 wagons were overdue for POH for more than one year in 13 zones¹¹⁹. Out of 3417 wagons, 365 wagons were overdue for POH for more than three years in 12 Zones¹²⁰. The position was particularly high in NCR (115 nos.), ER (70 nos.), NR (54 nos.) and SCR (41 nos.). Out of 137226 wagons overdue for POH, 15926 (11.61 *per cent*) were overdue for POH for more than 06 months to one year in 13 Zones¹²¹.

In NEFR, presence of wagons overdue for POH on line had an adverse impact on operations as a large number of wagons had to be declared unfit. In WR, wagons overdue for POH for more than six months were on run compromising safety aspects. In SCR also, lack of monitoring and

¹¹⁹ CR, ER, NR, NCR, NER, NEFR, NWR, SR, SCR, SER, SECR, WR and WCR

¹²⁰ CR, ER, NR, NCR, NEFR, NWR, SR, SCR, SER, SECR, WR and WCR

¹²¹ CR, ER, NR, NCR, NER, NEFR, NWR, SR, SCR, SER, SECR, WR and WCR

co-ordination in Mechanical Department resulted in continued operation of overdue wagons compromising safety aspect.

In response to Audit Observation on the issue, NER stated that POH of wagons in the workshop was normally taken upon First In First Out (FIFO) basis rather than upon the age of becoming due for POH. SR stated that POH wagons all over the divisions were moved to shops as POH special, only after accumulation of sufficient numbers since it was not feasible to run one or two wagons, as and when it becomes due and it also depends on the availability of slot at Workshop. WR stated that overdue wagons were offered for loading due to increased demand of wagons as per permission of RB to run the overdue POH wagons for three to six months with preventive maintenance schedules and TXR permission of fit to run the wagon.

Railway's contentions are not acceptable. Wagons remaining overdue for POH indicated improper and ineffective monitoring of maintenance activities of wagons. Audit further observed that Railway had not given due importance on periodical maintenance of wagon stocks to keep them in good condition and avoid possibility of damages and accidents as well as safety aspects of wagons overdue for POH. Running of wagons overdue for POH compromised safety aspects.

Railway needs to ensure timely POH of wagons through close monitoring, periodical review and adequate internal control mechanism for uninterrupted operational services.

3.1.8.24 Detention to wagons in workshop prior to/during/after POH

Unnecessary detention of wagons in workshop prior to, during and after POH leads to loss of earning capacity of wagons. There are instances of wagons not being taken up for POH immediately on its receipt due to various reasons. Similarly, more time is taken to complete the POH than the prescribed time. Further, there are instances where wagon turned out after POH are not immediately sent for traffic use and kept in workshop/yards.

In response to PAC's observation on Report No. 31 of 2014 regarding "Management of Goods trains in Indian Railways", RB stated that they were trying to complete POH within five to eight days.

In the current study, Audit observed that:

- There was unnecessary and avoidable detention of 130914 wagons in yards before they were sent for POH resulting in loss of 1856280 wagon days. Wagon Repair Workshop/Jhansi of NCR alone accounted for 22 *per cent* (28855 wagons) of the wagons detained

in yard before sending for POH with loss of 447403 wagon days. Maximum detention prior to POH was 2581 days in ER.

- There was detention of 35494 wagons during POH beyond 10 calendar days with loss of 965785 wagon days. Maximum days taken for POH were 1103 days in NCR.
- 116368 wagons could not be put in service immediately after POH and detained in yard resulting in loss of 767366 wagon days. Of these, 23047 wagons (20 per cent) were detained after POH with loss of 256353 wagon days (33 per cent) in the Guntapalli wagon repair shop of SCR. Maximum days of detention after POH were 750 days in NCR.

From the above, it is indicated that due to detention of wagons (prior to, during and after POH) at 13 workshops of 13 Zonal Railways resulted in loss of earning capacity of ₹ 1406.75 crore.

(Annexure 3.18)

3.1.8.25 Special repairs to wagons

Repairs of wagons in workshops involving more than 100 man-hours, carried out either in the workshops or in major sick lines, are called Special Repairs. Special Repairs to wagons are carried out in workshops or major sick lines only after necessary estimates have been prepared and sanctioned by the competent authority.

Audit observed that:

- During the review period, total 13205 wagons were received for special repair. Of the 16 zonal railways, there was no workshop in SWR and ECoR while no special repair was carried out in NWR. Further in four zones¹²², special repair was not carried out during 2017-18 and 2018-19. In two zones¹²³, special repairs were not carried out during 2017-18, 2018-19 and 2019-20.
- Date of drawal of Completion Report was not available for 6551 cases. Completion Reports were not drawn for 1443 wagons in four zones¹²⁴.
- In five zones¹²⁵, no estimate was prepared for special work for 7961 cases.

¹²² NCR, NEFR, SER and SECR

¹²³ ER and WR

¹²⁴ ECR, NER, SR and WR

¹²⁵ CR, ECR, NER, SECR and WCR

- In SR, excess expenditure of ₹ 8.35 crore over fund allotted was incurred for 425 wagons.
- Out of 7000 wagons allotted by RB for special repair, only 2744 wagons were repaired by ECoR in Sick Line/Waltair and balance wagons could not be repaired due to non-handing of the wagons.

3.1.8.26 Review of unloadable wagons

Wagons become unloadable primarily due to improper handling at the stations/ sidings. Such unloadable wagons require increased repairs and consequently suffer additional detention with its resultant effect on wagon turn round. The main reason attributed for such incidences was improper handling by the private siding owners.

In the current study, Audit observed the following:

- During the period under review, 453971 wagons became unloadable, out of which 216705 (47.74 *per cent*) wagons were in the age group of 1 to 15 years i.e. even before completing half of the codal life of 30 years. Further, 70815 (15.60 *per cent*), 67521 (14.87 *per cent*) and 82936 (18.27 *per cent*) wagons became unloadable in the age group of 16 to 20 years, 21 to 25 years and 26 to 30 years respectively. In some zones, Railway did not maintain figures of unloadable wagons aged above 30 years.
- In SER, 156416 wagons became unloadable during review period out of which 84539 (54.04 *per cent*) wagons became unloadable up to age group of 15 years.
- In SWR, 19963 wagons became unloadable during 2017-18 to 2020-21, out of which 9290 wagons (46.53 *per cent*) became unloadable within six to 10 years.

The reasons for wagons becoming unloadable were attributed to improper handling by the party causing damages to the Stanchion pillar, Body, Middle bar, Top channel, Floor, Roof leakage, door broken due to hitting mast, wheel defective, CBC Housing rivet loose, DVL/Brake Cylinder Leakage, shaft bent, head stock, etc.

Incidences of unloadable wagons could be minimized with proper monitoring system at loading/unloading points and by taking punitive action on the parties responsible for making the wagons unloadable due to improper handling.

3.1.8.27 Local passing of wagons rejected by Neutral Control Office

The functions of Neutral Control Office (NCO) at Workshop/Wagon Examination Points/Yards at ZRs are for independent examination of the wagons repaired/ POHed before actual handing over to open line for

operations. Repaired/POHed wagons can be inducted into service only after they are certified FIT by NCO. Those having defects are detained for further attention. But many of those rejected wagons are passed locally and put into service for use, compromising safety.

In the current study, Audit examined the issues of wagons not offered for examination to NCO and passed locally as well as local passing of wagons rejected by the NCO during the review period at the selected examination points and workshops and observed as detailed in **Table 3.11**.

Table 3.11: Details of wagons not offered for examination to NCO and passed locally as well as local passing of wagons rejected by the NCO

Total No. of Wagons examined	No. of Wagons offered to NTXR (NCO) Examination	No of wagons not offered to NTXR and passed locally	No.of Wagons rejected by NTXR (NCO)	No. of rejected Wagons subsequently passed locally	Remarks
804605	500812	303793	45325	26751	Local passing of wagons is. 330544 (303793+26751) i.e. 41 per cent of total no. of wagons examination.

Source: Relevant records of selected examination points and workshops

From the above table it can be seen that out of 804605 wagons examined during the review period, a total of 330544 wagons (303793 + 26751) i.e. 41 per cent of wagons were passed locally. Reasons for local passing was due to non-availability of NTXR Cell, non-availability of NTXR staff, Urgency of departmental stock, non-working of NTXR on Sundays and Holidays, shortage of material and manpower etc. Out of 45325 wagons rejected by NTXR (NCO), 26751 wagons (59 per cent) were subsequently passed locally and put into service compromising safety.

In October 2012, RB instructed to strengthen deployment of NTXRs and a few NCO staff at ROH depots. Audit observed that SWR had managed to establish only one NCO at one Terminal Yard in 2019-20. No NCO at ROH Depots/Examination Points were established for which wagons were being handed over for operations without passing by NCO.

Thus, local passing of wagons and not offered to NCO for examination resulted in compromising the safety aspects.

In its reply, NEFR stated that it is factually correct that local passing per cent in NGC was high during the review period. NTXR not working in

holidays contributed less than poor workmanship and material management. Matter was taken into cognizance by Railway Board also. Efforts are being made to minimize the cases.

NEFR Administration attributed the high percentage of local passing of Wagons rejected by NCO, to poor/bad workmanship. This is a serious matter as far as safety of train operations is concerned.

IR should ensure quality control and strengthen internal check mechanism of POHed wagons before sending for NCO approval. IR needs to ensure close monitoring and take appropriate action to minimize local passing of wagons rejected by NCO.

3.1.8.28 Recovery of accident damage and deficiency charges

As per Para 5 of the Joint Procedure Order of September 2015 on Wagon damages, read with Clause 18 of the Standard Form of Agreement of Private Siding, cost of accident damages and deficiency charges for damages caused to wagons inside the siding premises are to be preferred/realised from the siding owner.

In the current study, Audit observed that ₹ 29.08 crore towards damage and deficiency charges remained unrealized from various parties. Zone-wise position is indicated in **Table 3.12**.

Table 3.12: Zone-wise position of recovery of accident damage and deficiency charges

Sl. No.	Name of the Zonal Railway	No. of wagons damaged by the parties	Amount of bill preferred by the Railways (in ₹)	Amount to be recovered from the party (in ₹)
	CR	137	5243594	5243594
	ER	727097	53371388	2408284
	ECR	710	7687088	7687088
	ECoR	NAV	272077166	93328462
	NR	459	27100037	26813265
	NCR	116	7564944	5687031
	NER	847	56103136	570415
	NEFR	65	0	970614
	NWR	240	11654381	11654381
	SR	118717	10897833	10683690
	SCR	89008	17913352	6889282
	SER	952	33040330	24126192
	SECR	647	86695611	5962646
	SWR	854	9738667	7941743
	WR	2539	73360905	72808984
	WCR*	805	8936445	8049790
Total				290825461

Source: Zonal Railways relevant records

Note: In WCR, assessment of cost of damage and deficiency is worked out on the basis of average cost of damage per wagon. While preferring bills for damage to wagons, the elements of Material cost, labour cost, departmental charges and GST are also added with this average cost. The JPO of SECR is also consulted for this purpose; hence, there is difference in the assessed cost and bills preferred.

In SER, the amount recovered towards accident damage and deficiency charges during the above period included recovery of outstanding amount. In four¹²⁶ cases in three zones, bills amounting to ₹ 0.91 crore were not realized by Railways, reasons for non-recovery being non/delayed preferment of bills, non-maintenance of proper record *etc.*

From the above, it is evident from the above that there was deficiency in internal control mechanism in preferring bills and recovery of accident damage and deficiency charges.

NEFR Administration has accepted the audit contention.

3.1.8.29 Defects in newly built/supplied wagons

Para 15 of General Conditions of Contract (GCC), part of the contracts placed on the wagon manufacturers, stipulates that in case any wagon supplied by the firms found defective within warranty period of 30 months from the date of delivery or 24 months from the date of commissioning, whichever is earlier, the same will be rectified by the Railways, if not attended by manufacturer. Cost of such repairs is to be recovered from the supplier. Rectification/repairs results in loss of wagon days and consequential loss of earning capacity.

The above issue was examined and Audit observed that:

- Out of 11622 newly manufactured wagons, 292 wagons¹²⁷ became defective during warranty period and had to be withdrawn from service for necessary repairs. This resulted in loss of 4761 wagon days with consequential loss of earning capacity of wagons to the tune of ₹ 2.15 crore.
- The major defaulting firms were Jupitar Wagons Limited and Titagarh Wagon Limited.
- Cost of repair of defective wagons for ₹ 0.15 crore and ₹ 0.04 crore stood unrealized from the defaulting firms in ECoR and SER respectively.

3.1.8.30 Condemnation of wagons

As per Maintenance Manual for Wagons, normally condemnation has to be carried out on the basis of age-cum-condition basis. In addition, under-aged wagons and wagons involved in accidents also condemned on condition basis.

¹²⁶ Two for HLZ/KOPT in SER; MKFP of NCR; NGC of NEFR

¹²⁷ 2017-18: ER (9 nos.) and ECoR (23 nos.), 2018-19 : ER (31 nos.), ECoR (93 nos.), SER (1 no.) and WCR (1 no.), 2019-20: ER (12 nos.), ECoR (18 nos.), NR (2 nos.), SER (15 nos.) and 2020-21: ECoR (53 nos.) and SER (34 nos.).

Scrutiny of records Audit observed that:

- Running of over-aged wagons (over-aged by more than three years) was in increasing trend (from 8.21 *per cent* in 2017-18 to 43.33 *per cent* in 2020-21).
- In ER, 158 and 383 over-aged wagons of more than three years were running on line during 2018-19 and 2019-20 respectively. In SCR, 331 over-aged wagons of more than three years were running on line during 2020-21.
- In eight zones¹²⁸, no over-aged wagons ran on line.
- Out of 11347 wagons condemned, 6476 wagons (57 *per cent*) were condemned prematurely (including accident damaged wagons).
- In case of premature condemnation of wagons (including accident damaged wagons), financial justification in respect of 363 cases were not available in seven ZRs¹²⁹.
- 20 wagons of SWR were condemned prematurely at other railways due to accidental damages. However, write-back adjustment was not made for an amount of ₹ 2.07 crore for all these condemned wagons.

Over-aged wagons are prone to derailments/accidents. The safety of freight trains was compromised by running over-aged wagons.

Sub-objective 3: Whether proper Monitoring mechanism exists to oversee the smooth and efficient freight train operation?

3.1.8.31 Monitoring through Control Offices

The Control Organization of IR is the nerve centre of train operations. It controls the asset management of the Railways, in a dynamic situation, round the clock incessantly moving trains on its entire network. This basic structure of Operating Control on IR exists at the Divisional level, which has also been extended to Area Control levels. In addition, Central Control Office is situated at the Headquarters and one at RB. Main objectives of the control organization are:

- To ensure punctuality of the Mail trains
- To ensure maximum utilisation of the rolling stock
- To ensure maximum utilisation of the section capacity

¹²⁸ ECR, NR, NEFR, NWR, SER, SECR, SWR and WCR.

¹²⁹ CR, ECoR, ECR, NEFR, SR and SWR.

- To increase the speed of the goods trains
- Maximum utilisation of the train crew

Regular conference with yards, terminals and the adjoining Division is held by the Control Offices for exchange of information regarding forecast of trains in yards, completion of loading/unloading at sidings *etc.* and interchange with adjoining Divisions.

In the current study, Audit observed that regular conferences were held by the Control Offices with Yards/Terminals and adjoining divisions. Regular counselling of the crew members was done. Reports for observing availability of wagons/rakes as per requirement were generated for reporting and decision making. The facilities available in the system were efficiently utilised by the Control offices.

3.1.8.32 Freight Operations Information System (FOIS)

FOIS is an On-line Real-Time system based on absolute current state-of-art technology and efficient communication system for optimum utilization of rolling stock, facilitating decision-making, automate and augment the existing workflows and assist in marketing and policies formulations. Monitoring is enforced through FOIS so that more productive work is done by better planning. In respect of IR customers, the system envisages Ease of Doing Business, Transparency in Freight Business, Access Convenience and Automatic application of Schemes and Rebates. Rake Management System (RMS), the core module of FOIS has been deployed at around 250 locations spread throughout IR which are networked through Optical Fibre Cables (OFC). Terminal Management System (TMS) has been deployed around 500 locations throughout IR. Other modules like Control Office Application (COA), Crew Management System (CMS) are under various stages of implementation by Centre for Railway Information System (CRIS).

RB, in their ATN on Para No. 5 of Report No. 31 of 2014, stated that to obviate the need for manual inputs into the FOIS and thereby optimize the accuracy and spread of capture of data, including all peripheral data, the work of its complete and seamless integration with COA, TMS *etc.* was being progressed. In the current study, Integration of FOIS with COA, TMS *etc.* was examined.

Audit observed that:

- RMS, TMS and RAS Modules were effectively utilized by the selected goods sheds, sidings and stations in various activities right from registration of demands from parties to running the freight trains to

the designated destinations except in NCR and SCR where position could not be verified due to non-access to system.

- FOIS was integrated with COA except in NCR and SCR, where position could not be verified due to non-access to system.
- In ER, manual inputs into FOIS were in practice.
- In NEFR, the Weighbridge in RNI was integrated with FOIS. However, during weighment of rakes, the sequence of Wagons did not match with TMS. Hence, to avoid detention of rakes, weighment was done in off-line mode. Demurrage accrued amount calculated in stations differed from the system generated amount. Similar wrong calculation of DC by TMS was also observed in NRSR Siding.

3.1.8.33 Detention to wagons at *en-route* stations

FOIS data is intended to capture detention, detentions at en-route stations. In the previous review report (Report No. 31 of 2014), it was highlighted that goods trains were detained for a period ranging from 4:40 to 81:10 Hours.

In the current study, Audit test checked related FOIS records furnished by CRIS for the month of January 2020. Analysis of detention of a Load where detention time is more than 150 hours is tabulated in **Annexure 3.19**. Audit observed from the above analysis that in 374 Loads where total detention per load were in the range of 46 to 100 *per cent* of the total travel time of the loads. Its resultant effect was reduction in the average speed of goods train and ultimate under-utilisation of wagons as evident from analysis of related FOIS data (**Annexure 3.20**).

Audit further observed from the above analysis that:

- In all zones total halt time was close to half of the total travel time and hence the average speed was also close to half of the average speed without halt time.
- Number of empty load was more than the loaded ones.
- Empty load distance (Kms) was one third of the total travelled distance. Therefore, one third of the haulage was non-revenue generating.

To explore the trend of en-route detention as well as resultant effects on average speed of goods train, similar analysis of FOIS data for five years period (2016-17 to 2020-21) was made. Year-wise position is indicated in **Table 3.13**. Zone-wise details are given in **Annexure 3.21**.

Table 3.13: Position of detention time to total time

Sl. No.	Year	Detention time	Run time	Total time	Percentage of detention time to total time
1	2016-17	16497195.74	12305272.60	28802468.34	57
2	2017-18	17497921.87	12789626.14	30287548.01	58
3	2018-19	17817987.31	13770582.51	31588569.81	56
4	2019-20	17129022.34	12385093.31	29514115.65	58
5	2020-21	23284592.00	10276660.30	33561252.29	69

Source: FOIS data

Audit observed from the above analysis that:

- In all zones total halt time was close to half of the total travel time and hence the average speed was also close to half of the average speed without halt time.
- Both average speed and average speed without halt have remained consistently stagnant without any improvement in the four-year period.
- During each of the four year, the number of loads, total distance travelled and the total time of travel were also very close. So even in terms of traffic, there was stagnation.
- En-route detention percentage was almost same during the period and there was no improvement in operation for reduction of detention time.

Thus, detentions to goods trains resulted in reduction of average speed of goods trains. Though the permissible speed limit was 60 KMPH, the average speed of goods trains on IR remained almost static at around 13 KMPH and around 30 km per hour without detention during the period 2016-17 to 2019-20 and there was no perceivable improvement despite induction of High Horse Power locomotives in the last decade. Railway need to improve the position through strategic and long-term planning and their proper implementation.

3.1.8.34 Wagons without Brake Power Certificate

Brake Power Certificates (BPCs) are issued to the freight trains after examination and remain valid either up to the destination or for a specified distance, depending upon the pattern of operation undertaken. Locomotive uses combinations of electrical, mechanical, hydraulic and pneumatic braking system.

There are four types of BPCs –

1. P- Premium – For 15 days

2. C- Closed Circuit - For a Distance or time whichever is earlier viz. 30 days or 6000 Km; 35 days or 7500 Km
3. I - Intensive –For - Empty load – upto destination
4. S - Safe to run – This is from a station – upto another station

Audit analyzed five years (2016-17 to 2020-21) FOIS data regarding “P” Type and “C” Type BPCs and observed that there were instances of running of large number of freight trains with expired BPCs (invalid BPCs) infringing safety. Despite this, adequate action was not taken by IR to curb such incidences. This is indicative of deficient internal control mechanism.

Audit conducted detailed analysis where BPC validity days exceeded by two days and distance exceeded by 500 Kms for “C” type BPC. Results are tabulated in **Table 3.14**.

Table 3.14: Statement showing details of BPC type-wise position of invalid BPCs

Sl. No.	BPC Type	Year	No of invalid BPC	Days exceeded
1	P	2016-17	34	0.33 to 38
		2017-18	23	0.36 to 19
		2018-19	15	0.46 to 33
		2019-20	5	0.23 to 11
		2020-21	36	0.21 to 106
	BPC Type	Year	No of invalid BPC	Days exceeded (More than 2 days)
2	C	2016-17	112	2 to 44
		2017-18	110	2 to 490
		2018-19	98	2 to 132
		2019-20	169	2 to 149
		2020-21	302	2 to 148
	BPC Type	Year	No of invalid BPC	Distance exceeded (More than 500 Kms)
3	C	2016-17	373	501 to 2462
		2017-18	466	501 to 2573
		2018-19	400	502 to 2635
		2019-20	359	500 to 2248
		2020-21	226	501 to 2738

Source: FOIS data

- 113 “P” type single use BPCs exceeded the validity days by 1.4 percent up to 707.93 percent. All these BPCs were for a single load of a rake.
- 791 “C” type single use BPCs exceeded the validity days by 2 days up to 490 days i.e. up to 1632.50 per cent of validity days.

- 1824 “C” type single use BPCs exceeded the validity distance by 500 kms. and up to 2738 Kms. BPCs validity exceeded maximum of 43.91 *per cent* of permissible distance.

Running of wagons without valid BPCs is indicative of failure of Internal Control Mechanism. Occurrence of untoward incident due to invalid BPC will adversely affect the train operations, besides financial loss as a result of damage to track and rolling stock.

3.1.8.35 Speed of goods train

Speed of goods train is one of the vital factors of efficient goods train operation. Speed of goods trains is governed by various factors like crossing/precedence, crew change, asset failure, non-acceptance by other Railways due to bunching *etc.* IR made efforts for improvement in speed of goods trains which included induction of higher horse power locomotives, replacement of four-wheeler wagons with high-capacity air brake eight-wheeler wagon stocks, modernization of workshops and introduction of FOIS application *etc.* The improvements were intended to facilitate higher productivity and mobility.

Audit analysed related FOIS data for the years from 2016-17 to 2020-21. Results of analysis are discussed below:

- i. Comparison of average speed of Goods trains: The number of goods trains originating from different Zones was distributed in different speed slabs. It was observed that during 2016-17 to 2020-21, most (65 *per cent*) of the Goods trains originating from a particular Zone travelled in the lowest speed range between 1 and 20 Kmph and only about 11 percent trains travelled with more than 40 Kmph speed (**Annexure 3.22**).
- ii. Year-wise comparison of percentage of speed slab of Goods trains for the period from 2016-17 to 2020-21 is indicated in the **Table 3.15**.

Table 3.15: Year-wise comparison of percentage of speed slab of Goods trains

Sl. No.	Speed Slab	2016-17		2017-18		2018-19		2019-20		2020-21	
		No. of trains	%	No. of trains	%	No. of trains	%	No. of trains	%	No. of trains	%
1	Between 1 and 20 kmph	509582	67.12	537941	68.96	567035	69.15	536025	70.76	528398	53.06
2	More than 20 and up to 40 kmph	181414	23.89	174901	22.42	176189	21.48	149232	19.7	317636	31.84
3	More than 40 and up to 100 kmph	68240	8.99	67249	8.62	76837	9.37	72309	9.54	150611	15.1

Source: FOIS data

From the above, it was observed that, Percentage of trains increased from 2016-17 to 2019-20 in the speed slab between one and 20 kmph and decreased in the speed slabs more than 20 and up to 40 kmph. This position slightly improved in 2020-21. Percentage of trains in the speed slab between one and 20 Kmph reduced and percentage of trains in higher speed slab i.e. more than 40 Kmph increased during 2016-17 to 2020-21.

- iii. Analysis of Zone-wise number of loads with different speed slabs revealed that more than 80 *per cent* loads had an average speed of less than 25 Kmph. Only about 10 *per cent* loads had an average speed of more than 40 Kmph. (Zone-wise position indicated in **Annexure 3.23**.)

3.1.8.36 Status of the technological upgradation in wagons as per RB's ATN on C & AG's Report No. 31 of 2014 (Railways)

During examination of the present status of the technological upgradation in wagons as per RB's ATN (**Annexure 3.1**), Audit observed as detailed in **Table 3.16**.

Table 3.16: Status of the technological upgradation in wagons

Sl. No.	Para No. of previous Audit Report	Railway Board's remarks	Present Status
1	Para 2.8.1 of the above Audit Report- Design and Development of BOXNR wagons	In the ATN, RB stated that the objective of addressing the issue of corrosion was achieved. There was no delay in BOXN rehabilitation work due to RDSO study report.	In the current Audit, Audit observed that the work of 'Upgradation and rehabilitation of 5700 BOXN wagons to BOXNR' was still appearing in the Rolling Stock Programme of 2017-18, which clearly indicated slow progress of the work.
2	Para 2.8.3 of the above Audit Report- Upgradation of wagon into 25 tonne axle loads:	In their ATN, RB stated that existing wagons were upgraded to 25T axle loads (BOXNEL, BOYEL and BOBSN) and in use of the upgraded sections for 25T axle load operation.	In the current study, Audit observed that Infrastructure was still not ready for running of these higher axle load wagons.

Sl. No.	Para No. of previous Audit Report	Railway Board's remarks	Present Status
3	Para 2.8.4 of the above Audit Report- Design of BCNHL wagons:	In their ATN, RB submitted that since the BCNHL wagons were designed with width higher than the BCNA wagons, new design of swing and slide hinge type doors was made. New wagons are being provided with sliding doors for their full utilisation and to avoid cases of hinged door opening on run and hitting fixed structure.	In current Audit observed that the design of BCNHL wagon infringed the IR Schedule of Dimensions (BG) 2004, for which RDSO had sought condonation from RB and Chief Commissioner of Railway Safety (CCRS). Railway stated that it is permissible for RDSO to design a wagon beyond the moving dimension provided condonation is obtained from RB and CCRS before processing of the speed certificate.

Source: Relevant ATN files

3.1.8.37 Technological up-gradation in safety aspects of wagons

Indian Railways has adopted the technological up-gradation in safety aspects of wagons by way of introduction of Modified Centre Buffer Couplers, Improved suspension design, Bogie Mounted Air Brake System (BMBS) etc., are being provided in newly manufactured wagons on a regular basis¹³⁰. Indian Railways also introduced the twin pipe brake system on new freight stock as well as on existing stock by converting single pipe into twin pipe during POH.

During the current study, Audit examined the implementation of the above Technological upgradation in safety aspects of wagons. Audit observed the following:

(i) Introduction of Modified Centre Buffer Couplers (CBC)

Modified CBCs were introduced to address the issues of train parting, fast wear of knuckles and due to introduction of higher axle load wagons like

¹³⁰ PIB dated 26 June 2019.

BOXNHL and BCNHL. After issue of Specification No. WD-70-BD for upgraded High Tensile Couplers, RDSO approved 19 vendors for developmental items.

Audit observed that no operational problems were found and no train parting cases were reported to RDSO, which indicates that the safety aspect of the wagons increased on adoption of the upgraded couplers. En-route failure of CBC component were also reduced (WCR). The above modifications were not provided in the newly manufactured wagons allotted to SER.

(ii) Improved suspension design

The Modified suspension design developed by RDSO in 2020 was being implemented in new wagons. The modification of suspension of existing wagons was being undertaken in a phased manner.

Audit observed that no design related problem has been found on the records of RDSO. As the suspension design is critical to the functioning of a wagon, the safety aspects of wagons must have increased. The above modifications were not provided in the newly manufactured wagons allotted to SER.

(iii) Bogie Mounted Air Brake System (BMBS)

After development of three sources for manufacture of BMBS for freight Stock, RDSO informed (September 2010) Railway Workshops and wagon manufacturers to procure from these sources. RB directed (March 2016) the ZRs that the work of Retrofitment of BMBS in Air Brake Wagons, which is being executed through RSP allotments, would be carried out in BOXNHL and BCNHL wagons fitted with twin pipe air brake system on priority during POH.

As per information available with RDSO, Audit observed that these modifications were being provided in new wagons as well as on priority during POH. No design related operational problem were found on the records available at RDSO. As the BMBS is related with the braking system of wagons, its upgradation has certainly increased the safety aspect of wagons. By introduction of Twin pipe fitted with BMBS, brake rigging component have been reduced which increases the operational reliability of the wagons (WCR). The above modifications were not provided in the newly manufactured wagons allotted to SER.

(iv) Retrofitment of twin pipe Air Brake System in wagons

The retro-fitment of twin pipe Air Brake System reduces the brake releasing time and thereby improves the operational efficiency of freight trains and average speed of goods trains. RB decided (2016) to incorporate twin pipe brake system on new freight stock as well as existing

stock by converting single pipe into twin pipe through Rolling Stock Programme¹³¹. RB instructed (June 2017) to ensure that all railways owned wagons coming for POH are converted to twin-pipe brake system during POH and zero *per cent* conversion may be implemented from 01 January 2018.

Audit observed that the modification of twin pipe brake system has been incorporated on new freight stock as well as existing stock by converting single pipe into twin pipe. As per information given by RDSO, 83 *per cent* (approx.) wagons are with twin pipe system. No design related operational problem was found on the records of RDSO. In NCR and SR, Goods trains were running with single pipe. In SR, Goods trains were running with single pipe due to clubbing of wagons retrofitted twin pipe brake system along with wagons fitted with single pipe system. The above modifications were not provided in the newly manufactured wagons allotted to SER.

IR needs to take effective steps to complete the Retrofitment work in a time-bound manner to achieve the intended benefit of twin brake system. They also need to conduct special drive to form exclusive rakes of twin pipe from the retrofitted wagons fitted with twin pipes in place of single pipe.

3.1.9 Good practices

- Control office played a significant role by conducting regular conference, formulating strategy *etc.* Further, various Reports were generated for observing the availability of rakes.
- RMS, TMS and RAS Modules were effectively utilized by the selected goods sheds, sidings and stations in various activities right from registration of demands from parties to running the freight trains to the designated destinations

3.1.10 Conclusion

In violation of the Codal provisions Zonal Railways did not participate in the assessment of requirement of wagons or send proposals or justification for acquisition of wagons to Railway Board. In absence of any input from the zones, RB kept on changing requirement of wagons. Available Wagon holding was more than the wagon requirement, as

¹³¹ Pink Book Item No.1275/NA/17-18 for 20000 wagons (RailwayBoardletter No. 2017/M(W)/814/5 dated April 2017), and 864/PD/18-19 for 120000 wagons (RailwayBoard letter No. 2018/M(W)/814/5 dated 11 April 2018), Retro fitment of BMBS - Pink Book Item No. 847/PD, Up gradation of BOXN wagons – Pink Book No 911/PD/17-18 for 900 wagons (RailwayBoard letter No. 2016/M(W)/814/5 dated 13 April 2017), Up-gradation of BOBRN wagons vide Pink Book No. 910/PD/17-18 for 2000 wagons (Railway Board's letter No. 2016/M(W)/814/5 dated 13 April 2017)

assessed in audit on the basis of Wagon Utilization norm (NTKM), throughout the review period. Supply of wagons by wagon manufacturers was not commensurate with allotment of wagons made by the Railway Board and there were huge delays in supply.

Rakes were cancelled by parties due to non-supply by Railway Administration resulting in loss of potential earnings. There were instances of detention of rakes in the selected loading and unloading points/terminal yards which resulted in loss of wagon days and their earning capacity. In around 69 *per cent* wagons abnormal delay was noted in connecting the unconnected wagons resulting in loss of earning capacity of wagons for the time taken for connecting those wagons. Moreover, assistance of FOIS was not taken in all zones for connecting those unconnected wagons.

More than 3.30 lakh wagons constituting 41 *per cent* of total were passed locally (without NCO approval) after being repaired at workshops/terminal yards, compromising safety. Analysis of FOIS data for years i.e. 2016-17 to 2020-21 revealed that halt time was close to half of the total travel time and hence the average speed was also close to half of the average speed without halt time.

3.1.11 Recommendation

Indian Railway needs to:

- ***Assess the requirement of wagons and place realistic demands accordingly.***
- ***Monitor production of wagons both by Railway's own workshop as well as private wagon suppliers so that wagons are timely supplied by wagon manufacturers.***
- ***Supply rakes to private parties timely for optimum utilisation of wagons.***
- ***Avoid detention of rakes at different levels like loading/unloading points and terminal yards.***
- ***Effectively utilize FOIS in connecting unconnected wagons.***
- ***Ensure running of trains with only valid BPC.***
- ***Take suitable measures to reduce detention for achieving target of speed of goods train.***

The matter was referred to the MoR in June 2022; no reply was received (August 2022).

3.2 Centralized Import of rolling stock parts: Railway Board

Indian Railways depends on imports for high technology components for its rolling stock. Position of imports (including the centralized procurement by Rly Board) with respect to total stores procurement during 2016-17 to 2020-21 is given in **Table 3.17**.

Table 3.17: Import of high technology Rolling Stock Components (₹ in crore)

Sl. No.	Year	Total stores purchase	Indigenous	Imports	Railway Board**	Zonal Railways & PUs	Imports w.r.t total purchase (per cent)	Imports at RB level w.r.t total Import (per cent)
1	2016-17	43347	41854	1493	212.49	1280.51	3.44	14.23
2	2017-18	49484	48494	990	189.40	800.60	2.00	19.13
3	2018-19	62134	61078	1056	312.48	742.52	1.70	29.59
4	2019-20	63843	63052	791	315.22	475.48	1.24	39.85
5	2020-21	50092	49639	453	203.36	249.64	0.90	44.89

Source: Railway Board's records

****Includes items like loco wheels, Axles, and LHB coach wheels**

From the above Table, it may be seen that imports had steadily decreased over the period of five years from 3.44 *per cent* (2016-17) to 0.90 *per cent* (2020-21). Of these imports, the centralised procurement of rolling stock had increased from 14.23 *per cent* in 2016-17 to 44.89 *per cent* in 2020-21. Audit of the centralised procurements of rolling stock revealed the following;

1. Irregular payment on account of stock destroyed during testing to the tune of ₹ 5.88 crore

Railway Board floated global tenders for the various parts such as wheels, axles, *etc* required for production and maintenance of the Rolling Stocks by Production Units and Zonal Railways. Provisions mentioned in standard specifications issued by Research, Design and Standards Organization (RDSO) for Steel Axles¹³² and Solid Forged Wheels¹³³ are applicable for the procurement of Axles and Wheels.

As per provisions contained in clause 5.4 of IRS No. R 16-95 for Axles

¹³² Indian Railway Standard Specification for Steel Axles for Carriages and Wagons (IRS No. R 16-95 with 1 amendment)

¹³³ Indian Railway Standard Specification for Solid Forged Wheels for carriage, Wagons and EMU Stocks (IRS R-19/93 Part II (Rev. 4))

(5.4) and clause 17 of IRS R-19/93 Part II (Rev. 4), the manufacturer shall supply the material required for testing free of charge.

Audit noticed that in the following tenders finalized by the Railway Board, cost of wheels and axles consumed and destroyed in testing was included in the total supplies made to the Railways and not supplied free of charge by the manufactures. This was in contravention to the provisions of the standard specifications of RDSO. Details given in **Table 3.18**.

Table 3.18: Value of Wheels and Axles consumed and destroyed in testing

Sl. No.	Tender/LOA No.	Supplier	Part of Rolling Stock	Quantity Supplied	Quantity utilized for testing	Total Contract Value (in US \$)	Value of one Unit excluding freight (in US\$)	Value of destroyed material (in US\$)	Value in equivalent ₹ (at the rate of 1 US\$ ~ ₹ 70)
1	2018/RS(WTA)-500/axles/874/1 dated 10.10.2018	M/s. CRRC, Tangling, China	Axles	26000	290	14160000	688	199520	17388000
2	2018/RS(WTA)-501/Wheels/874/1 dated 08.10.18	TZ Taizhong Hong Kong International Limited, Hong Kong	Wheels	96644	621	39624040	400	248400	11878300
3	2019/RS(WTA)-504/Axles/874/1 dated 09.10.2019	CRRC DATONG CO. LTD., China	Axles	19500	239	14098500	710	169690	1147359
4	2019/RS(WTA)-505/Axles/874/1	CRRC DATONG CO. LTD., China	Axles	6000	22	CFR 4470000 + ₹ 90228 (Commission)	745.038	16390.836	2516381
5	2019/RS(WTA)-505/Axles/874/2	CRRC Yangtze Tongling Co. Ltd. China	Axles	4000	48	3040152	10 units at the rate of 760.03 & 38 units at the rate o 746	35948.3	11986544
6	2019/RS(WTA)-508/Wheels/874/1	TZ Taizhong Hong Kong International Limited, Hong Kong	Wheels	6000	394	USD 26676600 (CFR Basis) + USD ₹ 1290600 (commission)	394	171236.34	13966400
Total				158144	1614			841185.476	58882983

Source: Railway Board's records

Thus, the Railways had borne the cost of the destroyed/consumed materials during testing which resulted in loss to the tune of ₹ 5.88 crore.

2. Procurement of axles not as per indented specifications

Railway Board received three indents for 10,000 coaching axles from Integrated Coach Factory- Chennai (ICF), Rail Coach Factory-Kapurthala (RCF) and Modern Coach Factory- Raibarelli (MCF) for procurement of Solid Forged Axles (Rough turned) for FIAT IR Bogies (LHB) drawing specification AAAO2045 ALT 'b'. Accordingly, a Global Tender (WTA 505) was floated for procurement of 10,000 Axles. Eight offers were received against the tender which was opened on 2 July 2019. Tender Committee (TC) rejected the lowest (L₁) offer due to non-submission of Earnest

Money Deposit (EMD). TC recommended splitting¹³⁴ tender quantity between L₂ & L₃ in the ratio of 60:40. A contract was awarded¹³⁵ on M/s. CRRC Yangtze Tongling Co. Ltd., China, and M/s. CRRC DATONG Co. Ltd with the single specification.

A review of the records revealed that one of the consignees i.e. RCF expressed inability to accept the consignment as the axles supplied were not of the specification indented. RCF had indented for 3,400 numbers of FIAT IR Bogie Axles of drawing specification LW02149 ALT 'c' whereas it had received Axles of drawing specification AAAO2045 ALT 'b'.

Thus, placing orders for a specification of the axle other than requirement of the end user resulted in procurement of additional 3,400 units of axles resulting into avoidable expenditure of ₹ 18.01 crore¹³⁶.

3. Delay in procurement of imported spares resulted into loss of earning capacity of ₹ 8.34 crore on account of avoidable detention of HHP Locomotives

Railway Board policy issued vide letter No. 2008/RS(G)/779/10 dated 4 September 2014 regarding procurement of imported stores for HHP locomotives inter-alia provided that:

- i. Zonal Railways having more than holding of 100 HHP (High Horse Power) locomotives will make their procurement of imported spares. For purpose of HHP locomotives holding means the number of HHP locomotives allotted to the diesel sheds of the particular zonal railway for maintenance,
- ii. Zonal Railways having holding of 100 HHP locomotives or less would have the option of procuring their imported stores on their own or by placing an indent on Diesel Locomotive Works (DLW),
- iii. In case of crisis, zonal railways which have a holding of 100 HHP locomotives or less may make their purchase and advise DLW of quantity adjustment as required.

In terms of the above provisions, South Western Railway (SWR) was

¹³⁴ Para 18.1.2 of tender conditions.

¹³⁵ M/s. CRRC Yangtze Tongling Co. Ltd., China and M/s. CRRC DATONG Co. Ltd. vide LAO No. 2019/RS(WTA)- 505/Axle/874/2 dated 06/05/2020 for 6000 numbers at the rate of 745 USD with freight of USD 15 per axle and 4000 numbers at the rate of 746 USD with freight of USD 14.038 was awarded to M/s. CRRC Yangtze Tongling Co. Ltd., China vide LOA No.: 2019/RS(WTA)-505/1 dated 05 March 2020.

¹³⁶ (USD 745+760.038 = 1505.038/2= ₹ 752.519, conversion rate of USD on the date of issue of LOA = ₹ 70.40, Total cost of 3400 numbers of axles = 3400X752.519X70.40 = ₹ 180122947.84).

required to import stores for HHP Locos at Zonal Level as Diesel Locomotives holding of South Western Railway was more than 100 HHP Locos.

During the review of records pertaining to detention of Locos at Diesel Loco Shed/UBL and Diesel Loco Shed/KJM, it was noticed that in SWR, 27 Locos were detained for want of Imported Spare Parts during the period from 2016-17 to 2021-22. However, 14 instances of detentions of locos out of 27 instances pertained to Covid-19 pandemic period. The details of the instances other than Covid-19 period in which the locomotives in SWR remained out of service/idle for the want of imported spares are filled in **Annexure 3.24**.

This stabling of 13 locomotives (excluding the instances due to COVID-19) led to the loss of earning capacity to an extent of ₹ 8.34 crore.

Recommendations:

MoR need to ensure that:

- ***The material required for testing are supplied free of charge by the manufacturer in compliance to RDSO's guidelines.***
- ***Placing orders for a specification of the axle other than requirement of the end user should be avoided.***
- ***Stabling of locomotives should be avoided for want of spares.***

The matter was referred to the MoR in June 2022; no reply was received (August 2022).

Chapter 4 – Individual Paragraphs

This Chapter includes four individual paragraphs on Goods shed (SR), arbitrary offloading from contract (ECoR), extra budgetary resources (NEFR) and minimum annual guaranteed payment (SR) involving money value of ₹ 32.99 crore discussing compliance issues on under utilization of assets created and irregular expenditure from extra budgetary resources, etc.

4.1 Unplanned construction of Goods shed: Southern Railway

Southern Railway Administration created a Goods Shed at Nilambur Road costing ₹ 5.12 crore without assessing the incoming and outgoing traffic.

To facilitate goods traffic, Goods Sheds are developed at railway stations after estimating the likelihood of traffic to be generated. As per, Para 101 and 606 of Indian Railway Traffic Code (Commercial) Railway should provide proper approach roads and circulating areas, adequate accommodation and goods platforms, adequate lighting arrangements in Goods shed premises. The Commercial Department is responsible for marketing and sale of the transportation provided by a Railway, for creating and developing traffic.

Southern Railway (SR) proposed (September 2009) the development of a Goods Shed with half rake loading facility (20 BCN Wagons) at Nilambur Road Railway Station. The proposal was based on demand of Trade Organisations at Nilambur Road for providing outward traffic and inward traffic of cement, fertilizer and foodgrains to meet the demand locally. While according financial concurrence, Financial Adviser & Chief Accounts Officer/Southern Railway (FA&CAO/SR) noted (October 2009) that the above line is uneconomical and Goods Shed available at Angadipuram (38 Km from proposed Nilambur Road Shed), has no traffic. However, GM/SR ignoring the concerns raised by Finance forwarded the proposal to Railway Board for approval. The justification for the proposal included recommendation by Hon'ble Minister of State for Railways and opportunity to tap additional traffic of cement/bamboo/rubber only if the goods shed is created.

Railway Board approved (August 2010) the proposal for setting up the Goods shed and the work was included in the supplementary works Programme of 2010-11. The work was sanctioned (August 2011) at an estimated cost of ₹ 4.80 crore. The agreement was executed (August 2012 and November 2014) for provision of Rake unloading facilities for 20 BCN wagons (Goods unloading platform, Goods shed approach Road,

compound wall with CC blocks and Goods Shed office) and provision of circulating area at second entry. The first work was completed in January 2015 and the second work was completed in December 2017 at a total cost of ₹ 4.43 crore.

Goods Shed at Nilambur Road

Goods Shed at Nilambur Road was opened (February 2016) for both inward and outward Goods Traffic except POL. However, no inward and outward traffic was booked at Nilambur Goods shed since the date of its



commissioning except a lone booking for one rake from Malabar Cement Company Siding, Walayar (WACS) during March 2020.

Audit further observed that SR Administration conducted two meetings (November 2016 and February 2021) with the trade persons after commissioning of Goods Shed to garner traffic to Nilambur Road Goods shed. The main issues that were highlighted during the meeting was that customers were facing constraints in bringing their consignments through existing road due to congestion especially near Level crossing (LC) and closing of branch line during the night hours.

To address customer's these constraints, SR executed a contract for provision of approach road and the work was completed at a cost of ₹ 0.69 crore. The approach road was opened (July 2019) for traffic. The night traffic was also opened (January 2020) between Shoranur- Nilambur section to facilitate release of wagons during morning hours and movement of empty rake during night hours. Even after solving the issues raised by Trade persons, no traffic was originated at Nilambur Road (until February 2022).

The matter was taken up with the General Manager, Southern Railway (September 2021). In their reply, SR Administration stated (March 2022) that the proposal to open Goods Shed at Nilambur was initiated based on projection of transportation of products of local area. The rubber products being major commodities among the assessed traffic, all producers of these products were taken into consideration while projecting the traffic. MRF company has also assured to divert the Road traffic to Rail on completion of the existing contract with Road operators. Railways are taking continuous marketing efforts by frequently contacting the Stake Holders. Further, to develop and improve traffic, a license was awarded to

Shri K.P. Abdul Kareem, through open tender for development of Nilambur Goods Shed by providing basic facilities and its maintenance for a period of 10 years under Public-Private Partnership (PPP) mode.

The Nilambur Goods Shed was developed based on demand from Trade fraternity. After the development of Nilambur Goods Shed, the industrial scenario in Kerala was also affected by natural calamities like cyclone, floods etc and also due to COVID-19 pandemic. Despite these constraints, the future prospects can be encouraging, as one party has intended to develop Nilambur Goods Shed. Hence, it cannot be construed that the construction of Goods Shed at Nilambur was initiated without proper assessment of potential traffic and has resulted in infructuous expenditure.

The reply of SR Administration is not acceptable. The fact remains that rubber and other produce taken into consideration while projecting the traffic, could not be moved by rail till date. Even after opening of Nilambur Goods shed in February 2016, only a single traffic of five wagons of cement from Malabar Cements Ltd., Walayar (122 Kms) was moved. Also during the lock down period due to COVID, freight movements by and large remained unaffected in Indian Railways. Further, it is ascertained from Nilambur Road station that the work of development of Nilambur Goods shed under PPP mode had progressed very little on date.

Thus, the construction of Goods Shed at Nilambur without proper assessment of potential traffic resulted in infructuous investment of ₹ 5.12 crore.

The matter was referred to the MoR in May 2022; no reply was received (August 2022).

Recommendation:

MoR need to ensure feasibility study before taking up any project particularly with reference to revenue and potential traffic.

4.2 Avoidable contractual liability due to arbitrary offloading of a portion of work from an ongoing contract: East Coast Railway

East Coast Railway Administration in violation of the General Conditions of Contract offloaded 20 per cent of work from a contract for earthwork in formation, Minor Bridges and other miscellaneous works in the Sambalpur-Talcher doubling project awarded for ₹ 58.92 crore in December 2016. This has resulted in avoidable contractual liability of ₹ 7.09 crore.

Railway Board from time to time¹³⁷ prescribed that contract for works should not be awarded unless the pre-requisite¹³⁸ works are sanctioned by the competent authority. Further, Clause 40A of the Indian Railways General Conditions of Contract (GCC), provides that at the final stage of completion and commissioning of work, in case the contractor's failure is limited to only 2 per cent of the original contract value, the contractor could request the Railways to offload such portion of work from him. On the contractor's request such works may be offloaded and got executed through another agency and additional cost incurred, if any, should be recovered from dues of the contractor. Railway shall also deduct 10 per cent of cost of such work or ₹ 1 lakh whichever is lower, from the Contractor's dues as administrative charges for the process of finalizing new agency for such work.

Examination of records revealed that a contract¹³⁹ in Sambalpur–Jujumora section from Km 0 to Km 38.4 was awarded to the lowest bidder M/s Shree Balaji Engicons Pvt. Ltd at a contract value of ₹ 58.92 crore in July 2016¹⁴⁰ with a 30 months' target period of completion. During execution, the contractor informed (March 2017 and July 2017) Railway Administration about non-availability of land/Signal and Telecommunication (S&T) free zone and infringements, etc. These resulted in hindrances in execution of the work. Based on the reasons cited by the contractor, East Coast Railway (ECoR) granted extensions of time without penalty till July 2020.

¹³⁷ RB's letter no. 80/W2/3/33 dated 28/29 August 1980, RB letter no. 85/W1/CT/9 dated 22 February 1985 and Compendium on Tenders & Contracts 2016.

¹³⁸ Soil tests and site investigation are completed, all plans, design, detailed drawing, estimates/schedule of quantities etc.

¹³⁹ For "Execution of Earthwork in formation, Minor Bridges and other Miscellaneous works in the Sambalpur-Talcher doubling project.

¹⁴⁰ LOA No. CE/CON/III/BBS/T/33/2016/1373/SBEPL/3240 dated 5 July 2016 and Agreement No. 55/CE/CON/III/BBS/ECoR/2016 dated 8 December 2016.

Audit noted that while the work was in progress, Deputy Chief Engineer (Construction), Sambalpur [Dy. CE. Con/SBP] proposed (May 2020) for offloading a portion of work¹⁴¹ due to non-availability of land, revision of yard plan, non-shifting of electric lines, etc. It was also proposed to introduce GE G-14 specification for earthwork in formation instead of existing GE G-01 specification. In contravention to Clause 40A of GCC, the work was offloaded without the request of the contractor.

On the proposal to offload the work, Finance Department sought the reasons for not executing the work by the existing contractor. In reply, Dy. CE. Con/SBP mentioned that hindrance free land was available for execution of work. The conditions and specification of earthwork between Sambalpur and Maneswar had been completely changed requiring change of specification to GE G-14 condition for the formation. As such, executing balance work through Open Tender was beneficial to Railway.

Thereafter, a fresh tender with GE-14 specification of earthwork was floated for the offloaded work¹⁴² and the contract was awarded¹⁴³ to the Lowest bidder M/s Orient Constructions Pvt Ltd at a tender value of ₹ 18.75 crore. The Arbitrary offloading of a portion from the scope of work of an ongoing contract and retendering at a higher cost resulted in avoidable contractual liability of ₹ 7.09 crore¹⁴⁴.

The issue was taken up with the ECoR Administration through a special letter in September 2021. In reply (January 2022), ECoR stated that the earlier contractor could not execute the balance work due to non-availability of land, revision of yard plan, non-shifting of OHE lines, etc. By offloading the contract Railway got an opportunity to change the specification to GE G-14.

Audit further noted that Zonal Railway Administration was not empowered in the GCC to offload an ongoing contract in excess of two *per cent* of

¹⁴¹ Km 0 to Km 14.550 from Sambalpur end.

¹⁴² Execution of Balance Earthwork in formation, Minor bridges and other Misc. works in section between Sambalpur-Maneswar (excluding Maneswar yard) Km 0.00 to Km 14.550 including Sambalpur City Yard.

¹⁴³ Vide LOA No. ECoR-CONST-HQ-Engg/ETCPMSBP2020037 dated 3 December 2020.

¹⁴⁴ Savings in initial contract was ₹ 11.66 crore (i.e. ₹ 58.92 crore - ₹ 47.26 crore)

Additional contractual liability= ₹ 7.09 crore (i.e. ₹ 18.75 crore - ₹ 11.66 crore).

work and without getting the request of the contractor for offloading. In the instant case, ECoR violated the GCC to offload 20 per cent of work¹⁴⁵.

The reply is not acceptable as land for earthwork was available at the time of offloading (May 2020) and existing contractor could have executed the balance work. The reply of railway is also silent on the reason for not adopting GE G-14 specification of 2009 in the year 2016 for the entire line instead of adopting it for a patch of earthwork in 2020. The entire doubling work from Km. 0 to Km.38.4 was awarded with GE: G1 specification (i.e for 22.5 Ton axle load). Subsequently, the revised specification i.e. GE G-14 had been adopted for the remaining 14.5 km. Thus, implementation of revised specification GE G-14 of 2009 for higher axle load in a patch of earthwork was not necessary since movement of rakes with higher loads would not be permissible on a line having different patches supporting different loads.

The matter was referred to the MoR in May 2022; no reply was received (August 2022).

Recommendation:

MoR need to ensure proper offloading of an ongoing work strictly as per the General Conditions of Contract.

4.3 Irregular Expenditure from Extra Budgetary Resources (Institutional Finance): Northeast Frontier Railway

Northeast Frontier Railway incurred irregular expenditure of ₹ 12.13 crore from Extra Budgetary Resources (Institutional Finance) earmarked for a Doubling Project on Land Development of other Projects, environment-related works and a Golf Course, specifically excluded from the purview of the Fund.

In the Railway Budget 2015-16, Extra Budgetary Resources (Institutional Finance) or EBR-IF was introduced¹⁴⁶ to borrow funds from Institutional sources to ensure availability of funds for completion of Projects critical to the Railways for generation of revenue. Elaborating the concept, Railway Board (RB) emphasised that 'EBR-IF allocations would be utilised for priority works under Plan Heads New Lines, Gauge Conversion (GC), Double Line (DL), Triple Line (TL), Railway Electrification (RE), Signal & Telecommunication (S&T), etc. with a view to enhancing throughput on the

¹⁴⁵ ₹ 58.92 crore (-) ₹ 47.26 crore = ₹ 11.66 crore = ₹ 11.66 crore/₹ 58.92 crore (x) 100 = 19.78 per cent or 20 per cent.

¹⁴⁶ Railway Board's Letter No. 2015/FS Cell/1/2 dated 23 October 2015.

congested corridors. As the cost of the funds from institutional financing would be based on market rates, the utilisation of these funds should be carried out with utmost prudence and propriety and only the justifiable expenditure pertaining to the work should be booked through these funds. Payment of interest on inventories carried over to the future years is not desirable.

Scrutiny of records of NEFR revealed that the New Bongaigaon-Goalpara-Kamakhya (NBQ-GLPT-KYQ) Doubling Project (176 KM) chargeable to EBR (IF) was included in Pink Book (2015-16) and Detailed Estimate was sanctioned by Railway Board in September 2016. The Railway Board instructed that 'only the items directly connected to the work should be included in the estimate. If it is felt that after commission of Doubling/Tripling/Quadrupling certain additional facilities would be required, they may be proposed as a separate work under relevant Plan Head'.

Minister of Railways (MoR) visited Guwahati in May 2017 and directed for setting up a Botanical Garden/Bio-diversity Park in Amingaon, which may also be used to promote tourism in Guwahati area. A year later (May 2018), this work was offered by Open Line to Northeast Frontier Railway Construction Organization (NFRCO). The NFRCO agreed (May 2018) that the Bio-diversity Park was to be developed with contingency funds available against sanctioned projects under NFRCO.

NFRCO executed a Contract Agreement (CA) in October 2018 for the work 'Development of Land near the Army Camp at Amingaon for the Construction of various field offices of NEFR (Construction)' valuing at ₹ 8.35 crore. Subsidiary Contract Agreement-1 (SCA-1) to the CA was executed in June 2019, accommodating a Botanical Garden/Biodiversity Park including a Golf Course as a Non-Scheduled Item (NS Item) in the original work. The value of the total work was raised to ₹ 11.76 crore in SCA-1. Subsequently, value of the total work was increased to ₹ 12.40 crore in SCA-2 (December 2020). A total of ₹ 12.13 crore was already paid till March 2021 and charged to NBQ-GLPT-KYQ doubling project.

Land development work and setting up of a Bio-diversity Park, including a Golf Course, was neither directly connected to the Doubling work nor included in the Detailed Estimate of the Project. A large amount of money spent on this, using EBR (IF) funds, was in violation of prevailing Rules and RB Guidelines.

The issue was taken up with Railway Administration in January 2022. In reply (March 2022), Railway Administration accepted that the Booking of the expenditure for work executed through CA of 16th October 2018 to EBR (IF), was irregular. Construction of Golf Course was denied and it

was stated that 'the land was primarily developed for the construction for various field offices and as Bio-diversity park which also being utilized for various sporting activity and Golf is one of them'. Further, it asserted that the booking of fund is proposed to be transferred to proper Head.

Reply of Railway Administration is not tenable. Zonal Railway Administration cannot, on their own, make re-appropriation of the expenditure incurred in this regard as prior approval of Railway Board is required for any re-appropriation/re-distribution under allocation EBR (IF)¹⁴⁷. Action to book the stated expenditure to the proper Head was not taken till 21st March 2022. The development of a Golf Course was clearly indicated in SCA-1 and SCA-2. Moreover, in August 2018, NFRCO approached Railway Board for sanction of ₹ 35.25 lakh for maintenance of the Golf Course in the Bio-diversity Park at Amingaon. Expenditure on land development in Amingaon for various Offices, was beyond the scope of EBR (IF)¹⁴⁸.

By drawing ₹ 12.13 crore from EBR (IF) during last three years for the stated work, Railway Administration increased the load on the exchequer towards payment of Interest. Thus, booking of ₹ 12.13 crore on EBR (IF) for development of land and setting up a Bio-diversity Park, including a Golf Course in Amingaon, was highly irregular.

The matter was referred to the MoR in May 2022; no reply was received (August 2022).

Recommendation:

MoR need to ensure that extra budgetary resources (Institutional Finance) earmarked for a particular project should not be used for other work.

¹⁴⁷ Railway Board's Letter No. 2011-B-174 dated 3 July 2015.

¹⁴⁸ Railway Board's Letter No. 2015/FS Cell/1/2 dated 23 October 2015.

4.4 Non-realization of Minimum Annual Guaranteed Payment for land allotted to Rail Land Development Authority for construction of Multi-functional complex at Madurai: Southern Railway

Under the policy of leasing vacant railway land for commercial use, Southern Railway allotted land at Madurai railway station to Rail Land Development Authority (RLDA) for construction of a Multi-Functional Complex. SR Administration in contravention to Ministry of Railway's instructions failed to realize Minimum Annual Guaranteed Payment of ₹ 8.65 crore from RLDA for the period July 2013 to March 2020.

In Budget 2009-10, development of Multi-Functional Complexes (MFC) at identified stations to be undertaken jointly by Rail Land Development Authority (RLDA)¹⁴⁹ and IRCON International Limited (IRCON) was announced. The commercial space in the MFCs would be leased/sub-leased to provide specified amenities to the railway passengers/users viz. shopping, food stalls, restaurants, book stalls, budget hotels, medicine and variety stores, parking facilities etc.

MoR issued (June 2005) instructions for leasing of railway land. As per these instructions, the land value is to be fixed after obtaining the current value of land. The land value shall be increased at the rate of seven *per cent* every year over the previous year's value.

A Memorandum of Understanding (MoU) was signed (August 2009) between RLDA and IRCON for development of a multi-functional complex (MFC). As per the MoU, IRCON shall form its Wholly Owned Subsidiary (WOS), which shall enter into Lease Agreement with RLDA for use of railway land/buildings during the lease period for development, construction, financing, operation and maintenance of MFCs.

As per para 4.3 of MoU, the absolute value of such revenue share of MoR/RLDA shall not be less than six *per cent* per annum of the land value determined as per the policy of MoR. A periodic review to update the value of railway land every five years shall be made for determining the lease charges. A Minimum Annual Guaranteed Payment (MAGP) is to be paid to RLDA by IRCON (ISL) a WOS of IRCON irrespective of whether the Lessee earns the minimum return on the project or not.

MoR issued (February 2008) instructions to all Zonal Railways that the earnings so received from the land development by RLDA are to be

¹⁴⁹ Rail Land Development Authority (RLDA) is a statutory Authority, under the Ministry of Railways (MoR), set-up for development of vacant Railway land for commercial use to supplement the financial resources of the Railways through non-tariff measures.

transferred to the Zonal Railways concerned by RLDA, which will be part of the Sundry Other Earnings of the Division on which the site is located.

Land at Madurai Railway station premises measuring 2,700 sq.m. was originally handed over (22 February 2010) to RLDA for construction of MFC. Subsequently, IRCON (ISL) utilized extra land to an extent of 317.21 sq.m. A Lease agreement between RLDA and IRCON (ISL) was entered into (July 2013) for planning, design, development, operation and maintenance of MFCs on Indian Railway's land. IRCON (ISL) developed a MFC and sub-leased (September 2014) to M/s. Madurai Multifunctional Complex Pvt. Ltd.

As per lease agreement, the consideration was payable from the effective date i.e. from the date of signing of the lease agreement or the schedules for the respective site whichever is later. As such, the MAGP was to be received by SR Administration from 4 July 2013. However, the MAGP was received from November 2016 onwards. Audit noted that RLDA did not specify the period for which the payments were concerned. SR Administration failed to assess the MAGP due from RLDA and accepted the payments as received. SR Administration also failed to ensure that a periodic review was to be made every five years to update the value of railway land for the purpose of determining the MAGP. Audit noticed that out of ₹ 9.44 crore due to be received from RLDA for using 2700 sq.m. of land for the period from 04 July 2013 to 31 March 2020, only ₹ 1.90 crore was received and the balance of ₹ 7.54 crore remained unrealized (April 2021).

Audit also observed that IRCON had utilized extra land to an extent of 317.21 sq.m. A lease agreement has to be entered into with RLDA for utilization of the extra land by IRCON (ISL). The MAGP for this extra land for the period from 04 July 2013 to 31 March 2020 amounting to ₹ 1.11 crore also remained unrealized.

The matter was taken up (August 2021) with the General Manager, Southern Railway. In their reply, SR Administration stated (May 2022) that the outstanding dues of MAGP worked out up to the period of 2019-20 by Audit Branch, duly taking guideline value of the land as ₹ 8,000 per sq.ft. whereas this guideline value was valid upto 08 June 2007 only. Subsequently guideline value was revised to ₹ 5,360 per sq.ft with effect from 09 June 2017. Accordingly, the total outstanding dues worked out by Audit is ₹ 11.01 crore, whereas the dues worked out by SR Administration is ₹ 6.84 crore, out of which ₹ 1.89 crore has already been remitted by RLDA to the Division, thereby, making a difference of ₹ 4.17 crore, with respect to Audit's calculation sheet. Further, RLDA has already been addressed to remit the pending dues at the earliest.

The reply of SR Administration is not acceptable as the Lease agreement between RLDA and IRCON (ISL) was signed on 04 July 2013. The net amount of MAGP after deducting Margin Money duly revising the guideline value after the expiry of five years from the date of lease agreement i.e. from 04 July 2013 works out to ₹ 9.44 crore for 2700 sqm of land allotted and ₹ 1.11 crore for additional land of 317.21 sqm utilized by IRCON (ISL). Hence, the total MAGP works out to ₹ 10.55 crore. Out of which, ₹ 1.90 crore has been received so far from RLDA, the net MAGP amounting to ₹ 8.65 crore is still outstanding.

Thus, the Ministry of Railway's efforts to supplement its financial resources through non-tariff revenue has been ineffective owing to poor monitoring by SR Administration which resulted in short/non-realization of MAGP amounting to ₹ 8.65 crore.

The matter was referred to the MoR in June 2022; no reply was received (August 2022).

Recommendations:

- **Zonal Railways need to implement MoR's directives regarding revision of land leasing charges periodically.**
- **Responsibility needs to be fixed for non-realization of the said amount and non-compliance to the agreements/orders of MoR.**
- **Recovery notice in this regard to be issued.**

New Delhi
Dated:07 February 2023

(ILA SINGH)

Deputy Comptroller and Auditor General

Countersigned

New Delhi
Dated:08 February 2023

(GIRISH CHANDRA MURMU)

Comptroller and Auditor General of India



ANNEXURES



Annexure 1.1 Annual Operating Performance of National Railroad Corporation, US (Amtrak)- Operating results (Reference Paragraph 1.1.1)								
(\$ in Millions)	Prior year to Data September Financial Year 2020 (in \$)	Actual year to Data September Financial Year 2021 (in \$)	Year to year Growth		September Forecast year to Data September Financial Year 2021 (in \$)	Actual year to Data September Financial Year 2021 (in \$)	Favourable /Unfavourable vs September Forecast	
			\$ 4 (Col. 2- Col. 3)	Per cent 5			\$ 8 (Col. 7- Col. 6)	Per cent 9
1	2	3			6	7		
Ticket Revenue (Adjusted)	1,238.30	888.00	350.30	28	875.00	888.00	13	1
Food & Beverage	30.8	23.0	7.9	26	21.6	23.0	1.3	6
State Supported Train Revenue	342.1	352.8	10.7	3	355.2	352.8	(2.4)	1
Sub total Passenger Related Revenue	1,611.2	1,263.8	347.5	22	1,251.8	1,263.8	12	1

Annexure 1.1 Annual Operating Performance of National Railroad Corporation, US (Amtrak)- Operating results (Reference Paragraph 1.1.1)								
(\$ in Millions)	Prior year to Data September Financial Year 2020 (in \$)	Actual year to Data September Financial Year 2021 (in \$)	Year to year Growth		September Forecast year to Data September Financial Year 2021 (in \$)	Actual year to Data September Financial Year 2021 (in \$)	Favourable /Unfavourable vs September Forecast	
			\$	Per cent			\$	Per cent
1	2	3	4	5	6	7	8	9
			(Col. 2-Col. 3)				(Col. 7- Col. 6)	
Other Core Revenue	303.2	307.6	4.4	1	302.2	307.6	5.4	2
Ancillary Revenue	350.1	361.7	11.6	3	359.4	361.7	2.3	2
Total Revenue	2,264.5	1,933.1	331.4	15	1,913.4	1,933.1	19.7	2
Salaries	302.8	341.0	38.2	13	341.3	341.0	0.3	0
Wages & Overtime	1,052.8	997.1	55.7	5	994.5	997.1	2.6	0
Employee Benefits	581.2	542.2	39.0	7	542.7	542.2	0.5	0
Employee Related	21.9	21.8	0.2	1	22.3	21.8	0.5	2
Salaries, Wages & Benefits	1,958.7	1,902.1	56.6	3	1,900.7	1,902.1	1.4	0
Train Operations	275.6	215.9	59.8	22	215.4	215.9	0.4	0
Fuel, Power & Utilities	215.5	188.4	27.1	13	185.6	188.4	2.8	1

Annexure 1.1 Annual Operating Performance of National Railroad Corporation, US (Amtrak)- Operating results (Reference Paragraph 1.1.1)									
(\$ in Millions)	Prior year to Data September Financial Year 2020 (in \$)	Actual year to Data September Financial Year 2021 (in \$)	Year to year Growth		September Forecast year to Data September Financial Year 2021 (in \$)	Actual year to Data September Financial Year 2021 (in \$)	Favourable /Unfavourable vs September Forecast		
			\$	Per cent			\$	Per cent	
1	2	3	4	5	6	7	8	9	
			(Col. 2- Col. 3)				(Col. 7- Col. 6)		
Materials	150.1	128.3	21.8	15	120.1	128.3	8.2	7	
Facility, Communication & Office	164.2	173.3	9.1	6	171.0	173.3	2.3	1	
Advertising and Sales	56.6	56.2	0.4	1	53.2	56.2	3.0	6	
Casualty and Other Claims	58.6	90.1	31.4	54	69.5	90.1	20.5	30	
Professional Fees & Data Processing	218.0	194.4	23.6	11	194.8	194.4	0.3	0	
All Other Expense	128.3	191.6	63.3	49	191.7	191.6	0.1	0	
Transfer to Capital & Ancillary	172.0	177.2	5.1	3	173.7	177.2	3.4	2	
Total Expense	3,053.6	2,963.1	90.5	3	2,928.3	2,963.1	34.8	1	

Annexure 1.1 Annual Operating Performance of National Railroad Corporation, US (Amtrak)- Operating results (Reference Paragraph 1.1.1)									
(\$ in Millions)	Prior year to Data September Financial Year 2020 (in \$)	Actual year to Data September Financial Year 2021 (in \$)	Year to year Growth		September Forecast year to Data September Financial Year 2021 (in \$)	Actual year to Data September Financial Year 2021 (in \$)	Favourable /Unfavourable vs September Forecast		
			\$	Per cent			\$	Per cent	
1	2	3	4	5	6	7	8	9	(Col. 7- Col. 6)
			(Col. 2- Col. 3)						
Adjusted Operating Earnings	789.10	1,030.00	240.90	31	1,014.90	1,030.00	15.1	1	
OPEB's and Pension	31.4	34.5	3.1	10	34.6	34.5	0.1	0	
Project Related Revenue & Expense	151.2	147.2	4.0	3	149.7	147.2	2.5	2	
Depreciation	926.3	905.0	21.3	2	912.9	905.0	7.9	1	
Office of Inspector General	22.4	24.1	1.8	8	23.7	24.1	0.5	2	
State Capital Payment Amortization	133.4	139.7	6.3	5	138.4	139.7	1.3	1	
Non-Operating Inc./(Exp)	45.2	23.1	68.3	151	23.5	23.1	0.4	2	
Net Income/ (Loss)	1,679.00	1,955.20	276.20	16	1,951.70	1,955.20	3.6	0	

Annexure 1.2 Sample size selection (Reference Paragraph 1.1.5)			
Sl. No.	Name of activity	Selection criteria/ sample size	Units selected
1	2	3	4
1.	Divisions	Two division with highest Sundry/NFR earnings from each ZR	32 Divisions, BLW, CLW and Metro Railway
2.	Unsolicited proposal- long term and short term	Maximum 5 proposals from each category	Long Term-24 cases Short Term-7 cases
3.	Stations	Maximum 05 stations with highest earning	83 stations of ZRs and 5 stations of Metro Railway
4.	Trains	Maximum 5 stations with highest earning	80 Trains of 16 ZRs and MR
5.	Way Leave Facility	Finalized during the review period 2017-21 - 10 cases each from selected Division	10 contracts from selected two Divisions of each ZR
8.	Earning from Parking	(a) Earnings from parking at railway land other than at stations – 100 per cent (b) Earnings from parking at railway land at stations- 10 contracts each from selected Division	10 contracts each from selected two Divisions of each ZR
9.	Pay & Use Toilets	Contracts finalized during the review period - 10 each from selected Division	10 contracts each from selected two Divisions
10.	Earnings from catering contracts by Railways	Contracts finalized during the review period. 10 contracts each from selected Division	10 contracts each from selected two Divisions of each ZR

Annexure 1.3					
Results of inspection of 45 selected stations of nine ZRs¹⁵⁰ (Reference Paragraph 1.1.6.8)					
Description of item	Available		Not available		
	No. of ZRs	No. of stations	No. of ZRs	No. of stations	
1	2	3	4	5	
RDN screen display attached with PRS	5	9	9	36	
RDN screen display contained information related with arrivals, departure & running status of trains.	6	26	8	19	
Facility of RDN screen display containing information pertaining to passenger comforts, Amenities & passenger Safety messages	4	7	9	38	
RDN contained information on disaster relief updates in case of emergencies	3	3	9	42	

¹⁵⁰ CR, ECoR, ECR, NCR, NEFR, SR, SCR, SER, SWR

Annexure 1.4 Earnings received through catering contracts by Railways (Reference Paragraph 1.1.6.14)								
Year	Railway/ Metro Railway/ Railway Production Unit	Division	No. of licenses awarded	No. of cases test checked in audit	Estimated License Fee as per tender (₹ in lakh)	License fee fixed as per contract (₹ in lakh)	License fee actually received (₹ in lakh)	Short receipt/ Outstanding licence fee, if any (₹ in lakh)
1	2	3	4	5	6	7	8	9 (Col. 7 - Col. 8)
2017-18 to 2020-21	CR	MUMBAI	28	28	134.93	198.82	198.82	0.00
2017-18 to 2020-21	CR	PUNE	11	11	63.92	86.04	86.43	-0.39
2017-18 to 2020-21	ER	HWH	27	10	66.91	569.60	196.57	373.03
2017-18 to 2020-21	ER	SDAH	18	10	38.47	109.14	111.01	0.00
2017-18 to 2020-21	ECR	DNR	68	0	447.00	447.00	450.09	-3.09
2017-18 to 2020-21	ECR	DHN	46	0	41.52	92.72	92.72	0.00
2017-18 to 2020-21	ECoR	WAT	123	10		948.62	554.61	394.01
2017-18 to 2020-21	ECoR	KUR	404	10		1269.07	1002.43	266.64
2017-18 to 2020-21	NR	DELHI	41	10	101.04	152.15	152.15	0.00
2017-18 to 2020-21	NR	LKO	82	10	69.94	177.37	176.96	0.41
2017-18 to 2020-22	NCR	PRYJ	81	10	137.17	262.10	156.76	105.34
2017-18 to 2020-22	NCR	JHS	19	10	119.28	178.36	178.36	0.00
2017-18 to 2020-22	NER	BSB	0	0	0.00	0.00	0.00	0.00
2017-18 to 2019-20	NER	LJN	0	0	0.00	0.00	0.00	0.00
2017-18 to 2019-20	NEFR	LMG	4	0	8.58	170.08	122.46	47.62

Annexure 1.4 Earnings received through catering contracts by Railways (Reference Paragraph 1.1.6.14)								
Year	Railway/ Metro Railway/ Railway Production Unit	Division	No. of licenses awarded	No. of cases test checked in audit	Estimated License Fee as per tender (₹ in lakh)	License fee fixed as per contract (₹ in lakh)	License fee actually received (₹ in lakh)	Short receipt/ Outstanding licence fee, if any (₹ in lakh)
1	2	3	4	5	6	7	8	9 (Col. 7 - Col. 8)
2017-18 to 2019-20	NEFR	KIR	0	0	0	0	0	0.00
2017-18 to 2019-20	NWR	JP	20	10	30.06	102.25	27.81	74.44
2017-18 to 2019-20	NWR	AJMER	13	10	52.90	108.11	47.79	60.32
2017-18 to 2019-20	SR	MAS	15	0	99.32	210.38	210.38	0.00
2017-18 to 2019-20	SR	TVC	28	0	173.52	246.89	246.89	0.00
2017-18 to 2019-20	SCR	SC	12	10	54.64	66.34	66.34	0.00
2017-18 to 2019-20	SCR	BZA	16	10	34.48	73.60	73.60	0.00
2017-18 to 2019-20	SER	CKP	52	10	72.97	124.92	124.92	0.00
2017-18 to 2019-20	SER	KPG	19	10	79.77	25.35	22.10	3.25
2017-18 to 2019-20	SECR	BSP	37	10	47.39	144.96	85.05	59.91
2017-18 to 2019-20	SECR	NGP	14	10	7.46	13.47	13.47	0.00
2017-18 to 2019-20	SWR	UBL	73	10	31.66	52.64	52.64	0.00
2017-18 to 2019-20	SWR	SBC	42	7	19.01	36.92	36.92	0.00
2017-18 to 2019-20	WR	MMCT	56	0	84.77	148.10	148.10	0.00
2017-18 to 2019-20	WR	ADI	55	0	34.41	65.18	65.18	0.00
2017-18 to 2019-20	WCR	JBP	95	10	299.19	637.40	637.40	0.00

Annexure 1.4 Earnings received through catering contracts by Railways (Reference Paragraph 1.1.6.14)								
Year	Railway/ Metro Railway/ Railway Production Unit	Division	No. of licenses awarded	No. of cases test checked in audit	Estimated License Fee as per tender (₹ in lakh)	License fee fixed as per contract (₹ in lakh)	License fee actually received (₹ in lakh)	Short receipt/ Outstanding licence fee, if any (₹ in lakh)
1	2	3	4	5	6	7	8	9 (Col. 7 - Col. 8)
2017-18 to 2019-20	WCR	BPL	65	0	216.71	516.49	516.49	0.00
2017-18 to 2019-20	BLW	-	0	0	0	0	0	0.00
2017-18 to 2019-20	CLW	-	0	0	0	0	0	0.00
2017-18 to 2019-20	MR	-	0	0	0	0	0	0.00
Total			1564	226	2566.99	7234.06	5854.45	1381.48
						Say ₹ 72.34 crore	Say ₹ 58.54 crore	Say ₹ 13.81 crore

Annexure 1.5																
Statement showing analysis of NFR earnings of Zonal Railways for the year 2020-21 (Reference Paragraph 1.1.6.18)																
ZR	No. of Division	Budget Estimate	Revised Estimate	Sum of Z 611	Sum of Z 612	Sum of Z 613	Sum of Z 614	Sum of Z 615	Sum of Z 616	Sum of Z 617	Sum of Z 618	Sum of Z 248	Total earnings	Per cent of Share of RE to Total IR RE	Per cent of Shortfall in achievement	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 (Col. 14*100/Total of Col. 14)	16 (Col. 4*100/Total of Col. 4)	17 (100 - Col. 14)
WR	6	139.30	29.87	0.70	1.39	8.01	1.92	0.02	0.00	1.56	9.30	0.09	22.99	25	20	83
CR	5	114.80	35.00	3.50	1.72	4.97	1.97	0.06	0.01	1.57	7.02	0.10	20.92	23	23	82
SR	6	58.80	12.50	0.71	1.22	3.35	1.92	0.00	0.00	1.79	5.06	0.00	14.06	15	8	76
Metro	1	44.10	18.00	0.80	0.28	1.56	0.18	0.00	0.00	8.73	0.00	0.00	11.55	13	12	74
NR	5	71.40	13.50	0.63	0.14	0.39	1.38	0.10	0.00	7.22	0.17	0.00	10.03	11	9	86
ECoR	3	29.40	6.50	0.00	4.50	0.29	0.66	0.00	0.00	0.17	1.24	0.00	6.86	7	4	77
ER	5	37.80	3.75	0.48	0.63	0.23	2.13	1.18	0.00	0.43	0.06	0.00	5.15	6	3	86
NWR	4	21.00	4.00	0.51	0.07	0.47	0.63	0.00	0.00	1.38	0.77	0.00	3.83	4	3	82
SCR	6	28.00	5.25	0.01	0.89	0.19	1.02	0.17	0.00	0.77	0.37	0.00	3.42	4	4	88
SER	4	21.00	1.75	0.01	0.32	0.36	1.23	0.00	0.00	0.03	1.09	0.00	3.06	3	1	85

Annexure 1.5																
Statement showing analysis of NFR earnings of Zonal Railways for the year 2020-21 (Reference Paragraph 1.1.6.18)																
ZR	No. of Division	Budget Estimate	Revised Estimate	Sum of Z 611	Sum of Z 612	Sum of Z 613	Sum of Z 614	Sum of Z 615	Sum of Z 616	Sum of Z 617	Sum of Z 618	Sum of Z 248	Total earnings	Per cent of Share of RE to Total IR RE	Per cent of Shortfall in achievement	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 (Col. 14*100/Total of Col. 14)	16 (Col. 4*100/Total of Col. 4)	17 (100 - Col. 14)
ECR	6	18.90	4.50	0.04	0.25	0.54	0.62	0.00	0.00	0.36	1.07	0.07	2.95	3	3	84
NFR	6	13.65	2.25	0.06	0.04	0.59	0.66	0.02	0.00	0.04	1.09	0.00	2.50	3	2	82
NER	4	21.00	2.75	0.00	0.02	0.41	0.59	0.00	0.00	0.44	0.26	0.00	1.72	2	2	92
NCR	3	13.65	1.25	0.08	0.00	0.00	0.27	0.00	0.00	0.18	1.06	0.00	1.60	2	1	88
SWR	4	28.00	3.25	0.21	0.00	0.02	0.69	0.00	0.00	0.18	0.35	0.00	1.45	2	2	95
WCR	3	31.50	3.75	0.01	0.00	0.19	0.45	0.21	0.00	0.32	0.19	0.00	1.37	1	3	96
SECR	3	8.40	2.13	0.47	0.02	0.27	0.00	0.00	0.00	0.14	0.03	0.00	0.93	1	1	89
Total	75	462.00	150.00	7.10	10.24	13.97	14.71	1.73	0.01	23.99	19.83	0.18	91.76			

Annexure 2.1		
Infructuous expenditure on Pre-Construction Survey conducted by M/s RITES Ltd		
[Reference Paragraph 2.1.2.1 (A) (i)]		
I. Infructuous Expenditure on abandoned Pre-Construction Survey		
1	Total length for which Pre-Construction Survey was carried out by RITES (km)	118.2
2	Total length for which RITES Pre-Construction Survey had to be abandoned due to change in take-off point (Dimapur to Dhansiri) of the new line (km)	19.219
3	Total length for which RITES Pre-Construction Survey had to be abandoned due to change in terminating point of the new line (from Kohima to Zubza) (km)	31.6
4	Total length for which RITES Pre-Construction Survey had to be abandoned due to delayed decision of Railway Administration for rectification in Pre-Construction Survey (km)	50.819
5	Total payment made to RITES for Pre-Construction Survey work (₹)	69980899
6	Proportionate expenditure on RITES Pre-Construction Survey (50.819 km) which had to be abandoned (₹)	30087642.19
7	Infructuous expenditure on abandoned Pre-Construction Survey of DMV-Kohima NL project (₹)	39893257
II. Infructuous Expenditure on abandoned Geo-technical Investigation		
1	Total length for which Geo-technical investigation work was carried out by M/s Associates Construction & Consultancy (km)	120
2	Total length for which Geo-technical investigation work had to be abandoned due to change in take-off point (Dimapur to Dhansiri) of the new line (km)	19.219
3	Total length for which Geo-technical investigation work had to be abandoned due to change in terminating point of the new line (from Kohima to Zubza) (km)	31.6

Annexure 2.1		
Infructuous expenditure on Pre-Construction Survey conducted by M/s RITES Ltd		
[Reference Paragraph 2.1.2.1 (A) (ii)]		
4	Total length for which Geo-technical investigation work had to be abandoned due to delayed decision of Railway Administration for rectification in Pre-Construction Survey (km)	50.819
5	Total payment made to M/s Associates Construction & Consultancy for Geo-technical investigation work (₹)	25205581
6	Proportionate expenditure on Geo-technical investigation work (50.819 km) which had to be abandoned (₹)	10674353.51
7	Infructuous expenditure on abandoned Geo-technical investigation work of DMV-KOHIMA NL project (₹)	14531227.49
Total avoidable Expenditure on Pre-Construction Survey & Geo-technical Investigation		
1	Infructuous expenditure on abandoned Pre-Construction Survey of RITES (₹)	39893257
2	Infructuous expenditure on abandoned Geo-technical investigation of M/s Associates Construction & Consultancy (₹)	14531227.49
	Total infructuous on abandoned Pre-Construction Survey and abandoned Geo-technical investigation (₹)	54424484.49
		Say ₹ 5.44 crore

Annexure 2.2 Amount paid for hasty land acquisition which was ultimately abandoned [Reference Paragraph 2.1.2.1 (B) (i)]								
S. No.	Chainage (metre)		Chainage proposed by agency	Area of abandoned land (As per Official Record/Land plan) sq m	Area of abandoned land (As per Official Record/Land plan) sqft	Land plan No.	Plot No.	Amount paid for acquisition of land (₹)
	From	To						
1	2	3	4	5	6	7	8	9
1	74388	76686	RITES	236011	2540401.26	CE/CON/Dimapur-Kohima/L/01/2014 (74.388 km - 77.901 km)	93 to 103	92665818.55
2	77068	78361	RITES	133785	1440049.76	CE/CON/Dimapur-Kohima/L/01/2014 (74.388 km - 77.901 km)	87 to 92	48489542.31
						CE/CON/Dimapur-Kohima/L/02/2014 (77.901 km - 80.439 km)	83, 85 & 86	
3	81150	81450	RITES	48072	516842.69	CE/CON/Dimapur-Kohima/L/04/2014 (80.439 km - 84.685 km)	66 to 68 and 71	19102483.20
4	82650	83200	RITES	63078	678965.94	CE/CON/Dimapur-Kohima/L/04/2014 (80.439 km - 84.685 km)	58A and 59 to 62	34559923.50

Annexure 2.2											
Amount paid for hasty land acquisition which was ultimately abandoned [Reference Paragraph 2.1.2.1 (B) (i)]											
S. No.	Chainage (metre)		Chainage proposed by agency	Area of abandoned land (As per Official Record/Land plan) sq m	Area of abandoned land (As per Official Record/Land plan) sqft	Land plan No.	Plot No.	Amount paid for acquisition of land (₹)			
	From	To									
1	2	3	4	5	6	7	8	9			
5	83407	83776	RITES	36170	389330.64	CE/CON/Dimapur-Kohima/L/04/2014 (80.439 km - 84.685 km)	53, 56, 57 and 57A	15415073.94			
6	84708	85531	RITES	55322	595481.05	CE/CON/Dimapur-Kohima/L/03/2014 (84.618 km - 89.127 km)	42A, 42, 43, 44, 45, 46, 47 and 47A	23129430.78			
Total								6161071.34	233362272.28	Say ₹ 23.34 crore	

Annexure 2.3 Irregular payment of compensation for land acquired (including zirat) over tunnels [Reference Paragraph 2.1.2.1 (B) (ii)]										
Tunnel No.	Total Chainage	Tunnel Length	Chainage	Land plan No.	Village	Estimate no. and date	Plot Nos. in the entire plan	Total Amount paid (₹)	Remarks	
1	2	3	4	5	6	7	8	9	10	
1	21463 m to 24934 m	3471 m	21463 m - 21700 m	Not Applicable	Not Applicable	Not Applicable	Not Applicable	50710294	Compensation for this part of the tunnel was not paid as per estimate & sanction memorandum of compensation of land over tunnel T-1.	
			21700 m - 22900 m	CE/CON/Dimapur - Kohima/L/1/2020 (21.700 km to 22.900 km)	Chumukedima Village, Distt: Dimapur	Not Applicable	Deputy Commissioner, Dimapur 's Estimate dated 03.03.2020			1 to 6
			22900 m - 24050 m	CE/CON/Dimapur - Kohima/L/2/2020 (22.900 km to 24.050 km)	Chumukedima Village, Distt: Dimapur	Not Applicable	Deputy Commissioner, Dimapur 's Estimate dated 03.03.2020			6 to 8
			24050 m to 24934 m	CE/CON/Dimapur - Kohima/L/3/2020 (24.050 km - 25.050 km)	Chumukedima Village, Distt: Dimapur	Not Applicable	Deputy Commissioner, Dimapur 's Estimate dated 03.03.2020			8 to 10

Annexure 2.3 Irregular payment of compensation for land acquired (including zirat) over tunnels [Reference Paragraph 2.1.2.1 (B) (ii)]									
Tunnel No.	Total Chainage	Tunnel Length	Chainage	Land plan No.	Village	Estimate no. and date	Plot Nos. in the entire plan	Total Amount paid (₹)	Remarks
1	2	3	4	5	6	7	8	9	10
2	25338 m to 25543 m	205 m	25338 m to 25543 m	CE/CON/Dimapur-Kohima/L/1/2018 (25.050 km - 27.150 km)	New Chumukedima Village, Distt: Dimapur	Deputy Commissioner, Dimapur's Estimate dated 07.03.2017	11 to 15	16762807.88	
3	25942 m to 26740 m	798 m	25942 m to 26740 m	CE/CON/Dimapur-Kohima/L/1/2018 (25.050 km - 27.150 km)	New Chumukedima Village, Distt: Dimapur	Deputy Commissioner, Dimapur's Estimate dated 07.03.2017	18 to 22	44388921	
4	39939 m to 41190 m	1251 m	39939 m to 40500 m	CE/CON/Dimapur-Kohima/L_/2019 (39.85 km - 40.50 km)	Siri Angami Village, Distt: Dimapur	Deputy Commissioner Dimapur's estimate dated 07.09.2020	1	79358328.90	
5	41841 m to 42010 m	169 m	40500 m to 41190 m	CE/CON/Dimapur-Kohima/L/4/2020 (40.50 km - 41.50 km)	Sirhima Village, Distt: Dimapur	Deputy Commissioner Dimapur's estimate dated 01.10.2020	1 to 13		
			41841 m to 42010 m	CE/CON/Dimapur-Kohima/L/5/2020 (41.50 km - 43.00 km)	Sirhima Village, Distt: Dimapur		20 to 24	4748487.40	

Annexure 2.3 Irregular payment of compensation for land acquired (including zirat) over tunnels [Reference Paragraph 2.1.2.1 (B) (ii)]									
Tunnel No.	Total Chainage	Tunnel Length	Chainage	Land plan No.	Village	Estimate no. and date	Plot Nos. in the entire plan	Total Amount paid (₹)	Remarks
1	2	3	4	5	6	7	8	9	10
6	46100 m to 50700 m	4600 m	46100 m to 46600 m	CE/CON/Dimapur-Kohima/L/5/2018 (45.50 km - 46.60 km)	Pherima Village, Distt: Dimapur	Deputy Commissioner Dimapur's estimate dated 06.02.2018 and estimate dated 13.11.2020	61, 62, 63, 66 & 69	105416870.90	
			46600 m to 47600 m	CE/CON/Dimapur-Kohima/L/6/2018 (46.60 km - 47.60 km)	Pherima Village, Distt: Dimapur		69, 70, 71 & 78		
			47600 m to 48900 m	CE/CON/Dimapur-Kohima/L/7/2018 (47.60 km - 48.90 km)	Tsiepama Village, Distt: Dimapur		01, 01 (A)		
			48900 m to 50400 m	CE/CON/Dimapur-Kohima/L/8/2018 (48.90 km - 50.400 km)	Tsiepama Village, Distt: Dimapur	Deputy Commissioner Dimapur's estimate dated 06.02.2018	1		
			50400 m to 50700 m	CE/CON/Dimapur-Kohima/L/2/2018 (50.400 km - 51.500 km)	Tsiepama Village, Distt: Dimapur		1		

Annexure 2.3 Irregular payment of compensation for land acquired (including zirat) over tunnels [Reference Paragraph 2.1.2.1 (B) (ii)]													
Tunnel No.	Total Chainage	Tunnel Length	Chainage	Land plan No.	Village	Estimate no. and date	Plot Nos. in the entire plan	Total Amount paid (₹)	Remarks				
1	2	3	4	5	6	7	8	9	10				
7	51140 m to 57660 m	6520 m	51140 m to 51500 m	CE/CON/Dimapur-Kohima/L/2/2018 (50.400 km - 51.500 km)	Tsiepama Village, Distt: Dimapur	Deputy Commissioner Dimapur's estimate dated 06.02.2018	4 & 5	1749586656					
			51500 m to 53000 m	CE/CON/Dimapur-Kohima/L/10/2018 (51.500 km - 53.00 km)	Tsiepama Village, Distt: Dimapur		5 to 8						
			53000 m to 54600 m	CE/CON/Dimapur-Kohima/L/11/2018 (53.00 km - 54.600 km)	Tsiepama Village, Distt: Dimapur		9 to 14						
			54600 m to 56100 m	CE/CON/Dimapur-Kohima/L/12/2018 (54.600 km - 56.100 km)	Tsiepama Village, Distt: Dimapur		14 to 19						
			56100 m to 57200 m	CE/CON/Dimapur-Kohima/L/13/2018 (56.100 km - 57.200 km)	Piphema Village, Distt: Dimapur		1						
			57200 m to 57660 m	CE/CON/Dimapur-Kohima/L/14/2018 (57.200 km - 58.150 km)	Piphema Village, Distt: Dimapur		1 & 13						

Annexure 2.3 Irregular payment of compensation for land acquired (including zirat) over tunnels [Reference Paragraph 2.1.2.1 (B) (ii)]									
Tunnel No.	Total Chainage	Tunnel Length	Chainage	Land plan No.	Village	Estimate no. and date	Plot Nos. in the entire plan	Total Amount paid (₹)	Remarks
1	2	3	4	5	6	7	8	9	10
8	58000 m 58120 m	120 m	58000 m to 58120 m	CE/CON/Dimapur- Kohima/L/14/2018 (57.200 km - 58.150 km)	Piphema Village, Distt: Dimapur	Deputy Commissioner's Dimapur's estimate dated 06.02.2018	1	7352827.30	
9	58260 m to 59080 m	820 m	58260 m to 59080 m	CE/CON/Dimapur- Kohima/L/15/2018 (58.150 km - 59.300 km)	Piphema Village, Distt: Dimapur		01, 14 & 15	24794956.56	

Annexure 2.3 Irregular payment of compensation for land acquired (including zirat) over tunnels [Reference Paragraph 2.1.2.1 (B) (ii)]									
Tunnel No.	Total Chainage	Tunnel Length	Chainage	Land plan No.	Village	Estimate no. and date	Plot Nos. in the entire plan	Total Amount paid (₹)	Remarks
1	2	3	4	5	6	7	8	9	10
10	60800 m to 66240 m	5440 m	60800 m to 60860 m	CE/CON/Dimapur-Kohima/L/16/2018 (59.300 km - 60.860 km)	Piphema Village, Distt: Dimapur	Deputy Commissioner Dimapur 's estimate dated 06.02.2018	1	121005999.80	Document could not be traced by the executive. Reminder issued for early supply.
			60860 m to 65510 m	CE/CON/Dimapur-Kohima/L/_/2018 (60.860 km - 65.510 km)	Kiruphema and Menguzuma Village. Distt: Kohima	Deputy Commissioner Kohima 's estimate dated 15.11.2018	1 to 67 and 77		
			65510 m to 66000 m	NA	NA				
			66000 m to 66240 m	CE/CON/Dimapur-Kohima/L/_/2018 (66.00 km - 67.200 km)	Kiruphema and Menguzuma Village. Distt: Kohima	Deputy Commissioner Kohima 's estimate dated 15.11.2018	68 to 70		

Annexure 2.3 Irregular payment of compensation for land acquired (including zirat) over tunnels [Reference Paragraph 2.1.2.1 (B) (ii)]									
Tunnel No.	Total Chainage	Tunnel Length	Chainage	Land plan No.	Village	Estimate no. and date	Plot Nos. in the entire plan	Total Amount paid (₹)	Remarks
1	2	3	4	5	6	7	8	9	10
11	68730 m to 69580 m	850 m	68730 m to 69580 m	NA	NA	NA		NA	Document could not be traced by the executive. Reminder issued for early supply.
12	69760 m to 69900 m	140 m	69760 m to 69900 m	NA	NA	NA		NA	Document could not be traced by the executive. Reminder issued for early supply.
13	70360 m to 71700 m	1340 m	70360 m to 71600 m	NA	NA	NA		NA	Document could not be traced by the executive. Reminder issued for early supply.
			71600 m to 71700 m	CE/CON/Dimapur-Kohima/L/02/2021 (71.600 km- 71.900 km)	Menguzuma Village, Distt: Kohima	NA	4 & 5	NA	Land compensation paid after March/2021. Hence data not included in calculation.

Annexure 2.3 Irregular payment of compensation for land acquired (including zirat) over tunnels [Reference Paragraph 2.1.2.1 (B) (ii)]									
Tunnel No.	Total Chainage	Tunnel Length	Chainage	Land plan No.	Village	Estimate no. and date	Plot Nos. in the entire plan	Total Amount paid (₹)	Remarks
1	2	3	4	5	6	7	8	9	10
14	72040 m to 72660 m	620 m	72040 m to 72350 m	NA	NA	NA		NA	Document could not be traced by the executive. Reminder issued for early supply.
			72350 m to 72660 m	CE/CON/Dimapur-Kohima/L/01/2021 (72.35 km - 74.30 km)	Kiruphema Village, Distt: Kohima	NA	1 to 5	NA	Land compensation paid after March/2021. Hence data not included in calculation.
15	73100 m to 73180 m	80 m	73100 m to 73180 m	CE/CON/Dimapur-Kohima/L/01/2021 (72.35 km - 74.30 km)	Kiruphema Village, Distt: Kohima	NA	10	NA	Land compensation paid after March/2021. Hence data not included in calculation.

Annexure 2.3 Irregular payment of compensation for land acquired (including zirat) over tunnels [Reference Paragraph 2.1.2.1 (B) (ii)]									
Tunnel No.	Total Chainage	Tunnel Length	Chainage	Land plan No.	Village	Estimate no. and date	Plot Nos. in the entire plan	Total Amount paid (₹)	Remarks
1	2	3	4	5	6	7	8	9	10
16	74200 m to 75120 m	920 m	74200 m to 74300 m	CE/CON/Dimapur-Kohima/L/01/2021 (72.35 km - 74.30 km)	Kiruphema Village, Distt: Kohima	NA	15	34989014.50	Document could not be traced by the executive. Reminder issued for early supply.
			74300 m to 74388 m	NA	NA				
			74388 m to 75120 m	CE/CON/Dimapur-Kohima/L/01/2014 (74.388 km - 77.901 km)	Lalmati Peducha, Distt: Kohima	Deputy Commissioner Kohima's estimate dated 11.02.2016	98 to 103 and 96		
17	75540 m to 76080 m	540 m	75540 m to 76080 m	CE/CON/Dimapur-Kohima/L/01/2014 (74.388 km - 77.901 km)	Lalmati Peducha, Distt: Kohima		94, 95 & 96	19949663.80	

Annexure 2.3 Irregular payment of compensation for land acquired (including zirat) over tunnels [Reference Paragraph 2.1.2.1 (B) (ii)]										
Tunnel No.	Total Chainage	Tunnel Length	Chainage	Land plan No.	Village	Estimate no. and date	Plot Nos. in the entire plan	Total Amount paid (₹)	Remarks	
1	2	3	4	5	6	7	8	9	10	
18	77160 m to 77320 m	160 m	77160 m to 77320 m	CE/CON/Dimapur-Kohima/L/01/2014 (74.388 km - 77.901 km)	Lalmati Peducha, Distt: Kohima	Deputy Commissioner Kohima's estimate dated 11.02.2016	91 and 92	4901887.65		
19	79800 m to 80560 m	760 m	79800 m to 80560 m	Plan shown in file no. W/207/CON/Land Compensation/DMV-I, Land acquisition SM No. 20(Land)/2018 dated june 2018 for acquisition between ch 77.815 k to 81.85 km	Sechu, Zubza, Distt: Kohima	Deputy Commissioner Kohima's estimate dated 25.04.2018	56 to 92 and 49, 54, 55, 89, 95 & 97	107635262.10		
Total								796973977.80	Say ₹ 79.70 crore	

Annexure 2.4 Avoidable expenditure on acquisition of excess width of land [Reference Paragraph 2.1.2.1 (B) (iii)]									
Chainage		Chainage Proposed By Agency	Area acquired as per land plan (sqm)	Village	Land plan Nos	Plot no. of land acquired	Amount of irregular compensation paid (₹)		
From (m)	To (m)								
1	2	3	4	5	6	7	8		
18300	18600	Ayasa	36000	Chumukedima, Dimapur	CE/CON/Dimapur-Kohima/L/07/2016	1 to 9	26693681.00		
18650	18800	Ayasa	18000	Chumukedima, Dimapur	CE/CON/Dimapur-Kohima/L/07/2016	11	19008564.50		
18800	19100	Ayasa	24000	Chumukedima, Dimapur	CE/CON/Dimapur-Kohima/L/07/2016	12, 13 & 15 to 30	24159385.40		
20000	20250	Ayasa	20000	Chumukedima, Dimapur	CE/CON/Dimapur-Kohima/L/08/2016	54, 55 & 56	6406884.84		
38350	38650	Ayasa	36000	Sochunoma, Distt: Dimapur	CE/CON/Dimapur-Kohima/L/02/2017	52 to 58	17850362.10		
38650	38800	Ayasa	15000	Sochunoma, Distt: Dimapur	CE/CON/Dimapur-Kohima/L/02/2017	45 to 51	4863016.57		
38800	39150	Ayasa	28000	Sochunoma, Distt: Dimapur	CE/CON/Dimapur-Kohima/L/02/2017	35 to 45	12805361.50		
43050	43300	Ayasa	25000	Pherima, dimapur	CE/CON/Dimapur-Kohima/L/3/2018	1 to 7	3875584.93		
72700	72800	Ayasa	22500	Kiruphema, Kohima	CE/CON/Dimapur-Kohima/L/01/2021	5 & 7	4523047.60		

Annexure 2.4 Avoidable expenditure on acquisition of excess width of land [Reference Paragraph 2.1.2.1 (B) (iii)]							
Chainage		Chainage Proposed By Agency	Area acquired as per land plan (sqm)	Village	Land plan Nos	Plot no. of land acquired	Amount of irregular compensation paid (₹)
From (m)	To (m)						
1	2	3	4	5	6	7	8
81600	81700	RITES		Menguzuma, Kohima	CE/CON/Dimapur-Kohima/L/04/2014	71	
73200	73400	Ayesa		Kiruphema, Kohima	CE/CON/Dimapur-Kohima/L/01/2021	10	6113109.72
82150	82350	RITES	27000	Menguzuma, Kohima	CE/CON/Dimapur-Kohima/L/04/2014	71 & 72	
73400	73600	Ayesa		Kiruphema, Kohima	CE/CON/Dimapur-Kohima/L/01/2021	NA	
82350	82550	RITES	17000	Menguzuma, Kohima	CE/CON/Dimapur-Kohima/L/04/2014	61, 61A & 72	2000938.80
73600	73800	Ayesa		Kiruphema, Kohima	CE/CON/Dimapur-Kohima/L/01/2021	11, 12, 13A, 13B & 16	1388878.92
82550	82750	RITES	20000	Menguzuma, Kohima	CE/CON/Dimapur-Kohima/L/04/2014	59 to 63	
		Total	288500				129688815.88
							Say ₹ 12.97 crore

Annexure 2.5			
Irregular payment made on account of resurvey/reclassification of land			
[Reference Paragraph 2.1.2.1 (B) (iv)]			
S. No.	SM No. and Date	Villages involved in reclassification	Compensation amount paid (₹)
1	2	3	4
1	SM No. 05 land/2019 dated 04.01.2019	Kiruphema and Menguzuma villages, Distt: Kohima	12887972
2	SM No. 89 (Land)/2017 dated 14.11.2017	Chumukedima, New Chumukedima, Molvom, New Sochunoma, Zuikhu, Moava, Khaibung. Distt: Dimapur	30169663
3	SM No. 05(Land)/2017 dated 24.01.2017	Dhansiripar, Pimla, Sukhovi and Chumukedima. Distt: Dimapur	26617138
		Total	69674773
			Say ₹ 6.97 crore

Annexure 2.6	
Irregular Payment of Establishment Charges on Land Compensation Cost	
[Reference Paragraph 2.1.2.1 (B) (v)]	
1. Compensation paid to Nagaland Government for Land Acquisition	
(A) Total Compensation paid (Assam + Nagaland) <i>[as per Statement with proposed 1st Revised Estimate]</i>	₹ 506,77,68,106
(B) Add: Compensation paid vide SM No: 89 (land)/ 2017 dated 14.11.2017	₹ 20,59,43,948 ¹⁵¹
(C) Less:	
(i) Land compensation paid to Assam Govt	₹ 15,82,68,690 ¹⁵²
(ii) Additional compensation due to enhanced rate.	₹ 24,81,11,455 ¹⁵³
Net Land Compensation paid to Nagaland Government = (A) + (B) – [C (i) – C (ii)]	₹ 486,73,32,009
2. Calculation of Irregular Payment of Establishment Charges (4%)	
(a) Amount of Compensation (inclusive of 4% Establishment Charges)	₹ 486,73,32,009
(b) Amount of compensation (exclusive of 4% Establishment Charges)	₹ 468,01,26,932 ¹⁵⁴
Therefore, amount of Establishment Charges [@ 4%]= (a) – (b)	₹ 18,72,05,077
Irregular Payment of Establishment Charges (as State Revenue)	₹ 18,72,05,077
	Say ₹ 18.72 crore

¹⁵¹ This amount was not included in the Statement of compensation sent with proposed 1st Revised Estimate.

¹⁵² Compensation amount was paid to Assam Govt.

¹⁵³ Additional compensation paid due to enhancement of land rent but Establishment Charges at the rate of 8 per cent was not paid.

¹⁵⁴ Amount of Compensation = ₹ 486,73,32,009 x 100/104 = ₹ 468,01,26,932.

Annexure 2.7 Anticipated liability due to irrational proposal of cross section of tunnels [Reference Paragraph 2.1.2.1 (C) (1)]		
I. Calculation of length of tunnels where new cross section is proposed to be adopted		
SI. No.	Tunnel No.	Tunnel length (excluding cut and cover) metre
1	2	3
1	6	4600
2	7	6520
3	8	120
4	9	820
5	10	5440
6	11	850
7	12	140
8	13	1340
9	14	620
10	15	80
11	16	920
12	17	540
13	18	160
14	19	760
	Total	22910

Annexure 2.7	
Anticipated liability due to irrational proposal of cross section of tunnels [Reference Paragraph 2.1.2.1 (C) (1)]	
II. Calculation for anticipated Liability	
A	Length of tunnels proposed with new cross section = 22910 RM = 22.91 km
B	Estimated cost of tunnels per RM = ₹ 8.39 lakh
C	Total estimated cost of tunnels = A x B = 22910 x 8.39 = ₹ 1922.14 crores
D	Total cost of the Project as per 1st RE under consideration = ₹ 6911.44 crores
E	Net saving per Km during life cycle of 30 years if ROCS is adopted = ₹ 38.37 crores
F	Total overall liability (saving) during life cycle of 30 years = A x E = ₹ 879.05 crores
G	Percentage saving with respect to total project cost = F/D x 100 = 12.71%
H	Estimated construction liability if ROCs is not adopted 12.71 % of total cost = (C) - (C) x 100/112.71 = ₹ 216.75 crores
Estimated construction liability ₹ 216.75 crore	
Total overall liability (saving) during life cycle of 30 years- ₹ 879.05 crore	

Annexure 2.8		
Avoidable Liability/Expenditure due to inconsistent Planning		
[Reference Paragraph 2.1.2.1 (C) (2)]		
S. No	Particulars	Length/Amount
1	2	3
I. Calculation of Total Cost of Tunnels No: T-1A, T-2 & T-3		
1	Total length of Tunnels (T-1A, T-1, T-2 & T-3) as per SCA	4526 RM ¹⁵⁵
2	Total SCA Value	₹ 388.0 crore
3	Revised cost of Tunnel Per RM [(2)/(1)]	₹ 8,57,313
4	Length of Tunnels No: T-1A, T-2 & T-3 (As per Tunnel Statement)	1066 RM
5	Total revised cost of Tunnels No: T-1A, T-2 & T-3 [(3) x (4)]	₹ 91,38,95,658
II. Calculation of avoidable Liability/Expenditure		
6	Revised cost of Tunnels No: T-1A, T-2 & T-3	₹ 91,38,95,658
7	Increase in cost (over CA Cost) due to change/ increase in cross-section of the Tunnels	7.2 % over CA value
8	Original cost of Tunnels No: T-1A, T-2 & T-3 [(1) x 100/107.2]	₹ 85,25,14,606
9	Avoidable Liability/Expenditure [(6) - (8)]	₹ 6,13,81,052
Total avoidable liability/expenditure		Say ₹ 6.14 crore

Annexure 2.9 Blockage of Revenue due to irrational procurement of Signalling Materials [Reference Paragraph 2.1.2.1 (D) (i)]									
Sl. No.	Description of material	Quantity received (Nos./KM)	Date of receipt	Cost of materials (₹)	Rate (₹)	Quantity issued (Nos./KM)	Quantity balance (Nos./KM)	Cost of balance quantity (₹)	Remarks
1	2	3	4	5	6	7	8	9	10
1	20 Pair switch Board cable	3.00	09.10.2017	771840	257280.00	0.10	2.90	746112.00	
2	Drop wire	10.00	09.10.2017	307200	30720.00	0.00	10.00	307200.00	
3	2cx25 sqmm	84.02	27.02.2018	7823678	93116.85	49.00	35.00	3259089.86	Issued to HJI-LMG R/O N/555/7/141/CON/A GTL/51, dtd. 26.03.2019
4	12cx1.5 sqmm	198.44	23.02.2018	32767230	165126.61	167.00	32.00	5284051.66	
5	LED Calling on	27.00	28.04.2018	188799	6992.56	6.00	21.00	146843.67	
6	LED Red	136.00	19.05.2018	1168371	8590.96	34.00	102.00	876278.25	
7	LED Yellow	169.00	19.05.2018	1451874	8590.97	41.00	128.00	1099644.21	
8	LED Green	116.00	19.05.2018	1112424	9589.86	23.00	93.00	891857.17	
9	50 Pair PIJF Cable	8.90	01.06.2018	2461335	276709.95	0.51	8.39	2321319.77	

Annexure 2.9									
Blockage of Revenue due to irrational procurement of Signalling Materials [Reference Paragraph 2.1.2.1 (D) (i)]									
Sl. No.	Description of material	Quantity received (Nos./KM)	Date of receipt	Cost of materials (₹)	Rate (₹)	Quantity issued (Nos./KM)	Quantity balance (Nos./KM)	Cost of balance quantity (₹)	Remarks
1	2	3	4	5	6	7	8	9	10
10	20 Pair PIJF Cable	1.00	01.06.2018	143541	143541.00	0.40	0.60	85981.06	
11	LED Route	202.00	30.06.2018	1210869	5994.40	93.00	109.00	653389.71	
12	6 Quad Cable 1.4 mm	133.72	31.07.2018	60302108	450954.66	35.50	99.00	44644511.27	Issued to SSE/SIG/GHY as per CSTE/C/MLG-II General, dt.08.04.2021
13	Thermoshin king jointing kit	47.00	10.08.2018	144196	3068.00	1.00	46.00	141128.00	
14	OFC Cable	112.34	07.11.2018	10226915	91037.00	50.64	61.70	5616983.17	Issued to HJI-LMG R/O No. N/555/7/141/CON/A GTL/51, dt.26.03.2019
15	IPS	10.00	08.11.2018	10924192	1092419.20	2.00	8.00	8739353.60	
16	LED shunt	242.00	29.04.2019	1448130	5984.01	60.00	182.00	1089089.50	
17	2cx2.5 sqmm	81.37	20.05.2019	8860203	108887.83	17.27	64.10	6980036.78	

Annexure 2.9									
Blockage of Revenue due to irrational procurement of Signalling Materials [Reference Paragraph 2.1.2.1 (D) (i)]									
Sl. No.	Description of material	Quantity received (Nos./KM)	Date of receipt	Cost of materials (₹)	Rate (₹)	Quantity issued (Nos./KM)	Quantity balance (Nos./KM)	Cost of balance quantity (₹)	Remarks
1	2	3	4	5	6	7	8	9	10
18	Point contactor unit	56.00	12.07.2019	991134	17698.82	0.00	56.00	991134.00	
19	12cx1.5 sqmm	150.08	12.09.2020	30562798	203650.16	0.00	150.08	30562798.00	0.400 Kms Quantity adjust at AGTL-Sabroom, hence cost of the material of the aforesaid quantity has not been taken.
Total				172866837				114436801.69	
									Say ₹ 11.44 crore

Annexure 2.10 (a)	
Irregular expenditure on Blanketing Material (for period prior to July 2019)	
[Reference Paragraph 2.1.2.2 (A)]	
S. No	Contract Agreement No. Irregular Payment towards blanketing material (₹)
1	2 3
1	CON/D-K/2170 17081971.00
2	CON/D-K/2181 9639244.80
	Total 26721215.80
	Say ₹ 2.67 crore

Annexure 2.10 (b) Irregular expenditure on Blanketing Material (after July 2019) [Reference Paragraph 2.1.2.2 (A)]		
S. No	Contract Agreement No.	Irregular Payment towards blanketing material (₹)
1	2	3
1	CON/D-K/2170	18579277.96
2	CON/D-K/2181	19813377.60
	Total	38392655.56
		Say ₹ 3.84 crore

Annexure 2.11									
Details of extension granted and payment of Price Variation (PV) due to delay in execution of work [Reference Paragraph 2.1.2.2 (B)]									
Sl. No.	Year	Contract No. & Date [CA value of more than ₹ five crore)	Original date of completion	Latest extension granted up to	Main reasons for grant of extension	No. of Extensions granted [under Clause 17 of GCC]	Period of Extensions [under Clause 17 of GCC]	Whether the work is in progress or completed	Price Variation (PV) paid (₹)
1	2016-17	CON/D-K/2336, dt. 21.04.2017	15.02.2019	30.09.2022	Due to land along alignment (ch 38500 m to 42300 m) not clear, High tension wires along the alignment affected the work, Drawings of minor Bridges not handed over, Non-availability of Approach Road in Pherima Yard and COVID-19 pandemic	4	33.5	In progress	(i) PVC- I= ₹ 12970752 (dt.19.06.18) (ii) PVC- II = ₹ 12730250 (dt.18.05.19), (iii) PVC- III= ₹ 8774635.32 (dt.27.11.21)
2	2019-20	CON/D-K/2512 dtd. 17.01.19	23.08.2020	31.08.2022	Due to late approval of drawings, Monsoon, Land dispute, COVID-19 lockdown, Major portion of Br. 154 handed over by Jan 2021, Non availability of drawing for pier of Br. 154	2	24	In progress	(i) PVC- I= ₹ 9631774 (dt.10.08.21), (ii) PVC- II= ₹ 26555356.96 (dt.01.12.21)

Annexure 2.11 Details of extension granted and payment of Price Variation (PV) due to delay in execution of work [Reference Paragraph 2.1.2.2 (B)]									
Sl. No.	Year	Contract No. & Date [CA value of more than ₹ five crore)	Original date of completion	Latest extension granted up to	Main reasons for grant of extension	No. of Extensions granted [under Clause 17 of GCC]	Period of Extensions [under Clause 17 of GCC]	Whether the work is in progress or completed	Price Variation (PV) paid (₹)
1	2	3	4	5	6	7	8	9	10
3	2016-17	CON/D-K/2331 dt:16.03.2017	04.03.2018	31.12.2022	Due to incomplete Approach road to the site, Land issue, Local bandh, Late receipt of drawing, Poor geological condition, COVID - 19 pandemic	3	58	In progress	(i) PVC-I= ₹14.50 Cr. (dt.09.07.21), (ii)PVC-II= ₹ 6.28 Cr (08.11.21)
4	2015-16	Con/D-K/2181 dt. 24.02.2016	22.05.2017	31.12.2021	Due to dispute between land owners and state govt for payment of compensation for land, Not handing over of land, Delay in payment of compensation, Increase in scope of work, Local bandh, Strike, Shortage of labour, Monsoon, COVID - 19 pandemic.	7	55	In progress	PVC-I= ₹ 3621643, dt. 27.12.2018
5	2018-19	CON/D-K/2499, dt. 03.12.2018	21.09.2019	15.05.2021	Due to early monsoon, COVID- 19 Pandemic,	3	20	In progress	PVC-I= ₹ 13153295,

Annexure 2.11 Details of extension granted and payment of Price Variation (PV) due to delay in execution of work [Reference Paragraph 2.1.2.2 (B)]									
Sl. No.	Year	Contract No. & Date [CA value of more than ₹ five crore)	Original date of completion	Latest extension granted up to	Main reasons for grant of extension	No. of Extensions granted [under Clause 17 of GCC]	Period of Extensions [under Clause 17 of GCC]	Whether the work is in progress or completed	Price Variation (PV) paid (₹)
1	2	3	4	5	6	7	8	9	10
6	2016-17	CON/DMV-Kohima/2170 Dt.17.02.2016	22.06.2017	31.12.2021	Due to delay in handing over land. Delay in payment of fisheries, Monsoon, Bandh, Local strike, Lock down due to COVID-19 pandemic, Delay in disbursement of compensation.	7	54	In progress	(i) PVC-I= ₹ 2804805, dt.24.12.2018, (ii) PVC-II= ₹ 32088335, dt.09.01.2021
7	2020-21	CON/D-K/2644 dt.25.11.2020	29.10.2021	NA	NA	NA	NA	In progress	(i) PVC-I= ₹ 85129714.77 dt.25.09.2021, (ii) PVC-II= ₹ 8551768.26
8	2015-16	CON/DMV/16	31.12.2019	NA	NA	NA	NA	Completed	NA
9	2016-17	CON/DMV-KOHIMA/2292 dt 20/01/2017	14.10.2019	30.06.2022	Due to strata encountering at site, Local issue, COVID-19 lockdown, Work of Tunnel no. 4 & 5 still not started	2	33.5	IN progress	NA
10	2017-18	CON/D-K/2376 dtd. 21.09.17	08.12.2018	24.12.2021	Due to initial delay in commencement of geological investigation work, 02 new bridges received from NFR (1 bridge-122, ROB-149A)	3	36.5	In progress	

Annexure 2.11 Details of extension granted and payment of Price Variation (PV) due to delay in execution of work [Reference Paragraph 2.1.2.2 (B)]									
Sl. No.	Year	Contract No. & Date [CA value of more than ₹ five crore)	Original date of completion	Latest extension granted up to	Main reasons for grant of extension	No. of Extensions granted [under Clause 17 of GCC]	Period of Extensions [under Clause 17 of GCC]	Whether the work is in progress or completed	Price Variation (PV) paid (₹)
1	2	3	4	5	6	7	8	9	10
11	2020-21	CON/D-K/2630 dtd. 12.10.20	24.11.2020	28.04.2022	Due to local problem, Local festival, Natural calamity Lockdown	3	17	In progress	NA
12	2020-21	CON/D-K/2632 dtd. 15.10.20	03.08.2021	31.08.2022	Due to COVID-19 lockdown. Local bandh, Monsoon, No approved drawing were made before 21.08.2020	1	13	In progress	NA
13	2020-21	CON/D-K/2636 dt.09.11.2020	20.12.2021	NA	NA	NA	NA	NIL	NA
14	2021-22	NFR-CONST- HQ- ENGG. LOA No- CE-CON-D-K-MB- 2020- 04/1016820003083 5 Dated: 13/1/2021	13.07.2022	NA	NA	NA	NA	NA	NA
15	2021-22	LOA : W/362/CON/D- K/MB/S/2019/09(R T-1)(LOA No. 00801110030995) Dt.18.01.21)	17.01.2023	NA	NA	NA	NA	NIL	NA

Annexure 2.11 Details of extension granted and payment of Price Variation (PV) due to delay in execution of work [Reference Paragraph 2.1.2.2 (B)]									
Sl. No.	Year	Contract No. & Date [CA value of more than ₹ five crore)	Original date of completion	Latest extension granted up to	Main reasons for grant of extension	No. of Extensions granted [under Clause 17 of GCC]	Period of Extensions [under Clause 17 of GCC]	Whether the work is in progress or completed	Price Variation (PV) paid (₹)
1	2	3	4	5	6	7	8	9	10
16	2020-21	CON/D-K/2704 dt.17.12.2021	27.06.2022	NA	NA	NA	NA	NIL	NA
17	2016-17	CON/DMV-Kohima/2219 Dt.11.05.2016	17.03.2018	31.08.2021	Due to land compensation issue Early monsoon Panchayat election Failure of state govt for road diversion, Non-availability of approach road during monsoon, Due to change of formation level. Land acquisition issues, COVID-19 Pandemic	7	41	In progress	NA
18	2018-19	CON/D-K/2466 Dt. 21.08.2018	27.11.2018	30.09.2021	Due to delay in handing over land, Delay in disbursement of compensation, Delay in payment of fisheries, Monsoon, Bandh, Local strike, Lock down due to COVID- 19 Pandemic	5	34	In progress	NA

Annexure 2.11 Details of extension granted and payment of Price Variation (PV) due to delay in execution of work [Reference Paragraph 2.1.2.2 (B)]									
Sl. No.	Year	Contract No. & Date [CA value of more than ₹ five crore)	Original date of completion	Latest extension granted up to	Main reasons for grant of extension	No. of Extensions granted [under Clause 17 of GCC]	Period of Extensions [under Clause 17 of GCC]	Whether the work is in progress or completed	Price Variation (PV) paid (₹)
1	2	3	4	5	6	7	8	9	10
19	2018-19	CON/D-K/2500, dt. 04.12.2018	23.09.2019	31.12.2021	Due to non-handing over of land, Delay in disbursement of compensation. Land dispute, Zirat Compensation issue, Scope of work increased due to variation, Labour disturbance due to land owner demanding compensation, Local Bandh (due to Church problem). Shortage of labour, Extended monsoon period, Lockdown due to COVID-19 pandemic,	4	27	In progress	NA
20	2018-19	CON/D-K/2519, dt. 12.02.2019	20.12.2019	31.12.2021	Due to early monsoon, Local strike and labour crisis, Lockdown due to COVID-19 pandemic	3	24	In progress	NA
21	2018-19	CON/D-K/2527 Dt. 25.02.2019	13.09.2019	31.12.2021	Due to rainy season, Land issue, Local disturbance, Lok sabha election, COVID-19 pandemic	5	27	In progress	NA

Annexure 2.11									
Details of extension granted and payment of Price Variation (PV) due to delay in execution of work [Reference Paragraph 2.1.2.2 (B)]									
Sl. No.	Year	Contract No. & Date [CA value of more than ₹ five crore)	Original date of completion	Latest extension granted up to	Main reasons for grant of extension	No. of Extensions granted [under Clause 17 of GCC]	Period of Extensions [under Clause 17 of GCC]	Whether the work is in progress or completed	Price Variation (PV) paid (₹)
1	2	3	4	5	6	7	8	9	10
22	2020-21	CON/D-K/2629 Dt. 07.10.2020	14.01.2021	31.12.2021	Due to rainy season, Land issue, Local disturbance, Lok sabha election, COVID-19 pandemic	3	11	In progress	NA
23	2020-21	CON/D-K/2638 dt. 11.11.2020	14.12.2020	31.12.2021	Due to labour problem, Early monsoon Increase in scope of work Land compensation issue Local bandh and COVID-19 pandemic	3	12.5	In progress	NA
24	2020-21	CON/D-K/DMV-2/03 DT. 31.12.2020	14.09.2021	31.12.2021	Due to early monsoon Bandh Local strike Delay in disbursement of compensation. Lock down due to COVID-19 pandemic.	1	3.5	In progress	NA

Annexure 2.11 Details of extension granted and payment of Price Variation (PV) due to delay in execution of work [Reference Paragraph 2.1.2.2 (B)]									
Sl. No.	Year	Contract No. & Date [CA value of more than ₹ five crore)	Original date of completion	Latest extension granted up to	Main reasons for grant of extension	No. of Extensions granted [under Clause 17 of GCC]	Period of Extensions [under Clause 17 of GCC]	Whether the work is in progress or completed	Price Variation (PV) paid (₹)
1	2	3	4	5	6	7	8	9	10
25	2018-19	CON/DMV-Kohimal/2471 Dt. 07.09.2018	24.11.2019	31.05.2021	Due to not handing over of land, Delay in disbursement of compensation, Increase in scope of work due to variation, Land dispute, Early monsoon period, Labour disturbance due to land owner demanding compensation, Local bandh (Due Church Problem) Shortage of labour, Zirat Compensation issue, Lockdown due to COVID-19 pandemic.	3	18	In progress	NA
26	2018-19	CON/D-K/2480 dt.26.09.2018	29.05.2022	NA	NA	NA	NA	In progress	NA
27	2018-19	CON/D-K/2525 Dt. 25.02.2019	13.11.2020	12.05.2021	Due to non-availability of drawing. COVID-19 pandemic.	1	5	In progress	
28	2021-22	CON/D-K/2681 dt.26.09.2021	11.12.2022	NA	NA	NA	NA	In progress	NA
29	2021-22	CON/D-K/2678 dt.13.07.2021	11.12.2022	NA	NA	NA	NA	In progress	NA

Annexure 2.11									
Details of extension granted and payment of Price Variation (PV) due to delay in execution of work [Reference Paragraph 2.1.2.2 (B)]									
Sl. No.	Year	Contract No. & Date [CA value of more than ₹ five crore)	Original date of completion	Latest extension granted up to	Main reasons for grant of extension	No. of Extensions granted [under Clause 17 of GCC]	Period of Extensions [under Clause 17 of GCC]	Whether the work is in progress or completed	Price Variation (PV) paid (₹)
1	2	3	4	5	6	7	8	9	10
30	2021-22	NFR-CONST- HQ- ENGG. LOA No- CE-CON-D-K-MB-2020-06/00954710032252 Dated: 17/2/2021	17.08.2022	NA	NA	NA	NA	NIL	NA
31	2021-22	CON/D-K/2698, dt.29.11.2021	24.09.2022	NA	NA	NA	NA	NIL	NA
32	2019-20	NFR/CON/HQ/Electrical/EL/CON/05/2018-19/DMV-KOH/10164190006545 dt.25.11.2019	15.03.2020	31.12.2021	Due to non-completion of civil engineering works. COVID-19 pandemic	3	16	In progress	NA
33	2019-20	DyCSTE/CE/AGTL /2019/0701, dt.30.09.2019	30.12.2019	31.03.2022	Due to non-completion of Engineering work	8	27	In progress	NA
Total									423812327
Say ₹ 42.38 crore									

Annexure 2.12						
Avoidable expenditure on procurement of ballast due to poor Contract Management						
[Reference Paragraph 2.1.2.3 (i)]						
S. No.	R.R. No.	From- To	Amount of freight (₹)	Ballast in Cum	Average freight rate per cum (₹)	Remarks
1	2	3	4	5	6	7
I. Calculation of average freight rate of Pakur Ballast						
1	512002055 dt.10.10.2020	Bakudi to DMV	4875261	2000.78	2436.68	
2	512002078 dt.09.11.2020	Bakudi to DMV	5534633	2132.53	2545.33	
3	512002685 dt.20.12.2020	Pakur to Dimapur	5169522	2132.23	2424.46	
4	512002710 dt.17.03.2021	Pakur to Dimapur	5069343	2080.12	2437.04	
5	512000026 dt.12.03.2021	Bakudi Malitok siding to DMV	5030029	2024.85	2484.14	
6	512002707 dt.08.03.2021	Pakur to Dimapur	5169986	2118.43	2440.48	
7	512000022 dt.05.03.2021	Bakudi Malitok siding to DMV	4792933	1962.51	2442.24	

Annexure 2.12						
Avoidable expenditure on procurement of ballast due to poor Contract Management [Reference Paragraph 2.1.2.3 (i)]						
S. No.	R.R. No.	From- To	Amount of freight (₹)	Ballast in Cum	Average freight rate per cum (₹)	Remarks
1	2	3	4	5	6	7
I. Calculation of average freight rate of Pakur Ballast						
8	512000019 dt.25.02.2021	Bakudi Malitok siding to DMV	4766338	1959.16	2432.84	
9	512002670 dt.22.02.2021	Pakur Upper quarry old line to DMV	4980571	2041.07	2440.2	
10	512000015 dt.19.02.2021	Bakudi Malitok siding to DMV	5687057	2145.14	2651.13	
11	512000069 dt.28.06.2021	Bakudi Malitok siding to DMV	4826571	2002.26	2410.56	
12	512000088 dt.22.06.2021	Bakudi Jnwn siding to DMV	4904476	1982.69	2473.64	
13	512000066 dt.19.06.2021	BKMT to DMV	5041752	2087.26	2415.50	
14	512002743 dt.18.06.2021	PKRY to DMV	5167522	2117.39	2440.50	
15	512000064 dt.15.06.2021	BKMT to DMV	4917230	2027.16	2425.67	

Annexure 2.12						
Avoidable expenditure on procurement of ballast due to poor Contract Management [Reference Paragraph 2.1.2.3 (i)]						
S. No.	R.R. No.	From- To	Amount of freight (₹)	Ballast in Cum	Average freight rate per cum (₹)	Remarks
1	2	3	4	5	6	7
I. Calculation of average freight rate of Pakur Ballast						
16	512000063 dt.13.06.2021	BKMT to DMV	5112284	2085.5	2451.34	
17	512000059 dt.01.06.2021	BKMT to DMV	4726893	1960.95	2410.50	
18	512002735 dt.23.05.2021	PKRY to DMV	4778351	1959.16	2439.00	
19	512000088 dt.25.08.2021	BKMT to DMV	5117957	2093.87	2444.25	
20	512000072 dt.08.07.2021	BKMT to DMV	5114375	2114.31	2418.93	
21	512002748 dt.07.07.2021	PKRY to DMV	5065948	2082.7	2432.40	
22	512000070 dt.03.07.2021	BKMT to DMV	4869418	1999.77	2435.00	
23	512000032 dt.09.07.2021	Tajhni Pubhi siding to DMV	5076522	2094.69	2423.50	

Annexure 2.12						
Avoidable expenditure on procurement of ballast due to poor Contract Management [Reference Paragraph 2.1.2.3 (i)]						
S. No.	R.R. No.	From- To	Amount of freight (₹)	Ballast in Cum	Average freight rate per cum (₹)	Remarks
1	2	3	4	5	6	7
I. Calculation of average freight rate of Pakur Ballast						
24	512002746 dt.30.06.2021	PKRY to DMV	5069186	2089.36	2426.20	
			120864158	49293.89	2451.91	
II. Calculation of avoidable expenditure						
Average freight rate per cum of Pakur Ballast (₹)	CA rate for Pakur Ballast per cum (77.10 per cent above estimated rate of ₹ 711.86)	Total rate of Pakur Ballast per cum (Freight + manufacturing and supply) (₹)	Rate of local ballast CA No. CON/D-K/2466 per cum (7 per cent below estimated rate of ₹ 2315)	Rate difference per cum between Pakur ballast and Local Ballast (₹)	Pakur Ballast Procured in Cum	Avoidable expenditure (₹)
1	2	3 (Col. 1 + Col. 2)	4	5 (Col. 3 - Col. 4)	6	7 (Col. 5 * Col. 6)
2451.91	1260.70	3712.61	2152.95	1559.66	49275	76852246.50
						Say ₹ 7.68 crore

Annexure 2.13 IRCON PB Tollway Project (IPBTL)- Working of NPV, IRR, Equity IRR [Reference Paragraph 2.2.3.1 (ii)]																											
Particulars	31/03/ 2016	31/03/ 2017	31/03/ 2018	31/03/ 2019	31/03/ 2020	31/03/ 2021	31/03/ 2022	31/03/ 2023	31/03/ 2024	31/03/ 2025	31/03/ 2026	31/03/ 2027	31/03/ 2028	31/03/ 2029	31/03/ 2030	31/03/ 2031	31/03/ 2032	31/03/ 2033	31/03/ 2034	31/03/ 2035	31/03/ 2036	31/03/ 2037	31/03/ 2038	31/03/ 2039	31/03/ 2040	31/03/ 2041	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
\Equity	-174.25	0	0																								
Outflow	-244.06	-476.93	-189.01																								
Equity Support	31.23	213.37	84.56																								
PAT	0	0	15.86	24.34	15.24	(5.07)	4.57	52.10	22.00	30.18	38.13	47.76	71.49	13.15	102.18	119.31	135.09	152.71	172.42	96.24	219.48	246.20	277.56	311.39	348.51	258.38	
Interest	0	0	22.87	44.31	40.5	36.69	32.88	29.06	25.25	21.44	17.63	13.82	10.01	6.19	2.38	0	0	0	0	0	0	0	0	0	0	0	0
Dep	0	0	12.36	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72
Loan Repayment	0	0	0	33.88	33.88	33.88	33.88	33.88	33.88	33.88	33.88	33.88	33.88	33.88	33.88												
IDC	11.07	21.63	8.57																								
Project IRR	-201.76	-241.93	76.51	44.69	49.98	56.34	62.17	1.68	71.97	76.34	80.48	86.30	106.22	44.06	129.28	144.03	159.81	177.43	197.14	120.96	244.20	270.92	302.28	336.11	373.23	283.10	
Equity IRR	-174.25	0	3.50	33.50	24.40	14.23	4.59	61.26	12.84	21.02	28.97	38.60	62.33	3.99	93.02	144.03	159.81	177.43	197.14	120.96	244.20	270.92	302.28	336.11	373.23	283.10	
Project IRR %	13.38%																										
Equity IRR %	13.75%																										
NPV	70.97																										

		Annexure 2.14 IRCON PB Tollway- Working of project IRR and Equity IRR assuming expenditure on toll collection and equity support [Reference Paragraph 2.2.3.1 (ii)]																									
Particulars	31/03/2016	31/03/2017	31/03/2018	31/03/2019	31/03/2020	31/03/2021	31/03/2022	31/03/2023	31/03/2024	31/03/2025	31/03/2026	31/03/2027	31/03/2028	31/03/2029	31/03/2030	31/03/2031	31/03/2032	31/03/2033	31/03/2034	31/03/2035	31/03/2036	31/03/2037	31/03/2038	31/03/2039	31/03/2040	31/03/2041	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
Equity	-174.25	0	0																								
Outflow	-244.06	-476.93	-189.01																								
Equity Support	31.23	213.37	82.4																								
PAT	0	0	(15.86)	34.88	26.76	17.18	8.13	65.44	7.99	15.47	22.69	31.54	54.46	4.73	83.40	99.60	114.39	130.98	149.60	72.28	194.33	219.79	249.82	282.27	317.93	226.27	
Interest	0	0	22.87	44.31	40.5	36.69	32.88	29.06	25.25	21.44	17.63	13.82	10.01	6.19	2.38	0	0	0	0	0	0	0	0	0	0	0	0
Dep	0	0	12.36	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72
Loan Repaym ent	0	0	0	33.88	33.88	33.88	33.88	33.88	33.88	33.88	33.88	33.88	33.88	33.88	33.88												
IDC	11.07	21.63	8.57																								
Project IRR	-201.76	-241.93	78.67	34.15	38.46	44.23	49.47	11.66	57.96	61.63	65.04	70.08	89.19	26.18	110.50	124.32	139.11	155.70	174.32	97.00	219.05	244.51	274.54	306.99	342.65	250.99	
Equity IRR	-174.25	0	3.50	44.04	35.92	26.34	17.29	74.60	1.17	6.31	13.53	22.38	45.30	13.89	74.24	124.32	139.11	155.70	174.32	97.00	219.05	244.51	274.54	306.99	342.65	250.99	
Project IRR %	11.67%																										
Equity IRR %	11.47%																										
NPV - Project	-16.60																										

Annexure 2.15 IRCON Shivpuri Guna Tollway Limited -Working of NPV, IRR, Equity IRR by the Company [Reference Paragraph 2.2.3.1 (iii)]																					
Particulars	31/03/ 2016	31/03/ 2017	31/03/ 2018	31/03/ 2019	31/03/ 2020	31/03/ 2021	31/03/ 2022	31/03/ 2023	31/03/ 2024	31/03/ 2025	31/03/ 2026	31/03/ 2027	31/03/ 2028	31/03/ 2029	31/03/ 2030	31/03/ 2031	31/03/ 2032	31/03/ 2033	31/03/ 2034	31/03/ 2035	31/03/ 2036
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Equity	-86.83	-173.65	0				-38.03														
Outflow	-86.83	-376.24	-405.19				-126.78														
Equity Support	0	0	0																		
PAT	0	0	-	(49.15)	(39.94)	(27.25)	(12.85)	8.26	(69.79)	52.98	87.57	108.26	115.58	164.24	94.15	243.17	281.17	324.83	354.70	429.40	42.74
Interest	0	0	0	63.82	63.75	62.71	60.34	65.78	58.73	59.88	49.43	38.98	28.53	18.08	7.64	0	0	0	0	0	0
Dep	0	0	0	49.8	49.8	49.8	49.8	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	30.15
Loan Repayment	0	0	0	0.65	9.86	22.55	36.95	67.16	-10.89	99.5	99.5	99.5	99.5	99.5	72.72						
IDC	0	0	0																		
Project IRR	-86.83	-376.24	(405.19)	64.47	73.61	85.26	(29.49)	132.94	47.84	171.76	195.90	206.14	203.01	241.22	160.69	302.07	340.07	383.73	413.60	488.30	72.89
Equity IRR	-86.83	-173.65	0	(0.00)	-	-	(38.03)	-	-	12.38	46.97	67.66	74.98	123.64	80.33	302.07	340.07	383.73	413.60	488.30	72.89
Project IRR %	12.96%																				
Equity IRR %	15.07%																				
	314.23																				

Annexure 2.16																						
Working of NPV, Project IRR, Equity IRR for ISGPTL after audit observations																						
[Reference Paragraph 2.2.3.1 (iii)]																						
Particulars	31/03/2016	31/03/2017	31/03/2018	31/03/2019	31/03/2020	31/03/2021	31/03/2022	31/03/2023	31/03/2024	31/03/2025	31/03/2026	31/03/2027	31/03/2028	31/03/2029	31/03/2030	31/03/2031	31/03/2032	31/03/2033	31/03/2034	31/03/2035	31/03/2036	
1																						
Equity	-86.83	-173.65	0	0	0	0	-38.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outflow	-86.83	-376.24	-405.19				-126.78															
Equity Support	0	0	0																			
PAT	0	0	0	49.15	39.94	(27.25)	(12.85)	8.26	(69.79)	52.98	87.57	108.26	115.58	164.24	94.15	243.17	281.17	324.83	354.70	429.40	42.74	
Interest	0	0	0	63.82	63.75	62.71	60.34	65.78	58.73	59.88	49.43	38.98	28.53	18.08	7.64	0	0	0	0	0	0	0
Dep	0	0	0	49.8	49.8	49.8	49.8	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	30.15
Loan Repayment	0	0	0	50.65	50.65	50.65	50.65	61.74	61.74	61.74	61.74	61.74	61.74	61.74	61.74	61.74	61.74	61.74	61.74	61.74	61.74	
IDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project IRR	-86.83	-376.24	405.19	61.63	70.33	80.08	-36.49	122.14	34.15	154.55	173.25	178.82	168.79	199.96	110.24	239.56	266.00	295.13	307.01	361.27	7.34	
Equity IRR	-86.83	-173.65	0	52.83968	-44.07112	-33.27893	-58.73321	5.384515	86.31946	32.93095	62.07629	78.1018	78.51872	120.1437	40.85934	239.5565	265.9952	295.1317	307.0111	361.269	7.338293	
Project IRR %	10.85%																					
Equity IRR %	10.28%																					
NPV	-65.91																					
at discount rate of 12 %																						

Annexure 3.1**Action taken by Ministry of Railways on audit's observations under Para 2.8 of the Report No. 31 of 2014 - Technological up-gradation in wagons (Reference Paragraph 3.1.2)**

- 1. Para 2.8.1: Design and Development of BOXNR Wagons-** Up-gradation and rehabilitation of BOXN wagons into BOXNR was not for universal application. The objective with which this up-gradation was sanctioned to address issues of corrosion have been achieved. There has been no delay in BOXN rehabilitation work on account of the RDSO study report.
- 2. Para 2.8.2: Design and Development of 28 tonne Axle Wagons-** Railway Board have accorded sanction for provisional running of 28 Tonne Axle special wagon.
- 3. Para 2.8.3: Up-gradation of wagon into 25 tonne axle load-** Indian Railways have been constantly upgrading the axle load. Introduction of 25T axle load wagons has to be commensurate with the availability of pathway for running of these higher axle load wagons. Existing wagons have been upgraded to 25T axle loads (BOXNEL, BOYEL and BOBSN) and in use of the upgraded sections for 25T axle load operation.
- 4. Para 2.8.4: Design of BCNHL Wagons-** Since the BCNHL wagons were designed with width higher than the BCNA wagons, new design of swing and slide hinge type doors was made. Since damages were reported, RDSO designed the retrofittable sliding door. Retrofitment of sliding doors is being carried out in the wagons in which the doors are already damaged and require replacement. New wagons are being provided with sliding doors for their full utilization and to avoid cases of hinged door opening on run and hitting fixed structures.

Annexure 3.2 Details of sample selection by Zones (Reference Paragraph 3.1.7)							
Sl. No.	Zone	Divisions	Loading points (Sidings/Goods shed)	Unloading Points (Sidings/Goods shed)	Terminal Yard including sick line	Wagon Depot	POH Workshops
1	2	3	4	5	6	7	8
1	CR	Mumbai	1) JSW Dolvi siding Pen 2) TVSG Siding Pen	1) Bulk Cement siding-Kalamboli (BCCK) 2) Kalamboli Goods shed	1) Kalyan Yard 2) Jasai Yard	Ajni Wagon depot	Kurduwadi workshop
		Nagpur	1) Ghugus goods 2) Umred siding	1) New Thermal Power Siding, Chandrapur (NTPG) 2) Madhya Pradesh Power Generation Co. Ltd. (MPBG)			
2	ER	Asansol	1) Pure Sitalpur Siding (SCU) 2) Purushottampur Siding (POCP)	1) Durgapur Steel Exchange Yard (DSEY) 2) Mejia Thermal Power Station (MTPS)	1) Andal 2) Malda Town	Andal	Jamalpur Workshop
		Malda	1) Bakudi (BKLE) 2) Barharwa (BHW)	1) Fatakka Super Thermal Power (FSTP) 2) NTKS, Kahalgaon			

Annexure 3.2 Details of sample selection by Zones (Reference Paragraph 3.1.7)							
Sl. No.	Zone	Divisions	Loading points (Sidings/Goods shed)	Unloading Points (Sidings/Goods shed)	Terminal Yard including sick line	Wagon Depot	POH Workshops
1	2	3	4	5	6	7	8
3.	ECR	Sonpur Dhanbad	1) IOC Barauni 2) Semapur 1) Ray (Coal) 2)Khalari (Coal)	1) NarainpurAnant 2) Karpoorigram 1) Daltonganj 2) Barkakana	1) Narainpur Anant 2) Patratu	Barwadh	Samastipur Workshop
4.	ECoR	Khurda Raod (KUR) Waltair (WAT)	1) GCB siding Paradeep (CBSP) 2) JNC Sidings, Talcher (SBCT) 1) Gangavaram Port (MGPV) 2) Visakhapatnam Port (VZP)	1) PPAP siding Paradeep (PPAP) 2) Tata BSL Siding, Meramandali (MBMB) 1) Visakhapatnam Steel plant (VSPS) 2) Visakhapatnam Port (VZP)	1) Paradeep Terminal 2) Visakhapatnam Steel plant (VSPS)	Central Sick Line(CSL) /WAT	No wagon workshop
5.	NR	Delhi Ambala	1) ICB (Oil Refinery Siding, Bhauli) 2) BPAG (Bharat Petroleum Ltd., Asoti) 1) GACL (Ambuja Cement Siding, Rupnagar dealing with Cement & Clinker) 2) KART (Kartarpur Sahib Station- dealing with Cement)	1) GZB (Ghaziabad Station) 2) MTSS (M/S Talwandi Sabo Power Ltd. SaddaSinghwala) 1) NPSB (M/S Nabha Power Ltd. Siding, SaraiBanjara/SBJ-dealing with coal) 2) PMRG (Rajiv Gandhi Thermal Power Plant, Khedar Siding Barwala-dealing with coal)	1) SSB (Shakurbasti) 2) UMB (Ambala)	WCC/TKD, (Tuglakabad)	Jagadhari Workshop (JUDW)

Annexure 3.2 Details of sample selection by Zones (Reference Paragraph 3.1.7)							
Sl. No.	Zone	Divisions	Loading points (Sidings/Goods shed)	Unloading Points (Sidings/Goods shed)	Terminal Yard including sick line	Wagon Depot	POH Workshops
1	2	3	4	5	6	7	8
6.	NCR	Prayagraj (PRYJ)	1) M/s Kanpur Fertilizers and Cement Limited Panki(MKFP) 2) M/s Jaiprakash Associates Chunar (MJAC)	1) Prayagraj Power Generation Co. Ltd.(PPGS) 2) NTPC Siding Dadri (NTCD)	1) Kanpur Goods Marshalling Yard (GMC) 2) Terminal Yard including Sick Line Jhansi	Wagon Depot Jhansi	Wagon Workshop Jhansi
		Jhansi (JHS)	1) Diamond Cement Siding Parichha (DCPG) 2) Hindustan Petroleum Gogumau Rasoolpur(HPTR)	1) Uttar Pradesh Power Generation Parichha (PTPP) 2) Lalitpur Power Generation Company Ltd (LPGU)			
7	NER	Lucknow (LJN) Izatnagar	1) Subhagpur (SUBR) 2) Sitapur City Thomsonganj (TSG) 1) Baheri (BHI) 2) Rudrapur City (RUPC)	1) Subhagpur (SUBR) 2) Nakaha Jungle (JEA) 1) Lalkuan (LKU) 2) Rudrapur City (RUPC)	1) Rudrapur City (RUPC) 2) Subhagpur (SUBR)	Gonda Depot	Izatnagar Workshop

Annexure 3.2 Details of sample selection by Zones (Reference Paragraph 3.1.7)							
Sl. No.	Zone	Divisions	Loading points (Sidings/Goods shed)	Unloading Points (Sidings/Goods shed)	Terminal Yard including sick line	Wagon Depot	POH Workshops
1	2	3	4	5	6	7	8
8.	NEFR	Katihar (KIR)	1) Numaligarh Refinery Oil Siding (NRSR) (Siding)	1) KIR Division- New Jalpaiguri (NJP) (Goods Shed)	1) New Jalpaiguri (NJP)	New Guwahati (NGC)	New Bongaigaon (NBQ) Workshop
		Lumding (LMG)	1) LMG Division- Ditochera (DTC) (Goods Shed)	1) LMG Division- New Guwahati (NGC) (Goods Shed)	2) New Guwahati (NGC)		
9.	NWR	Ajmer	1) Lakshmi Cement Siding (LCTS)	1) Shree Mega Power siding served by RasBabra (SMPB)	NIL	Phulera	Diesel Loco & Wagon Workshop, Ajmer
			2) Binapani Cement Siding (BGKG)	2) Shree Cement siding Bangargram (BNGS)			
		Jodhpur	1) Jaisalmer Goods shed	1) Bhagatikothi Goods shed			
			2) Nava City Goods shed	2) Jalore Goods shed			

Annexure 3.2 Details of sample selection by Zones (Reference Paragraph 3.1.7)							
Sl. No.	Zone	Divisions	Loading points (Sidings/Goods shed)	Unloading Points (Sidings/Goods shed)	Terminal Yard including sick line	Wagon Depot	POH Workshops
10	SR	Chennai Division (MAS)	4 1) Thermal Power Plant Siding Attipattu (AIPS) 2) Walajabad (WJ)	5 1) Korukkupet Goods (KOKG) 2) Ultra tech Cement Ltd Siding, Arakkonam (MLLT)	6 1) Melpakkam Yard (MLPM)	7 Tondiarpet Marshalling Yard (TNPM)	8 1) Perambur (PER) 2) Central Workshop, Golden Rock (GOC) (As manufacturing is carried out at GOC, this workshop has also been selected. Further, no repairs/maintenance of wagons is carried out at GOC.)
		Tiruchchirappalli Division (TPJ)	1) Karaikal Port Pvt Ltd Siding (KIKP) 2) TAQA Neyveli Power Company Pvt Ltd Siding S/By Vadalur (VLX)	1) TAQA Neyveli Power Company Pvt Ltd Siding Uttangalmangalam (UME) 2) IL&FS Tamilnadu Power Company Ltd Siding, Puduchatram (PUCS)	2) Tiruchchirappalli Goods Yard (TPGY)		

Annexure 3.2 Details of sample selection by Zones (Reference Paragraph 3.1.7)							
Sl. No.	Zone	Divisions	Loading points (Sidings/Goods shed)	Unloading Points (Sidings/Goods shed)	Terminal Yard including sick line	Wagon Depot	POH Workshops
1	2	3	4	5	6	7	8
11	SCR	Secunderabad (SC)	1) Rudrampur Incline No.5 colliery (RUSG) 2) Godavari Khani no. 6 colliery (GXSG)	1) Kothagudem Thermal Power Station siding for APGENCO(KTPG) 2) National Thermal Power Corporation Limited (NTPC)	1) New Goods Complex Sanatnagar (SNAG) 2) Kakinada port (COA)	Vijayawada	Guntupalli (WWS/RYPs)
12	SER	Vijayawada (BZA)	1) M/s Adani Krishnapatnam Port Ltd. Siding, Krishnapatnam (Old code-PKPK, new code-AKPK) 2) Kakinada Sea ports Ltd (KSLK)	1) M/s Adani Krishnapatnam Port Ltd. Siding, Krishnapatnam (Old code-PKPK, new code-AKPK) 2) Thermal Power Station siding for APGENCO(KI)	1) Tatanagar 2) Nimpura	Nimpura Wagon Depot	Kharagpur Workshop
		Chakra dharapur	1) Pvt. Siding- Tisco Works Site Siding (TWS) 2) Goods Shed- Tatanagar Goods Shed (TATA).	1) Pvt. Siding- Tisco Works Site Siding (TWS) 2) Goods Shed- Tatanagar Goods Shed (TATA).			
		Kharagpur	1) Pvt. Siding- Ambuja Cement Eastern Ltd Siding, Abada (ACSY) 2) Goods Shed- Sankrail Goods Terminal Yard (SGTY), Sankrail.	1) Pvt. Siding- Ambuja Cement Eastern Ltd Siding, Abada (ACSY) 2) Goods Shed- Sankrail Goods Terminal Yard (SGTY), Sankrail.			

Annexure 3.2 Details of sample selection by Zones (Reference Paragraph 3.1.7)							
Sl. No.	Zone	Divisions	Loading points (Sidings/Goods shed)	Unloading Points (Sidings/Goods shed)	Terminal Yard including sick line	Wagon Depot	POH Workshops
1	2	3	4	5	6	7	8
13	SECR	Bilaspur Raipur	1) New Kushmunda Colliery 1) M/s Ultratech Cement, MGCH	1) Jindal Steel & Power, Kirodimal Nagar (KDTR), 1) Bhilai Steel Plant, Construction Area Siding, Bhilai	1) BCN Yard, Bilaspur Bhilai Exchange Yard	ROH, Depot, PP Yard, Bhilai	Wagon Repair Shop, Raipur
14	SWR	Hubballi (UBL) Bengaluru (SBC)	1) Ranjithpura (RNJP) 2) Swamihalli (SMLI) 1) Hosur (HSRA) 2) Setthalli (SET)	1) Ballari Thermal Power Plant siding served by Kudatini (BTPK) 2) Kudgi Thermal Power Plant (KSNK) 1) Devangonithi (DKN) 2) Satellite Goods Terminal Whitefield (SGWF)	1) Navalur Yard (NVU Yard) 2) Satellite Goods Terminal Yard at Whitefield (SGT Yard)	Hosapete (HPT) of Hubballi Division	No Wagon Workshop.
15	WR	Ahmedabad Ratlam	1) Mundra Cargo Complex (MDCC) 2) Kandla Port dock Railway Terminal (KPRK) 1) Aditya Cement Siding (ACS) 2) Vikram Cement Siding (VCSN)	1) Mundra Cargo Complex (MDCC) 2) Gujarat Electricity Board at Pethapur, Gandhinagar (GETS) 1) Hindustan Zinc Limited (HZL) 2) Grasim Industries Ltd. Siding, Nagda (GISN)	1) Gandhidham (GIM) 2) Shambhupura (SMP) Terminal Yard	Gandhidham (GIM)	Dahod (DHD)

Annexure 3.2 Details of sample selection by Zones (Reference Paragraph 3.1.7)							
Sl. No.	Zone	Divisions	Loading points (Sidings/Goods shed)	Unloading Points (Sidings/Goods shed)	Terminal Yard including sick line	Wagon Depot	POH Workshops
1	2	3	4	5	6	7	8
16	WCR	JBP KOTA	1) UCLM/MYR 2) RCPB/BUU 1) CFCS/BON 2) LKES/ LKE	1) PLBG/BHTN 2) LPBG/BHTN 1) GTPS/SKT 2) KOTA (Goods)	1. NKJ Sick Yard 2. KOTA Sick Yard	NKJ for BOX 'N'	Wagon Work Shop KOTA

Annexure 3.3 Wagon production by Railway Workshops, PSUs and Private sectors during 2017-18 to 2020-21 (Reference Paragraph 3.1.8.4)							
Sl. No.	Production Plan	Industry		Railway Workshop	Total	Reasons for shortfall	
		Public Sector	Private Sector				
1	2	3	4	5	6	7	8
I	Production plan for 2017-18	-	-	5920	1200	7120	Due to non-availability of wheels from RWVF, Bangalore, Steel from various Steel plant and input materials.
(a)	Target up to March 2018	-	-	5916	1200	7116	
(b)	Cumulative production up to March 2018	1349	4290	5639	651	6290	
(c)	Cumulative excess/ shortfall up to March 2018	-	-	- 277	-549	-826	
II	Production Plan for 2018-19	-	-	9800	1200	11000	
(a)	Target up to March 2019	-	-	9800	1200	11000	
(b)	Cumulative Production up to March 2019	874	8140	9014	521	9535	
(c)	Cumulative excess/shortfall up to March 2019	-	-	- 786	-679	-1465	
III	Production Plan for 2019-20 (up to February 2020)	-	-	10800	1200	12000	
(a)	Target up to February 2020	-	-	9900	1100	11000	
(b)	Cumulative production up to February 2020	911	8759	9670	934	10604	
(c)	Cumulative excess/ shortfall up to February 2020	-	-	-230	-166	-396	
IV	Production Plan for 2020-21	-	-	9000	1000	10000	
(a)	Target up to March 2021	-	-	9000	1000	10000	
(b)	Cumulative production up to March 2021	962	7944	8906	1156	10062	
(c)	Cumulative excess/ shortfall up to March 2021	-	-	-94	156	62	

Note: Due to nationwide lockdown no Monthly Production Statement of March 2020 was prepared and uploaded in the website by RB.

Annexure 3.4			
Details of wagon manufacturers			
(Reference Paragraph 3.1.8.6)			
Sl. No.	Details		Sl. No.
	PSUs under Ministry of Railways		
1	2	3	4
1	M/s Burn Standard Co. Ltd. at Burnpur, West Bengal	1	M/s. Texmaco Limited, Kolkata
2	M/s Burn Standard Co. Ltd. At Howrah, West Bengal	2	M/s. Hindustan Engineering and Industries Ltd. Kolkata
3	M/s Braithwaite & Co. Ltd., Kolkata	3	M/s. Modern Industries, Ghaziabad, UP
4	M/s. Bharat Wagon & Engineering Co. Ltd., Mokamah, Bihar	4	M/s. Titagarh Wagon Ltd., Kolkata
		5	M/s. Besco Ltd., Kolkata
		6	M/s. Cimmco Ltd.
		7	M/s. Jupiter Wagons Ltd.
		8	M/s. Jindal Rail Infrastructure Ltd.
		9	M/s. Sail Rites Bengal Wagon Industries Pvt. Ltd.
		10	M/s CEBBCO Ltd.
		11	M/s. Amtek Rail Car Industries Pvt. Ltd.
		12	M/s. Oriental Foundry Pvt. Ltd.
		13	Besco Foundry Division

Sl. No.	Name of Firms	Annexure 3.5 Firm-wise position of supply of wagons [Reference Paragraph 3.1.8.6 (a)]															
		2017-18				2018-19				2019-20				2020-21			
		O/s order as on 1 April 2017	Fresh order	Total order	Production	O/s order as on 1 April 2018	Fresh order	Total order	Production	O/s order as on 1 April 2019	Fresh order	Total order	Production	O/s order as on 1 April 2020	Fresh order	Total order	Production
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1.	M/s. Besco Ltd.	1275	2010	3285	579	2706	0	2706	412	2294	395	750**	163	587	0	587	175
2.	M/s. Cimmco	472	1191	1663	472	1191	0	1191	603	588	357@	945	525	420	1652	2072	72
3.	M/s. HEI	707	1242	1949	415	1534	0	0	837	697	373@	1070	694	376	600	976	504
4.	M/s. Titagarh Wagons	218	1147	1365	197	1168	5058	6226	1395	4831	0	4831	2449	2382	1562 @	3944	2453
5.	M/s. Texmaco	399	1764	2163	399	1764	1621	3385	1047	2338	529@	2867	1460	1407	457 @	1864	863
6.	Modern Industries	688	323	1011	249	762	2643	3405	627	2278	0	2778	1069	1709	0	1709	1055
7.	M/s. Amtek	681	0	581*	80	501	100	601	125	476	0	476	60	416	0	416	10
8.	M/s Jupiter													1232	2228@	3460	1637
9.	Sail Rites Bengal Wagon Industries Ltd.													438	1200	1638	438

* 100 wagons were cancelled **1939 wagons were cancelled @ including by 30% option clause

Annexure 3.6 Details of induction of rakes through private investments (Reference Paragraph 3.1.8.7)													
Year	Zone	Number of rakes for which proposal approved by RB						Number of rakes inducted in the IR system					
		LWIS	SFTO	AFTO	WLS	GPWIS	LWIS	SFTO	AFTO	WLS	GPWIS		
1	2	3	4	5	6	7	8	9	10	11	12		
2017-18	CR	8	0	0	0	0	0	0	0	0	0		
2017-18	ER	0	0	0	0	0	0	0	0	0	0		
2017-18	ECR	0	0	0	0	0	0	0	0	0	0		
2017-18	ECoR	2	4	0	0	0	3	1	0	0	0		
2017-18	NR	0	0	3	2	0	0	0	3	2	0		
2017-18	NCR	0	0	0	0	0	0	0	0	0	0		
2017-18	NER	0	0	0	0	0	0	0	0	0	0		
2017-18	NEFR	0	0	0	0	0	0	0	0	0	0		
2017-18	NWR	0	0	0	0	0	0	0	0	0	0		
2017-18	SR	0	0	25	0	0	0	0	11	0	0		
2017-18	SCR	2	0	0	0	0	0	0	0	0	0		
2017-18	SER	5	0	0	0	0	NAV	NAV	NAV	NAV	NAV		
2017-18	SECR	0	0	0	0	0	0	0	0	0	0		
2017-18	SWR	2	0	0	0	0	2	0	0	0	0		
2017-18	WR	2	0	6	0	0	2	0	0	0	0		
2017-18	WCR	0	0	0	0	0	0	0	0	0	0		
Total for 2017-18		21	4	34	2	0	7	1	14	2	0		0

Annexure 3.6													
Details of induction of rakes through private investments (Reference Paragraph 3.1.8.7)													
Year	Zone	Number of rakes for which proposal approved by RB						Number of rakes inducted in the IR system					
		LWIS	SFTO	AFTO	WLS	GPWIS	LWIS	SFTO	AFTO	WLS	GPWIS		
1	2	3	4	5	6	7	8	9	10	11	12		
2018-19	CR	0	0	0	0	0	0	0	0	0	0	0	0
2018-19	ER	0	0	0	0	0	0	0	0	0	0	0	0
2018-19	ECR	0	0	0	0	0	0	0	0	0	0	0	0
2018-19	ECoR	2	6	0	0	48	5	4	0	0	2		
2018-19	NR	0	0	0	5	0	0	0	0	5	0		
2018-19	NCR	0	0	0	0	0	0	0	0	0	0		
2018-19	NER	0	0	0	0	0	0	0	0	0	0		
2018-19	NEFR	0	0	0	0	0	0	0	0	0	0		
2018-19	NWR	0	0	0	0	0	0	0	0	0	0		
2018-19	SR	0	0	0	0	0	0	0	4	0	0		
2018-19	SCR	0	0	0	0	0	2	0	0	0	0		
2018-19	SER	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV		
2018-19	SECR	0	0	0	0	0	0	0	0	0	0		
2018-19	SWR	0	0	0	0	0	0	0	0	0	0		
2018-19	WR	0	0	0	0	0	0	0	0	0	0		
2018-19	WCR	0	0	0	0	0	0	0	0	0	0		
Total for 2018-19		2	6	0	5	48	7	4	4	5	2		

Annexure 3.6														
Details of induction of rakes through private investments (Reference Paragraph 3.1.8.7)														
Year	Zone	Number of rakes for which proposal approved by RB						Number of rakes inducted in the IR system						
		LWIS	SFTO	AFTO	WLS	GPWIS	LWIS	SFTO	AFTO	WLS	GPWIS			
1	2	3	4	5	6	7	8	9	10	11	12			
2019-20	CR	3	0	0	0	0	1	0	0	0	0	0	0	0
2019-20	ER	0	0	0	0	0	0	0	0	0	0	0	0	0
2019-20	ECR	0	0	0	0	0	0	0	0	0	0	0	0	0
2019-20	ECoR	0	3	0	0	25	2	2	0	0	21			
2019-20	NR	0	0	9	39	0	0	0	9	39	0			
2019-20	NCR	0	0	0	0	0	0	0	0	0	0			
2019-20	NER	0	0	0	0	0	0	0	0	0	0			
2019-20	NEFR	0	0	0	0	0	0	0	0	0	0			
2019-20	NWR	0	0	0	0	0	0	0	0	0	0			
2019-20	SR	0	0	0	0	0	0	0	3	0	0			
2019-20	SCR	6	0	0	0	0	1	0	0	0	0			
2019-20	SER	0	0	0	0	7	NAV	NAV	NAV	NAV	NAV			
2019-20	SECR	0	0	0	0	0	0	0	0	0	0			
2019-20	SWR	0	0	0	0	0	0	0	0	0	0			
2019-20	WR	0	0	0	0	0	0	0	3	0	0			
2019-20	WCR	0	0	0	0	0	0	0	0	0	0			
Total for 2019-20		9	3	9	39	32	4	2	15	39	21			

Annexure 3.6													
Details of induction of rakes through private investments (Reference Paragraph 3.1.8.7)													
Year	Zone	Number of rakes for which proposal approved by RB						Number of rakes inducted in the IR system					
		LWIS	SFTO	AFTO	WLS	GPWIS	LWIS	SFTO	AFTO	WLS	GPWIS		
1	2	3	4	5	6	7	8	9	10	11	12		
2020-21	CR	0	0	0	0	0	0	0	0	0	0		
2020-21	ER	0	0	0	0	0	0	0	0	0	0		
2020-21	ECR	0	0	0	0	0	0	0	0	0	0		
2020-21	ECoR	1	0	0	0	38	0	3	0	0	4		
2020-21	NR	0	4	0	5	0	0	4	1	5	0		
2020-21	NCR	0	0	0	0	0	0	0	0	0	0		
2020-21	NER	0	0	0	0	0	0	0	0	0	0		
2020-21	NEFR	0	0	0	0	0	0	0	0	0	0		
2020-21	NWR	0	0	0	0	0	0	0	0	0	0		
2020-21	SR	0	0	0	0	0	0	0	2	0	0		
2020-21	SCR	0	0	0	0	0	2	0	0	0	0		
2020-21	SER	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV		
2020-21	SECR	0	0	0	0	0	0	0	0	0	0		
2020-21	SWR	0	0	0	0	0	0	0	0	0	0		
2020-21	WR	0	0	0	0	0	0	0	0	0	0		
2020-21	WCR	0	0	0	0	0	0	0	0	0	0		
Total for 2020-21		1	4	0	5	38	2	7	3	5	4		

Source: Railway Board's and PCCOM/PCCM Office records of Zonal Railway

Annexure 3.7 Zone-wise position of allotment as per Railway Board records vis-vis-vis Zonal Railway records (Reference Paragraph 3.1.8.8)					
Year	Name of the Zone	Wagons Allotted by RB to zones as per RB record	Wagons Allotted by RB to zones as per zonal record	Difference (Col 4-Col 3)	
1	2	3	4	5	
2017-18	ECoR	1302	1436	134	
	SWR	136	96	-40	
	SR	374	371	-3	
2018-19	WCR	320	564	244	
	ECoR	1447	1739	292	
	SECR	1555	1405	-150	
	SWR	1049	529	-520	
	SCR	620	420	-200	
	SR	1023	893	-130	
	WR	2194	2234	40	
2019-20	CR	2557	2407	-150	
	WCR	446	346	-100	
	ECoR	229	289	60	
	SWR	69	471	402	
	SR	158	278	120	
2020-21	WCR	126	273	147	
	NER	222	145	-77	
	SECR	655	580	-75	
	WR	1272	1069	-203	
	WCR	416	246	-170	

Annexure 3.8 Zone-wise Demand Fulfilment [Reference Paragraph 3.1.8.9 (a)]															
ZONE	2016-2017			2017-2018			2018-2019			2019-2020			2020-2021		
	Demand	F	%age	Demand	F	%age1	Demand	F	%age2	Demand	F	%age3	Demand	F	%age4
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
BPT	98	66	67.35	56	40	71.43	2	1	50	7	3	42.86	14	9	64.29
CPT	133	133	100	207	205	99.03	534	485	90.82	277	267	96.39	163	160	98.16
CR	23318	22068	94.64	26126	24267	92.88	27018	24086	89.15	26948	24418	90.61	29056	26261	90.38
ECR	41081	31301	76.19	49699	35289	71.01	55363	38177	68.96	57207	38840	67.89	51491	37161	72.17
ECO	59145	50516	85.41	62980	52468	83.31	67234	54909	81.67	67152	55414	82.52	68983	57415	83.23
ER	37143	33631	90.54	39876	32711	82.03	41339	29973	72.51	33393	28382	84.99	32125	26528	82.58
KR	1577	1471	93.28	1527	1399	91.62	960	845	88.02	621	543	87.44	1440	1394	96.81
NCR	6575	6347	96.53	8339	7586	90.97	8479	7969	93.99	8249	8075	97.89	10102	9190	90.97
NER	1097	973	88.7	1264	1075	85.05	1445	1156	80	1504	1375	91.42	2140	1612	75.33
NEFR	7540	4377	58.05	7598	4772	62.81	11663	4760	40.81	8479	3887	45.84	6114	4274	69.91

Annexure 3.8 Zone-wise Demand Fulfilment [Reference Paragraph 3.1.8.9 (a)]															
ZONE	2016-2017			2017-2018			2018-2019			2019-2020			2020-2021		
	Demand	F	%age	Demand	F	%age1	Demand	F	%age2	Demand	F	%age3	Demand	F	%age4
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NR	31586	29386	93.03	32060	30057	93.75	31322	29243	93.36	29837	28868	96.75	32438	31512	97.15
NWR	8999	8451	93.91	11829	9902	83.71	11698	10612	90.72	9379	9134	97.39	13003	12353	95
SCR	30960	29634	95.72	32546	31401	96.48	37847	36622	96.76	33706	33030	97.99	32742	32150	98.19
SE	45095	41664	92.39	48837	42526	87.08	52141	44355	85.07	55422	47349	85.43	53599	48315	90.14
SEC	55688	48981	87.96	65527	49114	74.95	67348	50035	74.29	61007	44795	73.43	69005	48964	70.96
SR	14348	14118	98.4	13524	13243	97.92	15546	15270	98.22	14447	14195	98.26	14769	14523	98.33
SWR	15052	13814	91.78	14860	13306	89.54	13882	12293	88.55	12899	12044	93.37	13307	12637	94.97
WCR	14176	13522	95.39	16195	14634	90.36	15339	13585	88.57	15250	14336	94.01	17344	16463	94.92
WR	30219	28847	95.46	33731	30933	91.7	36308	33345	91.84	34899	34149	97.85	40869	39913	97.66
Total	423830	379300	89.49	466781	394928	84.61	495468	407721	82.29	470683	399104	84.79	488704	420834	86.11

Annexure 3.9 Time taken in Demand fulfilment [Reference Paragraph 3.1.8.9 (a)]												
Zone	Demand fulfilled						Average time for allocation (days)					
	Total Demand	2016-17	2017-18	2018-19	2019-20	2020-21	Average delay Five years	2016-17	2017-18	2018-19	2019-20	2020-21
1	2	3	4	5	6	7	8	9	10	11	12	13
BPT	119	66	40	1	3	9	2.75	2.55	3.26	5.33	0.98	2.30
CPT	1250	133	205	485	267	160	4.21	0.79	5.91	5.10	4.16	2.23
CR	121100	22068	24267	24086	24418	26261	4.85	1.52	9.51	5.91	5.29	1.95
ECR	180768	31301	35289	38177	38840	37161	9.66	7.90	14.65	14.16	7.56	3.98
ECO	270722	50516	52468	54909	55414	57415	6.83	3.66	9.07	12.17	5.91	3.36
ER	151225	33631	32711	29973	28382	26528	6.48	3.14	10.17	9.83	4.50	4.50
KR	5652	1471	1399	845	543	1394	0.59	0.41	0.46	1.30	0.65	0.46
NCR	39167	6347	7586	7969	8075	9190	1.91	1.15	3.11	2.59	1.27	1.41
NER	6191	973	1075	1156	1375	1612	3.61	2.60	3.02	3.59	2.17	5.87
NEFR	22070	4377	4772	4760	3887	4274	9.56	4.57	10.05	16.03	7.16	9.12

Annexure 3.9 Time taken in Demand fulfilment [Reference Paragraph 3.1.8.9 (a)]												
Zone	Demand fulfilled						Average time for allocation (days)					
	Total Demand	2016-17	2017-18	2018-19	2019-20	2020-21	Average delay Five years	2016-17	2017-18	2018-19	2019-20	2020-21
1	2	3	4	5	6	7	8	9	10	11	12	13
NR	149066	29386	30057	29243	28868	31512	1.02	1.30	1.14	1.41	0.58	0.69
NWR	50452	8451	9902	10612	9134	12353	2.96	1.98	6.32	3.34	1.66	1.57
SCR	162837	29634	31401	36622	33030	32150	1.14	0.51	0.94	1.99	0.94	1.14
SER	224209	41664	42526	44355	47349	48315	6.17	3.77	6.44	9.58	6.75	4.30
SECR	241889	48981	49114	50035	44795	48964	15.67	10.18	23.84	22.21	16.38	5.62
SR	71349	14118	13243	15270	14195	14523	1.33	0.65	2.16	1.98	1.15	0.74
SWR	64094	13814	13306	12293	12044	12637	0.97	0.65	1.01	1.22	0.96	1.05
WCR	72540	13522	14634	13585	14336	16463	2.67	1.27	4.00	5.06	1.58	1.60
WR	167187	28847	30933	33345	34149	39913	2.16	1.26	3.49	4.37	0.92	1.00

Annexure 3.10						
Station-wise time taken in demand fulfilment [Reference Paragraph 3.1.8.9 (a)]						
Code	Station name	Division	Zone	Demand	Total Delay	Average Delay
1	2	3	4	5	6	7
NKCR	New kusmunda colliery siding, Korba	BSP	SEC	17082	614346.98	35.96
GPCK	Gevra project (junadih) colliery i- iv	BSP	SEC	18003	421252.67	23.4
OKSR	Old kusmunda colly sdg	BSP	SEC	9227	377845.04	40.95
SBCT	South balanda-jagannath colliery sdg	KUR	ECO	23666	356586.65	15.07
CBSP	Gcb siding paradeep port, Paradeep	KUR	ECO	24032	285411.87	11.88
CCSR	Churi sdg at Ray	DHN	EC	7528	265064.17	35.21
BOMB	Belpahar open cast mines no.6	BSP	SEC	12640	260472.42	20.61
DPCB	M/s dhamra port company limited siding	KUR	ECO	19801	228497.33	11.54
BOCM	Belpahar open cast mines i and ii	BSP	SEC	8279	212536.24	25.67
CCSB	M/s churcha colly. Baikunthapur	BSP	SEC	2060	189252.2	91.87

Annexure 3.10						
Station-wise time taken in demand fulfilment [Reference Paragraph 3.1.8.9 (a)]						
Code	Station name	Division	Zone	Demand	Total Delay	Average Delay
1	2	3	4	5	6	7
LOMB	M/s lajkura open cast mines i and ii, Brajarajnagar	BSP	SEC	6090	179095.95	29.41
UMSG	Umred colliery siding, Buti bori	NGP	CR	10068	164193.92	16.31
SPUS	Spur line no.ii	DHN	EC	3626	162297.59	44.76
NYG	Nayagarh	KUR	ECO	10742	146808.07	13.67
BKLE	Bakudi	MLDT	ER	3776	138172.71	36.59
MGPV	M/s gangavaram port ltd.	WAT	ECO	17497	135967.01	7.77
DSGR	Dipika siding of secl srv Gad	BSP	SEC	6723	121342.39	18.05
BHW	Barharwa jn.	MLDT	ER	2370	108948.02	45.97
BBMT	M/s balaram siding of m/s MCL	KUR	ECO	4478	104594.75	23.36
SCDG	Secl, colliery siding dipika ii, Gevra Road	BSP	SEC	3092	102109.77	33.02
SSMN	Spur siding	DHN	EC	7357	101205.49	13.76
SLJ	Sakrigali jn.	MLDT	ER	2167	95884.66	44.25
PGCG	Prvt sdg of m/s. Gujarat state elect corp.ltd, Gevra Road	BSP	SEC	3665	94498.87	25.78

Annexure 3.10						
Station-wise time taken in demand fulfilment [Reference Paragraph 3.1.8.9 (a)]						
Code	Station name	Division	Zone	Demand	Total Delay	Average Delay
1	2	3	4	5	6	7
VZP	Vishakhapatnam-port	WAT	ECO	14106	90002.34	6.38
BCSR	Bachra sdg at Ray	DHN	EC	9409	88855.93	9.44
BSPX	Banspani	CKP	SE	5303	86747.3	16.36
LOMC	Lajkura open cast mines -ii, Brajrajnagar	BSP	SEC	4048	85276.02	21.07
GSG	Ghugus colliery sgd, Ghugus	NGP	CR	8197	83229.64	10.15
HDCB	Haldia dock complex bulk	KGP	SE	14403	81610.66	5.67
MCK	M/s manikpur colliery siding	BSP	SEC	1953	81103.92	41.53
STPS	Santaldih strn, Santal Dih	ADRA	SE	628	78806.34	125.49
KASN	Khalari sstt. Sdg. No, 1, khalari	DHN	EC	4704	75945.93	16.14
ACTR	Anaanta colliery sgd	KUR	ECO	14136	74508.27	5.27
DCSN	Dudhi chua siding Shakti Nagar	DHN	EC	15660	73154.91	4.67
JRLI	Jaroli	CKP	SE	4618	73076.84	15.82
BCSB	Burhar colliery	BSP	SEC	3417	72583.66	21.24
BBN	Barbil	CKP	SE	4730	71436.7	15.1

Annexure 3.10						
Station-wise time taken in demand fulfilment [Reference Paragraph 3.1.8.9 (a)]						
Code	Station name	Division	Zone	Demand	Total Delay	Average Delay
1	2	3	4	5	6	7
LOCM	Locm - iii sdg, Belpahar	BSP	SEC	5086	70422.63	13.85
BOCB	Belpahar open cast mines iii	BSP	SEC	5529	69731.72	12.61
SBG	Sahibganj	MLDT	ER	1287	67580.04	52.51
KCKT	Katkona colly sgd, Katora	BSP	SEC	1179	67417.6	57.18
PJPD	In plant private siding of m/s. Jindal steel ltd.	CKP	SE	8575	65017.95	7.58
DWWS	Dudhichua whrfwall siding	DHN	EC	6565	64650.49	9.85
IOJB	Baspani iron ore ltd. Jaruli	CKP	SE	6288	63176.71	10.05
SCSK	Surkachar colliery of m/s MCDC, Korba	BSP	SEC	1524	62101.02	40.75
MBCB	Ballarpur colliery sgd, Ballarshah	NGP	CR	3075	60642.49	19.72
BCRB	Bijuri colliery sgd, Bijuri	BSP	SEC	1440	60089.48	41.73

Annexure 3.11 Party-wise demand fulfilment [Reference Paragraph 3.1.8.9 (a)]			
Consignor	Total Demand	Fulfilled	%age
1	2	3	4
MCFL	180706	118930	65.81
CONR	158272	158268	100.00
SECL	114645	70742	61.71
SAIL	91845	88960	96.86
CCL	88409	60003	67.87
RAIL	80967	73990	91.38
TISC	77919	75555	96.97
PUB	70027	53577	76.51
FCI	67676	62416	92.23
NCL	65218	46044	70.60
SCCL	54553	53707	98.45
ECF	52550	43114	82.04
UTCL	49109	47624	96.98
WCF	48796	45340	92.92
BCCL	43754	33585	76.76

Annexure 3.11 Party-wise demand fulfilment [Reference Paragraph 3.1.8.9 (a)]			
Consignor	Total Demand	Fulfilled	%age
1	2	3	4
IOC	37715	35435	93.95
ACC	29916	28453	95.11
JVSL	26930	25098	93.20
NMDC	26273	25900	98.58
BPC	21858	21502	98.37
JSPL	21818	20509	94.00
HPC	20662	17839	86.34
IFFC	19069	18655	97.83
JSWT	17445	17028	97.61
GRPL	16332	16330	99.99
KPCL	15212	14945	98.24
NTPC	13874	13670	98.53
RML	13508	10612	78.56
ADIL	12663	12663	100.00
ACB	12658	12126	95.80

Annexure 3.11			
Party-wise demand fulfilment			
[Reference Paragraph 3.1.8.9 (a)]			
Consignor	Total Demand	Fulfilled	%age
1	2	3	4
HTPL	12155	12155	100.00
GL	11017	10416	94.54
BHUS	10820	10381	95.94
NFL	10770	10313	95.76
RRVU	10265	10235	99.71
SCPL	10112	9536	94.30
NVCL	10079	9735	96.59

Annexure 3.12 Index of Freight operation (Reference Paragraph 3.1.8.10)													
Zone	Description	2017-18			2018-19			2019-20			2020-21		
		Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess
1	2	3	4	5	6	7	8	9	10	11	12	13	14
CR	Wagon Turnround	NAV	2.35	NAV	NAV	2.23	NAV	2.20	2.11	-0.09	NAV	1.83	NAP
CR	Detachments (Number)	114	60	-54	60	69	9	60	59	-1	130	71	-59
CR	Parting (Number)	29	18	-11	15	26	11	15	21	6	15	13	-2
CR	Hot Axle (Number)	48	16	-32	16	34	18	16	35	19	25	28	3
CR	Poor Brake Power (Number)	0	0	0	0	0	0	0	0	0	0	1	1
ER	Wagon Turnround	NAV	2.69	NAV	NAV	2.67	NAV	NAV	2.70	NAV	NAV	2.93	NAP
ER	Detachments (Number)	10	26	16	18	6	12	10	3	7	NAV	NAV	NAP
ER	Parting (Number)	6	8	2	12	13	1	5	19	14	NAV	NAV	NAP
ER	Hot Axle (Number)	5	5	0	12	13	1	8	10	2	NAV	NAV	NAP
ER	Poor Brake Power (Number)	0	0	0	0	0	0	0	0	0	NAV	NAV	NAP
ECR	Wagon Turnround	2.57	2.61	0.04	2.45	2.41	-0.04	2.45	2.32	-0.13	2.45	2.53	0.08
ECR	Detachments (Number)	84	144	60	84	115	31	84	176	92	Under Collection		
ECR	Parting (Number)	40	41	1	34	39	5	34	37	3	NAV	NAV	NAP

Annexure 3.12 Index of Freight operation (Reference Paragraph 3.1.8.10)													
Zone	Description	2017-18			2018-19			2019-20			2020-21		
		Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ECR	Hot Axle (Number)	57	45	-12	38	51	13	38	52	14	NAV	NAV	NAP
ECR	Poor Brake Power (Number)	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAP
ECoR	Wagon Turnround	2.25	2.26	0.01	NAV	2.1	NAV	NAV	2.45	NAV	NAV	2.31	0.00
ECoR	Detachments (Number)	27	30	3	34	35	1	34	32.0	-2	40	14	-26
ECoR	Parting (Number)	43	36	-7	34	53	19	34	45	11	30	27	3
ECoR	Hot Axle (Number)	45	43	-2	34	35	1	34	32	-2	40	51	-11
ECoR	Poor Brake Power (Number)	NAV	0	NAV	NAV	0	NAV	NAV	0	NAV	NAV	0.00	0
NR	Wagon Turnround	1.60	1.60	0.00	1.60	1.57	-0.03	1.57	1.48	-0.09	2.30	2.85	0.55
NR	Detachments (Number)	53	38	15	36	36	0	36	33	3	36	28	-8
NR	Parting (Number)	7	7	0	10	10	0	10	10	0	8	8	0
NR	Hot Axle (Number)	28	21	7	16	16	0	16	14	2	25	24	-1
NR	Poor Brake Power (Number)	0	0	0	0	0	0	0	0	0	0	0	0
NCR	Wagon Turnround	2.5	2.13	-0.37	2.5	2.01	-0.49	2.5	1.94	-0.56	2.5	2.15	-0.35
NCR	Detachments (Number)	110	87	-23	71	69	-2	71	83	12	3	89	86

Annexure 3.12 Index of Freight operation (Reference Paragraph 3.1.8.10)													
Zone	Description	2017-18			2018-19			2019-20			2020-21		
		Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess
1	2	3	4	5	6	7	8	9	10	11	12	13	14
NCR	Parting (Number)	20	16	-4	34	23	-11	34	18	-16	10	17	7
NCR	Hot Axle (Number)	62	56	-6	48	59	11	48	64	16	20	69	49
NCR	Poor Brake Power (Number)	NAV	4	NAV	NAV	1	NAV	NAV	1	NAV	0	0	NAP
NER	Wagon Turnround	NAV	1.86	NAV	NAV	2.05	NAV	NAV	1.87	NAV	*	1.59	0
NER	Detachments (Number)	9	4	-5	9	4	-5	9	5	-4	4	2	-2
NER	Parting (Number)	1	0	-1	2	1	-1	2	0	-2	2	2	0
NER	Hot Axle (Number)	9	11	2	8	11	3	8	9	1	3	9	6
NER	Poor Brake Power (Number)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
NEFR	Wagon Turnround	NAV	3.00	NAV	NAV	2.90	NAV	NAV	3.40	NAV	NAV	3.00	NAP
NEFR	Detachments (Number)	32	28	-4	32	24	-8	32	11	-21	12	18	6
NEFR	Parting (Number)	10	11	1	8	1	-7	8	0	-8	8	3	-5
NEFR	Hot Axle (Number)	7	10	3	7	9	2	7	15	8	4	18	14
NEFR	Poor Brake Power (Number)	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAP
NWR	Wagon Turnround	2.20	2.64	0.44	2.00	2.34	0.34	2.00	2.23	0.23	NAV	1.65	NAP

Annexure 3.12 Index of Freight operation (Reference Paragraph 3.1.8.10)													
Zone	Description	2017-18			2018-19			2019-20			2020-21		
		Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess
1	2	3	4	5	6	7	8	9	10	11	12	13	14
NWR	Detachments (Number)	16	19	3	15	20	5	15	23	8	12	15	3
NWR	Parting (Number)	7	10	3	10	8	-2	10	5	-5	5	11	6
NWR	Hot Axle (Number)	38	25	-13	15	31	16	15	26	11	30	40	10
NWR	Poor Brake Power (Number)	0	0	0	0	0	0	0	0	0	0	0	0
SR	Wagon Turnround	NAV	2.38	NAV	NAV	2.49	NAV	NAV	3.35	NAV	NAV	3.00	NAP
SR	Detachments (Number)	21	30	9	21	19	2	21	11	-10	15	4	-11
SR	Parting (Number)	10	5	-5	6	1	5	6	6	0	6	10	4
SR	Hot Axle (Number)	15	22	7	14	9	5	14	9	-5	10	8	-2
SR	Poor Brake Power (Number)	0	0	0	0	0	0	0	0	0	0	0	0
SCR	Wagon Turnround	2.8	2.8	NAV	NAV	2.5	NAV	NAV	3.1	NAV	NAV	3	NAP
SCR	Detachments (Number)	20	11	-9	40	15	-25	40	17	-23	33	19	-14
SCR	Parting (Number)	6	32	26	28	27	-1	28	23	-5	12	30	18
SCR	Hot Axle (Number)	20	51	31	40	31	-9	40	33	-7	25	41	16
SCR	Poor Brake Power (Number)	0	0	0	0	0	0	0	0	0	0.00	0.00	0

Annexure 3.12 Index of Freight operation (Reference Paragraph 3.1.8.10)													
Zone	Description	2017-18			2018-19			2019-20			2020-21		
		Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess
1	2	3	4	5	6	7	8	9	10	11	12	13	14
SER	Wagon Turnround	NAV	1.87	NAV	NAV	1.76	NAV	NAV	1.58	NAV	0.00	1.93	0.00
SER	Detachments (Number)	15	25	10	20	27	7	20	18	-2	30	47	17
SER	Parting (Number)	40	41	1	35	62	27	35	65	30	37	25	-12
SER	Hot Axle (Number)	28	26	-2	22	28	6	22	30	8	40	33	-7
SER	Poor Brake Power (Number)	0	0	0	0	0	0	0	0	0	0.00	0.00	0
SECR	Wagon Turnround	NAV	2.63	NAV	NAV	2.64	NAV	NAV	2.56	NAV	NAV	2.45	NAP
SECR	Detachments (Number)	39	17	-22	12	33	21	12	20	8	20	25	5
SECR	Parting (Number)	23	27	4	22	68	46	22	25	3	21	15	-6
SECR	Hot Axle (Number)	31	28	-3	25	48	23	25	27	2	26	38	12
SECR	Poor Brake Power (Number)	NAV	0	NAV	NAV	0	NAV	NAV	0	NAV	0	NAV	0
SWR	Wagon Turnround	NAV	2.10	NAV	NAV	2.20	NAV	NAV	2.60	NAV	NAV	3.10	NAP
SWR	Detachments (Number)	4	2	-2	4	0	-4	3	0	-3	2	0	NAP
SWR	Parting (Number)	15	12	-3	10	8	-2	8	9	1	5	4	-1
SWR	Hot Axle (Number)	6	13	7	9	4	-5	9	5	-4	5	14	9

Annexure 3.12 Index of Freight operation (Reference Paragraph 3.1.8.10)													
Zone	Description	2017-18			2018-19			2019-20			2020-21		
		Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess	Target	Actual	Shortfall/ Excess
1	2	3	4	5	6	7	8	9	10	11	12	13	14
SWR	Poor Brake Power (Number)	0	0	0	0	0	0	0	0	0	NIL	0.00	NAP
WR	Wagon Turnround	NAV	2.30	NAV	NAV	2.30	NAV	NAV	2.70	NAV	NAV	2.60	NAP
WR	Detachments (Number)	50	36	-14	30	123	93	30	50	20	47	40	-7
WR	Parting (Number)	5	6	1	10	47	37	10	39	29	50	26	-24
WR	Hot Axle (Number)	47	42	-5	40	59	19	35	30	-5	25	45	20
WR	Poor Brake Power (Number)	NAV	0	0	NAV	0	0	NAV	0	0	NAV	NAV	NAP
WCR	Wagon Turnround	1.55	1.66	0.11	1.55	1.63	0.08	1.55	1.74	0.19	1.55	2.04	0.49
WCR	Detachments (Number)	91	107	16	84	131	47	84	102	18	41	129	88
WCR	Parting (Number)	38	24	-14	28	26	-2	28	33	5	30	26	-4
WCR	Hot Axle (Number)	34	48	14	34	54	20	34	47	13	25	64	39
WCR	Poor Brake Power (Number)	0	0	0	0	0	0	0	0	0	0	0	0
NAV: Not available													
NAP: Not applicable													

Annexure 3.13 Zone-wise position of running of Loaded/Empty wagons (Reference Paragraph 3.1.8.12)					
Name of the Zonal Railways	Year	Total wagon km (loaded + empty) (in lakh km.)	Wagon km loaded (in lakh km)	Percentage of loaded km to total km	Percentage of empty km to total km
1	2	3	4	5	6
CR	2017-18	13157.33	8548.39	64.97	35.03
	2018-19	14461.33	9404.55	65.03	34.97
	2019-20	13136.39	8437.65	64.23	35.77
	2020-21	12157.67	7831.28	64.41	35.59
ER	2017-18	4626.94	3111.34	67.24	32.76
	2018-19	4731.22	3203.10	67.70	32.30
	2019-20	5068.55	3372.48	66.54	33.46
	2020-21	5260.43	3321.55	63.14	36.86
ECR	2017-18	12686.71	7486.63	59.01	40.99
	2018-19	14459.74	8526.09	58.96	41.04
	2019-20	14528.17	8335.50	57.37	42.63
	2020-21	NAV	NAV	NAV	NAV

Annexure 3.13 Zone-wise position of running of Loaded/Empty wagons (Reference Paragraph 3.1.8.12)					
Name of the Zonal Railways	Year	Total wagon km (loaded + empty) (in lakh km.)	Wagon km loaded (in lakh km)	Percentage of loaded km to total km	Percentage of empty km to total km
1	2	3	4	5	6
ECOR	2017-18	16399.22	11354.88	69.24	30.76
	2018-19	16843.65	11765.73	69.85	30.15
	2019-20	17623.58	12447.98	70.63	29.37
	2020-21	18418.14	12646.43	68.66	31.34
NR	2017-18	17798.62	10781.46	60.57	39.43
	2018-19	17948.69	10971.24	61.13	38.87
	2019-20	14165.13	7964.81	56.23	43.77
	2020-21	14823.66	8597.10	58.00	42.00
NCR	2017-18	15697.26	10154.56	64.69	35.31
	2018-19	15739.20	10348.52	65.75	34.25
	2019-20	16361.50	8276.91	50.59	49.41
	2020-21	14778.14	8427.64	57.03	42.97

Annexure 3.13 Zone-wise position of running of Loaded/Empty wagons (Reference Paragraph 3.1.8.12)					
Name of the Zonal Railways	Year	Total wagon km (loaded + empty) (in lakh km.)	Wagon km loaded (in lakh km)	Percentage of loaded km to total km	Percentage of empty km to total km
1	2	3	4	5	6
NER	2017-18	4237.61	2177.83	51.39	48.61
	2018-19	4329.49	2229.81	51.50	48.50
	2019-20	4047.24	1978.28	48.88	51.12
	2020-21	4585.09	2165.87	47.24	52.76
NEFR	2017-18	4186.02	2379.69	56.85	43.15
	2018-19	4309.46	2469.07	57.29	42.71
	2019-20	4522.75	2526.26	55.86	44.14
	2020-21	NAV	NAV	NAV	NAV
NWR	2017-18	9367.57	7180.27	76.65	23.35
	2018-19	9191.81	7032.18	76.50	23.50
	2019-20	9299.00	6736.75	72.45	27.55
	2020-21	10823.51	8332.91	76.99	23.01

Annexure 3.13 Zone-wise position of running of Loaded/Empty wagons (Reference Paragraph 3.1.8.12)					
Name of the Zonal Railways	Year	Total wagon km (loaded + empty) (in lakh km.)	Wagon km loaded (in lakh km)	Percentage of loaded km to total km	Percentage of empty km to total km
1	2	3	4	5	6
SR	2017-18	4376.6	2482.79	56.73	43.27
	2018-19	4786.6	2736.42	57.17	42.83
	2019-20	4496.59	2580.32	57.38	42.62
	2020-21	4852.46	2558.77	52.73	47.27
SCR	2017-18	17199.04	10367.00	60.28	39.72
	2018-19	18031.59	11144.15	61.80	38.20
	2019-20	16787.92	9957.07	59.31	40.69
	2020-21	16199.00	9434.00	58.24	41.76
SER	2017-18	14864.45	10183.35	68.51	31.49
	2018-19	15354.36	10847.14	70.65	29.35
	2019-20	16705.01	11637.61	69.67	30.33
	2020-21	18543.34	12306.56	66.37	33.63

Annexure 3.13 Zone-wise position of running of Loaded/Empty wagons (Reference Paragraph 3.1.8.12)					
Name of the Zonal Railways	Year	Total wagon km (loaded + empty) (in lakh km.)	Wagon km loaded (in lakh km)	Percentage of loaded km to total km	Percentage of empty km to total km
1	2	3	4	5	6
SECR	2017-18	17303.13	10376.48	59.97	40.03
	2018-19	18283.31	10780.26	58.96	41.04
	2019-20	17526.03	10546.59	60.18	39.82
	2020-21	17915.70	10586.62	59.09	40.91
SWR	2017-18	3925.52	2409.10	61.37	38.63
	2018-19	3765.89	2252.14	59.80	40.20
	2019-20	3816.81	2218.80	58.13	41.87
	2020-21	4120.60	2430.00	58.97	41.03
WR	2017-18	15193.37	10879.52	71.61	28.39
	2018-19	16430.34	12017.14	73.14	26.86
	2019-20	15497.21	11230.45	72.47	27.53
	2020-21	15009.00	10611.00	70.70	29.30

Annexure 3.13 Zone-wise position of running of Loaded/Empty wagons (Reference Paragraph 3.1.8.12)					
Name of the Zonal Railways	Year	Total wagon km (loaded + empty) (in lakh km.)	Wagon km loaded (in lakh km)	Percentage of loaded km to total km	Percentage of empty km to total km
1	2	3	4	5	6
WCR	2017-18	13550.79	8797.68	64.92	35.08
	2018-19	14973.98	9927.38	66.30	33.70
	2019-20	14875.35	9572.65	64.35	35.65
	2020-21	NAV	NAV	NAV	NAV
Total		724154.81	461395.73	63.72	36.28

Annexure 3.14	
Infrastructure-wise deficiencies observed in selected Goods sheds and Sidings (Reference Paragraph 3.1.8.15)	
Infrastructure facilities	Infrastructure-wise deficient Goods sheds and Sidings
1	2
Full rake facility	09 loading/unloading points in 9 zones (CR, ER, ECR, NER, NCR, NFR, SR, SCR and WCR)
Pucca circulating area	25 loading/unloading points in 11 zones (CR, ER, ECR, NCR, NER, NFR, NWR, SCR, SER, SECR and SWR)
All weather approach Road	24 loading/unloading points in 10 zones (CR, ER, NR, NER, NFR, NWR, SER, SECR, SWR and WR)
Lighting including lighting facilitating loading/unloading	14 loading/unloading points in 10 zones (CR, ER, ECR, NR, SER, NER, NFR, NWR, SR and SWR)
Merchant room	39 loading/unloading points in 14 zones (CR, ER, ECR, NR, NCR, NER, NFR, NWR, SR, SCR, SER, SECR, SWR, and WCR)
TMS/FOIS connection	15 loading/unloading points in 10 zones (CR, ER, ECR, NR, NER, NFR, NWR, SER, WCR and SR)
DOT phone with STD facility	87 loading/unloading points in all 16 zones. However, CUG phone had been provided to selected siding of SCR.
Cool drinking water, washroom facility	40 loading/unloading points in 13 zones (CR, ER, ECR, NR, NCR, NER, NFR, NWR, SR, SCR, SER, SWR and WR)
Rail level/high-level platforms	Not required in five loading/unloading points in three zones (NR, NCR and SECR). KLRE siding (ECR) was closed since January 2019 (ii) HSR siding (NWR) was closed since 07.02.2020 (iii) PMRG siding (NR) being private siding and (iv) unloading operation was being done by Trippler in GETS siding (WR).

Annexure 3.15								
Position of Unconnected wagons and their detention in yards and goods sheds (Reference Paragraph 3.1.8.17)								
Name of the Railway	Year	No. of wagons unconnected during the year	No. of wagons connected within 72 hours	No. of wagons connected beyond 72 hours	Whether the assistance of FOIS application taken for connecting of the unconnected wagons	Time taken (no. of days) in connecting these unconnected wagons beyond 72 hrs	Loss of earning capacity (₹ in crore)	No. of wagons not connected
1	2	3	4	5	6	7	8	9
CR	2017-18	146	4	116	No	NAV	0.00	26
	2018-19	131	2	105	No	NAV	0.00	24
	2019-20	95	0	90	No	NAV	0.00	5
	2020-21	7	5	2	No	NAV	0.00	0
ER	2017-18	96	34	62	Partially	NAV	0.00	0
	2018-19	51	4	47	Partially	NAV	0.00	0
	2019-20	43	1	42	Partially	NAV	0.00	0
	2020-21	66	1	60	Partially	NAV	0.00	5
ECR	2017-18	0	0	0	NAP	NAP	0.00	0
	2018-19	4	4	0	Yes	NAV	0.00	0
	2019-20	9	7	2	Yes	676	0.21	0
	2020-21	3	0	0	Yes	NAV	0.00	3

Annexure 3.15								
Position of Unconnected wagons and their detention in yards and goods sheds (Reference Paragraph 3.1.8.17)								
Name of the Railway	Year	No. of wagons unconnected during the year	No. of wagons connected within 72 hours	No. of wagons connected beyond 72 hours	Whether the assistance of FOIS application taken for connecting of the unconnected wagons	Time taken (no. of days) in connecting these unconnected wagons beyond 72 hrs	Loss of earning capacity (₹ in crore)	No. of wagons not connected
1	2	3	4	5	6	7	8	9
ECoR	2017-18	49	6	43	No	NAV	0.00	0
	2018-19	58	17	41	No	NAV	0.00	0
	2019-20	71	32	39	No	NAV	0.00	0
	2020-21	98	51	47	No	NAV	0.00	0
NR	2017-18	94	14	77	No	NAV	0.00	3
	2018-19	138	22	111	No	NAV	0.00	5
	2019-20	135	8	125	No	NAV	0.00	2
	2020-21	155	35	120	Yes	NAV	0.00	0
NCR	2017-18	80	18	62	No	NAV	0.00	0
	2018-19	38	7	31	No	NAV	0.00	0
	2019-20	41	14	27	No	NAV	0.00	0
	2020-21	5	3	2	No	NAV	0.00	0

Annexure 3.15 Position of Unconnected wagons and their detention in yards and goods sheds (Reference Paragraph 3.1.8.17)								
Name of the Railway	Year	No. of wagons unconnected during the year	No. of wagons connected within 72 hours	No. of wagons connected beyond 72 hours	Whether the assistance of FOIS application taken for connecting of the unconnected wagons	Time taken (no. of days) in connecting these unconnected wagons beyond 72 hrs	Loss of earning capacity (₹ in crore)	No. of wagons not connected
1	2	3	4	5	6	7	8	9
NER*	2017-18	110	1	109	Yes	768	5.71	0
	2018-19	141	12	129	Yes	617	3.43	0
	2019-20	101	10	91	Yes	4	0.25	0
	2020-21	103	2	101	Yes	188	0.27	0
NEFR	2017-18	53	1	51	Partially	NAV	0.00	1
	2018-19	64	2	61	Partially	NAV	0.00	1
	2019-20	58	2	48	Partially	NAV	0.00	8
	2020-21	13	0	7	Partially	NAV	0.00	6
NWR	2017-18	0	0	0	NAP	NAP	0.00	0
	2018-19	0	0	0	NAP	NAP	0.00	0
	2019-20	0	0	0	NAP	NAP	0.00	0
	2020-21	0	0	0	NAP	NAP	0.00	0
SR	2017-18	0	0	0	NAP	NAP	0.00	0
	2018-19	2	1	1	No	17	0.01	0
	2019-20	0	0	0	NAP	NAP	0.00	0
	2020-21	0	0	0	NAP	NAP	0.00	0

Annexure 3.15									
Position of Unconnected wagons and their detention in yards and goods sheds (Reference Paragraph 3.1.8.17)									
Name of the Railway	Year	No. of wagons unconnected during the year	No. of wagons connected within 72 hours	No. of wagons connected beyond 72 hours	Whether the assistance of FOIS application taken for connecting of the unconnected wagons	Time taken (no. of days) in connecting these unconnected wagons beyond 72 hrs	Loss of earning capacity (₹ in crore)	No. of wagons not connected	
1	2	3	4	5	6	7	8	9	
SCR	2017-18	35	35	0	No	NAP	0.00	0	
	2018-19	24	24	0	No	NAP	0.00	0	
	2019-20	19	19	0	No	NAP	0.00	0	
	2020-21	2	2	0	No	NAP	0.00	0	
SER	2017-18	13	3	10	No	4883	2.72	0	
	2018-19	14	2	12	No	4737	2.69	0	
	2019-20	76	1	71	No	16210	5.06	4	
	2020-21	15	4	10	No	68	0.02	1	
SECR	2017-18	63	11	43	No	559	0.31	9	
	2018-19	92	189	53	No	752	0.43	0	
	2019-20	125	44	57	No	246	0.08	24	
	2020-21	237	3	5	Yes	85	0.03	229	
SWR	2017-18	16	16	0	No	NAP	0.00	0	
	2018-19	0	0	0	NAP	NAP	0.00	0	
	2019-20	0	0	0	NAP	NAP	0.00	0	
	2020-21	5	1	4	No	48	0.01	0	

Annexure 3.15									
Position of Unconnected wagons and their detention in yards and goods sheds (Reference Paragraph 3.1.8.17)									
Name of the Railway	Year	No. of wagons unconnected during the year	No. of wagons connected within 72 hours	No. of wagons connected beyond 72 hours	Whether the assistance of FOIS application taken for connecting of the unconnected wagons	Time taken (no. of days) in connecting these unconnected wagons beyond 72 hrs	Loss of earning capacity (₹ in crore)	No. of wagons not connected	
1	2	3	4	5	6	7	8	9	
WR	2017-18	5	0	5	Yes	204	0.11	0	
	2018-19	1	0	1	Yes	20	0.01	0	
	2019-20	1	1	0	Yes	NAP	0.00	0	
	2020-21	5	2	3	Yes	12	0.00	0	
WCR	2017-18	53	2	39	No	7224	4.03	12	
	2018-19	55	0	8	No	4356	2.47	47	
	2019-20	70	1	33	No	5568	1.74	36	
	2020-21	58	6	29	No	11187	3.49	23	
Total		3242	686	2232		58429	33.08	324	
NAP: Not applicable; NAV: Not available.									
* NER - Loss of earning capacity has been calculated based on Special Letter and other observations issued.									
Time taken (no. of days) in connecting these unconnected wagons beyond 72 hrs was not taken into account for calculation of loss of earning capacity as time period was mentioned instead of actual days.									

Annexure 3.16	
Infrastructure-wise/ Plant & Machinery-wise deficiencies observed in selected terminal yards (Reference Paragraph 3.1.8.21)	
Infrastructure facilities	Infrastructure-wise deficient Terminal Yards
1	2
Adequate centre to centre distance between tracks for nominated lines for conducting intensive examination	At 17 Terminal Yards in 13 zones (CR, ECR, ECoR, ER, NCR, NER, NFR, NR, SCR, SECR, SER, SR and WCR). Partially available at three Terminal Yards in three zones (ECR, SCR and WCR).
Concrete pathways from one end to another	At 12 Terminal Yards in eight zones (CR, ECR, NCR, NFR, NR, SCR, SECR, and WCR). Partially available at ten Terminal Yards in eight zones (ECR, ECoR, NER, NFR, NR, SCR, SER and SR).
Welding grid on the entire length of train	At 11 Terminal Yards in eight zones (CR, ECR, NCR, NFR, NR, SCR, SECR and SER). Partially available at eight Terminal Yards in six zones (ECoR, ER, NR, SCR SR and WCR).
Duty room for Junior Engineer (C&W)	At 17 Terminal Yards in nine zones (CR, ECR, ECoR, NCR, NFR, NR, SCR, SR and WCR).
Staff room	At 19 Terminal Yards in ten zones (CR, ECR, ECoR, NCR, NFR, NR, SCR, SECR, SR and WCR).
Air Compressor/vacuum exhaust room	At 17 Terminal Yards in ten zones (CR, ECR, ECoR, NCR, NFR, NR, SCR, SECR, SR and WCR). Partially available at one Terminal Yard out of two in WCR.
Store Room for stocking material	At 20 Terminal Yards in 11 zones (CR, ECR, ECoR, NCR, NFR, NR, SCR, SECR, SR, WCR and WR).
Tool Room	At 18 Terminal Yards in 12 zones (CR, ECR, ECoR, NCR, NFR, NR, SCR, SECR, SER, SR, WCR and WR).

Annexure 3.16	
Infrastructure-wise/ Plant & Machinery-wise deficiencies observed in selected terminal yards (Reference Paragraph 3.1.8.21)	
Infrastructure facilities	Infrastructure-wise deficient Terminal Yards
1	2
Oil grease room	At 16 Terminal Yards in 11 zones (ECR, ECoR, ER, NFR, NR, SCR, SECR, SER, SR, WCR and WR). NAP at one Terminal Yard in SECR.
Welding machine, battery charging room	At 14 Terminal Yards in ten zones (CR, ECR, ECoR, NCR, NR, SCR, SECR, SER, SR and WCR). Partially available at three Terminal Yards in two zones (ECoR and NFR). NAP at one Terminal Yard in SECR.
Required plant and machinery	Plant and Machinery-wise deficient Terminal Yards
Diesel screw compressor	At 18 Terminal Yards in ten zones (ECR, ECoR, ER, NCR, NFR, NR, SCR, SECR, SER, SR and WCR).
Vacuum exhauster	At 12 Terminal Yards in six zones (ECoR, ER, NFR, NR, SR and WR).*
Welding plant	At 21 Terminal Yards in 11 zones (CR, ECR, ECoR, NCR, NFR, NR, SCR, SECR, SER, SR and WCR). Partially available at one Terminal Yard in ECoR.
Rake test rig	At 19 Terminal Yards in 11 zones (CR, ECR, ECoR, NCR, NFR, NR, SCR, SECR, SER, SR and WCR).
Hydraulic jacks of various capacities	At 19 Terminal Yards in ten zones (CR, ECR, NCR, NFR, NR, SCR, SECR, SER, SR and WCR). Partially available at one Terminal Yard in ECoR.
Lister truck for carrying material such as brake blocks etc.	At 16 Terminal Yards in ten zones (ECR, ECoR, ER, NFR, NR, SCR, SECR, SER, SR and WCR). Partially available at one Terminal Yard in ECoR.

Note: *Vacuum exhauster was not required at five Terminal Yards in four zones (ECoR, SCR, SER and WCR) as Air Brake system was used.

Annexure 3.17 Erroneous despatch of wagons for POH [(Reference Paragraph 3.1.8.23 (a))]					
Zone	Period	No. of wagons not due for POH but erroneously received in workshop	Total No. of days taken for returning the wagons erroneously received for POH	Loss of Earning capacity (₹ in crore)	
1	2	3	4	5	
CR	2017-18 to 2020-21	86	127	0.05	
ER	2017-18 to 2020-21	759	51589	21.21	
ECR	2017-18 to 2020-21	0	0	0.00	
ECoR	2017-18 to 2020-21	0	0	0.00	
NR	2017-18 to 2020-21	885	16650	7.62	
NCR	2017-18 to 2020-21	2193	48296	20.02	
NER	2017-18 to 2020-21	0	0	0.00	
NEFR	2017-18 to 2020-21	0	0	0.00	
NWR	2017-18 to 2020-21	384	0	0.00	
SR	2017-18 to 2020-21	1087	20677	9.71	
SCR	2017-18 to 2020-21	1927	32851	15.03	
SER	2017-18 to 2020-21	534	1031	0.36	
SECR	2017-18 to 2020-21	381	8011	3.75	
SWR	2017-18 to 2020-21	0	0	0.00	
WR	2017-18 to 2020-21	187	992	0.32	
WCR	2017-18 to 2020-21	1004	13317	4.78	
Total		9427	193541	82.85	

Annexure 3.18 Details of wagons detained prior to/during/after POH (Reference Paragraph 3.1.8.24)																	
Year	Zonal Railway	Name of Workshop	Total no of wagon	No of wagons detained in yard before sending for POH	Total no. of days Wagon detained before sending for POH	Minimum no. of days Wagon detained in yard before sending for POH	Maximum no. of days Wagon detained in yard before sending for POH	No of wagons POHed beyond 10 days	No. of days actually taken for POH	Minimum no. of days actually taken for POH	Maximum no. of days actually taken for POH	No of wagons detained in yard after POH	No. of days Wagon detained after POH before putting them in service	Minimum no. of days Wagon detained after POH before putting them in service	Maximum no. of days Wagon detained after POH before putting them in service	Loss of Earning Capacity (₹ in Crore)	Reasons for Detention (w.r.t col.8 and 10)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
2017-18	CR	Wagon Work shop Kurdwadi	367	235	4464	2	281	202	5319	11	313	91	733	2	71	4.73	
2017-18	ECR		0													0.00	
2017-18	ECoR		0													0.00	
2017-18	ER	JMP	4469	2048	5125	1	555	1066	30897	11	385	3914	10814	1	40	20.16	
2017-18	NCR	Wagon Repair Workshop/Jhansi	7789	7550	145827	1	1774	2940	81538	11	283	7592	33195	1	750	128.82	
2017-18	NER	IZN Workshop	96	63	766	1	62	5	58	11	12	6	26	1	10	0.45	
2017-18	NEFR	NBQ	1450	1204	14128	1	140	14	274	11	47	608	1869	1	37	8.99	
2017-18	NR	JUDW	4729	4371	84182	1	205	319	6573	11	62	0	0	0	0	48.80	
2017-18	NWR	Ajmer Diesel Loco Workshop	1101	1073	23566	1	109	449	5703	11	19	1097	9126	1	42	18.89	
2017-18	SCR	WRS/GTPL	5555	5251	48279	1	154	2281	47435	11	93	5439	47923	1	113	67.33	

Annexure 3.18 Details of wagons detained prior to/during/after POH (Reference Paragraph 3.1.8.24)																	
Year	Zonal Railway	Name of Workshop	Total no of wagon	No of wagons detained in yard before sending for POH	Total no. of days Wagon detained in yard before sending for POH	Minimum no. of days Wagon detained in yard before sending for POH	Maximum no. of days Wagon detained in yard before sending for POH	No of wagons POHed beyond 10 days	No. of days actually taken for POH	Minimum no. of days actually taken for POH	Maximum no. of days actually taken for POH	No of wagons detained in yard after POH	No. of days Wagon detained in yard after POH before putting them in service	Minimum no. of days Wagon detained in yard after POH before putting them in service	Maximum no. of days Wagon detained in yard after POH before putting them in service	Loss of Earning Capacity (₹ in Crore)	Reasons for Detention (w.r.t col.8 and 10)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
2017-18	SECR	WRS/RAIPUR	2034	2034	56708	1	439	0	0	0	0	0	0	0	0	31.60	
2017-18	SER	POH Workshop/Kharagpur	4124													0.00	
2017-18	SR	CW/PER	3441	2686	66391	1	653	15	198	11	32	3178	8394	1	147	41.70	
2017-18	SWR		0													0.00	
2017-18	WCR	WRS-KOTA	6000	5994	87405	1	245	1886	41047	11	132	1052	4687	1	42	63.68	
2017-18	WR	DHD	1163	1080	17539	1	82	299	4716	11	35	1107	2888	1	27	12.35	
2017-18	TOTAL		42318	33589	554380	1	1774	9476	223758	11	385	24084	119655	1	750	447.51	
2018-19	CR	Wagon Work shop Kurdwadi	500	308	5174	2	150	258	8356	11	250	263	5333	2	276	9.24	
2018-19	ECR		0													0.00	
2018-19	ECoR		0													0.00	
2018-19	ER	JMP	5197	3936	10553	1	101	1182	27169	11	317	4855	17207	1	38	24.45	
2018-19	NCR	Wagon Repair Workshop/Jhansi	8157	6880	92240	1	1066	2199	72388	11	372	8141	41653	1	378	104.53	

Annexure 3.18 Details of wagons detained prior to/during/after POH (Reference Paragraph 3.1.8.24)																	
Year	Zonal Railway	Name of Workshop	Total no of wagon	No of wagons detained in yard before sending for POH	Total no. of days Wagon detained in yard before sending for POH	Minimum no. of days Wagon detained in yard before sending for POH	Maximum no. of days Wagon detained in yard before sending for POH	No of wagons POHed beyond 10 days	No. of days actually taken for POH	Minimum no. of days actually taken for POH	Maximum no. of days actually taken for POH	No of wagons detained in yard after POH	No. of days Wagon detained after POH before putting them in service	Minimum no. of days Wagon detained after POH before putting them in service	Maximum no. of days Wagon detained after POH before putting them in service	Loss of Earning Capacity (₹ in Crore)	Reasons for Detention (w.r.t col.8 and 10)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
2018-19	NER	IZN Workshop	156	80	427	1	21	0	0	0	8	2	11	1	10	0.25	
2018-19	NEFR	NBQ	1457	859	14666	1	138	36	804	11	75	590	2258	1	122	9.85	
2018-19	NR	JUDW	620	474	10357	1	74	124	2017	11	49	0	0	0	0	6.32	
2018-19	NWR	Ajmer Diesel Loco Workshop	1201	1157	20486	1	179	462	6051	11	19	1201	13749	1	51	20.23	
2018-19	SCR	WRS/GTPL	6017	5723	66844	1	152	1623	42973	11	134	5973	68299	1	106	91.82	
2018-19	SECR	WRS/RAIPUR	4801	2024	64412	1	831	0	0	0	0	4796	42896	1	158	60.87	
2018-19	SER	POH Workshop/Kharagpur	5872													0.00	
2018-19	SR	CW/PER	3599	2543	64423	1	306	541	11662	11	89	3337	6918	1	58	44.01	
2018-19	SWR		0													0.00	
2018-19	WCR	WRS-KOTA	6008	5973	90426	1	233	1574	32154	11	181	2	308	2	254	60.77	
2018-19	WR	DHD	1351	1305	19165	1	118	179	2688	11	46	1310	3644	1	35	13.45	
2018-19	TOTAL		44936	31262	459173	1	1066	8178	206262	11	372	30470	202276	1	378	445.78	

Annexure 3.18 Details of wagons detained prior to/during/after POH (Reference Paragraph 3.1.8.24)																	
Year	Zonal Railway	Name of Workshop	Total no of wagon	No of wagons detained in yard before sending for POH	Total no. of days Wagon detained in yard before sending for POH	Minimum no. of days Wagon detained in yard before sending for POH	Maximum no. of days Wagon detained in yard before sending for POH	No of wagons POHed beyond 10 days	No of days actually taken for POH	Minimum no. of days actually taken for POH	Maximum no. of days actually taken for POH	No of wagons detained in yard after POH	No. of days Wagon detained in yard after POH before putting them in service	Minimum no. of days Wagon detained in yard after POH before putting them in service	Maximum no. of days Wagon detained in yard after POH before putting them in service	Loss of Earning Capacity (₹ in Crore)	Reasons for Detention (w.r.t col.8 and 10)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
2019-20	CR	Wagon Work shop Kurdwadi	506	465	7335	2	219	336	10353	11	179	334	3449	2	93	5.55	
2019-20	ECR		0													0.00	
2019-20	ECoR		0													0.00	
2019-20	ER	JMP	5415	5374	34598	1	472	1037	48429	11	508	5265	19433	1	82	28.74	
2019-20	NCR	Wagon Repair Workshop/Jhansi	7746	7493	83531	1	1746	1701	73063	11	1103	6718	39846	1	370	55.99	
2019-20	NER	IZN Workshop	337	191	1147	1	54	0	0	0	9	1	3	3	3	0.36	
2019-20	NEFR	NBQ	1378	721	13317	1	208	18	409	11	58	608	2365	1	115	4.96	
2019-20	NR	JUDW	2336	1687	29278	1	131	376	6496	11	72	0	0	0	0	9.99	
2019-20	NWR	Ajmer Diesel Loco Workshop	1231	1168	16344	1	113	363	4833	11	20	1229	15524	1	58	10.32	
2019-20	SCR	WRS/GTPL	6006	5244	27022	1	164	1749	59903	11	155	5982	79896	1	183	46.60	
2019-20	SECR	WRS/RAIPUR	4691	3837	36796	1	224	757	21961	11	210	4687	41295	1	124	28.86	

Annexure 3.18 Details of wagons detained prior to/during/after POH (Reference Paragraph 3.1.8.24)																	
Year	Zonal Railway	Name of Workshop	Total no of wagon	No of wagons detained in yard before sending for POH	Total no. of days Wagon detained in yard before sending for POH	Minimum no. of days Wagon detained in yard before sending for POH	Maximum no. of days Wagon detained in yard before sending for POH	No of wagons POHed beyond 10 days	No. of days actually taken for POH	Minimum no. of days actually taken for POH	Maximum no. of days actually taken for POH	No of wagons detained in yard after POH	No. of days Wagon detained after POH before putting them in service	Minimum no. of days Wagon detained after POH before putting them in service	Maximum no. of days Wagon detained after POH before putting them in service	Loss of Earning Capacity (₹ in Crore)	Reasons for Detention (w.r.t col.8 and 10)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
2019-20	SER	POH Workshop/ Kharagpur	6398													0.00	
2019-20	SR	CW/PER	3879	2755	38037	1	243	721	15304	11	154	3559	10647	1	71	17.72	
2019-20	SWR		0													0.00	
2019-20	WCR	WRS-KOTA	5892	5876	66306	1	302	1820	35859	11	109	3033	25443	1	384	34.14	
2019-20	WR	DHD	1527	1488	17357	1	146	254	3976	11	28	1467	4779	1	54	7.36	
2019-20	TOTAL		47342	36299	371068	1	1746	9132	280586	11	1103	32883	242680	1	384	250.56	
2020-21	CR	Wagon Work shop Kurdwadi	545	478	3956	1	60	287	5435	11	105	143	365	1	22	2.15	
2020-21	ECR															0.00	
2020-21	ECoR															0.00	
2020-21	ER	JMP	5040	4961	85591	1	2581	1197	33758	11	510	0	0	0	0	33.51	
2020-21	NCR	Wagon Repair Workshop/ Jhansi	6959	6932	125805	1	2380	1660	81621	11	1068	6957	43482	1	352	73.11	

Annexure 3.18 Details of wagons detained prior to/during/after POH (Reference Paragraph 3.1.8.24)																	
Year	Zonal Railway	Name of Workshop	Total no of wagon	No of wagons detained in yard before sending for POH	Total no. of days Wagon detained in yard before sending for POH	Minimum no. of days Wagon detained in yard before sending for POH	Maximum no. of days Wagon detained in yard before sending for POH	No of wagons POHed beyond 10 days	No. of days actually taken for POH	Minimum no. of days actually taken for POH	Maximum no. of days actually taken for POH	No of wagons detained in yard after POH	No. of days Wagon detained in yard after POH before putting them in service	Minimum no. of days Wagon detained in yard after POH before putting them in service	Maximum no. of days Wagon detained in yard after POH before putting them in service	Loss of Earning Capacity (₹ in Crore)	Reasons for Detention (w.r.t col.8 and 10)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
2020-21	NER	IZN Workshop	443	427	3611	1	157	0	0	11	10	435	2254	1	24	1.83	
2020-21	NEFR	NBQ	1191	990	20516	1	330	27	814	11	50	1043	4135	1	42	7.86	
2020-21	NR	JUDW	1887	0	0	0	0	1208	20915	11	197	0	0	0	0	2.76	
2020-21	NWR	Ajmer Diesel Loco Workshop	1208	1189	18173	1	253	405	5035	11	20	1206	11884	1	45	9.69	
2020-21	SCR	WRS/GTPL	5722	5289	33098	1	207	1416	42610	11	213	5653	60235	1	149	38.00	
2020-21	SECR	WRS/RAIPUR	4683	0	0	0	0	0	0	11	0	4555	38335	1	179	11.96	
2020-21	SER	POH Workshop/Kharagpur	21991	0	0	0	0	0	0	11	0	0	0	0	0	0.00	
2020-21	SR	CW/PER	2720	2296	84199	1	584	392	5591	11	21	2424	12950	1	96	30.84	
2020-21	SWR															0.00	
2020-21	WCR	WRS-KOTA	5751	5748	80322	1	234	1826	53738	11	153	5065	21712	1	142	42.91	
2020-21	WR	DHD	1461	1454	16388	1	107	290	5662	11	101	1450	7403	1	29	8.29	
2020-21	TOTAL		59601	29764	471659	1	2581	8708	255179	11	1068	28931	202755	1	352	262.89	
	Grand Total		194197	130914	1856280	1	2581	35494	965785	11	1103	116368	767366	1	750	1406.75	

Source: Records of workshop

Annexure 3.19					
Analysis of detention of a Load where detention time is more than 150 hours					
(Reference Paragraph 3.1.8.33)					
Starting Railway	No of Loads	Detention time range		Total time range	
		(Hrs)	(Hrs)	(Hrs)	(Hrs)
1	2	3	4	5	
CPT	2	154.70 to 227.07	211.03 to 271.33		73 to 84
CR	20	151.23 to 286.77	189.33 to 392.42		60 to 97
ECR	11	154.73 to 324.57	169.47 to 333.58		77 to 98
ECoR	74	152.57 to 487.43	163.42 to 498.67		52 to 98
ER	28	152.67 to 552.57	166.23 to 576.77		66 to 98
NCR	11	157.07 to 258.83	170.20 to 307.17		65 to 96
NER	4	183.87 to 398.40	202.30 to 434.33		83 to 92
NEFR	17	151.07 to 551.20	161.12 to 554.70		58 to 99
NR	33	150.83 to 410.25	179.17 to 482.00		46 to 100
NWR	11	161.77 to 544.17	213.50 to 617.67		68 to 98
SCR	24	153.25 to 646.20	166.62 to 669.43		58 to 99
SER	27	153.10 to 491.15	174.08 to 556.45		60 to 100
SECR	35	150.17 to 389.37	168.25 to 427.50		65 to 99
SR	16	159.52 to 342.77	170.35 to 351.27		65 to 99
SWR	13	160.83 to 360.87	161.92 to 422.42		59 to 100
WCR	11	153.02 to 398.43	164.97 to 403.33		65 to 99
WR	37	150.87 to 584.55	157.30 to 626.55		58 to 100
Total	374	150.17 to 646.20	157.30 to 669.43		46 to 100

Annexure 3.20 Detention to wagons at en-route stations (Reference Paragraph 3.1.8.33)										
Zone	Loaded Empty	Trains	Stops	Run (in Hr)	Halt (in Hr)	Time (in Hr)	Distance (in Km)	Average Speed (in Kmph)	Average Speed Without halt (in Kmph)	
1	2	3	4	5	6	7	8	9	10	
BPT	E	13	229	253.45	222.82	476.27	6061.17	12.73	23.91	
BR	E	62	563	163.87	247.76	411.63	4496.12	10.92	27.44	
CPT	E	29	159	153.76	89.27	243.03	2425	9.98	15.77	
CPT	L	26	726	929.97	1225.36	2155.33	15936.78	7.39	17.14	
CR	E	2191	52253	20693.41	26884.88	47578.29	698368.35	14.68	33.75	
CR	L	2010	88394	35176.74	46471.73	81648.47	1115249.56	13.65	31.69	
ECR	E	3525	95498	35486.10	42544.93	78031.03	1075052.24	13.78	30.29	
ECR	L	3073	112534	63181.17	76239.59	139420.76	1637207.86	11.74	25.91	
ECoR	E	3741	38853	22239.35	30518.05	52757.40	591589.46	11.21	26.60	
ECoR	L	4487	151465	96877.74	143733.91	240611.65	2271253.53	9.44	23.44	
ER	E	2662	36945	23642.90	23691.16	47334.06	503547.84	10.63	21.29	
ER	L	1666	54494	29284.66	48119.41	77404.07	690961.62	8.93	23.59	
KR	E	100	1463	897.60	456.75	1354.35	34094.98	25.17	37.98	

Annexure 3.20 Detention to wagons at en-route stations (Reference Paragraph 3.1.8.33)									
Zone	Loaded Empty	Trains	Stops	Run (in Hr)	Halt (in Hr)	Time (in Hr)	Distance (in Km)	Average Speed (in Kmph)	Average Speed Without halt (in Kmph)
1	2	3	4	5	6	7	8	9	10
KR	L	49	2742	1460.26	1843.58	3303.84	49086.55	14.86	33.61
NCR	E	1143	40958	21182.58	27215.54	48398.12	643564.86	13.30	30.38
NCR	L	586	23165	12991.05	15207.70	28198.75	381503.89	13.53	29.37
NER	E	569	30359	11195.13	14040.52	25235.65	370299.11	14.67	33.08
NER	L	143	7692	3396.58	4186.14	7582.72	105019.96	13.85	30.92
NEFR	E	1218	49053	20852.82	24881.57	45734.39	649021.39	14.19	31.12
NEFR	L	258	9919	4778.25	6406.86	11185.11	138034.55	12.34	28.89
NR	E	2640	97401	51855.02	43875.97	95730.99	1573911.67	16.44	30.35
NR	L	2045	122928	62357.40	51764.67	114122.07	1967114.19	17.23	31.54
NWR	E	646	31988	15748.30	15990.56	31738.86	515303.13	16.24	32.72
NWR	L	699	41035	15851.11	21470.27	37321.38	487844.96	13.07	30.78
SCR	E	2512	38225	17276.05	22386.54	39662.59	573315.5	14.45	33.19
SCR	L	2580	103181	46356.19	83732.12	130088.31	1375318.9	10.57	29.67
SER	E	4461	43330	29115.77	24266.31	53382.08	872722.48	16.35	29.97
SER	L	3874	120380	73280.34	92000.90	165281.24	1654555.34	10.01	22.58
SECR	E	3734	36568	29309.67	34763.97	64073.64	753219.54	11.75	25.69
SECR	L	3830	120686	95526.20	82970.62	178496.82	2368069.51	13.27	24.79
SR	E	1905	36174	11029.03	17838.26	28867.29	409824.48	14.20	37.16
SR	L	1291	43922	13923.24	18699.21	32622.45	486241.14	14.91	34.92

Annexure 3.20 Detention to wagons at en-route stations (Reference Paragraph 3.1.8.33)									
Zone	Loaded Empty	Trains	Stops	Run (in Hr)	Halt (in Hr)	Time (in Hr)	Distance (in Km)	Average Speed (in Kmph)	Average Speed Without halt (in Kmph)
1	2	3	4	5	6	7	8	9	10
SWR	E	1387	39610	16816.65	19503.11	36319.76	541624.66	14.91	32.21
SWR	L	890	35933	15843.44	18889.97	34733.41	457278.85	13.17	28.86
WCR	E	1880	41227	24513.11	19620.86	44133.97	765043.37	17.33	31.20
WCR	L	1120	45139	26191.88	33254.10	59445.98	720327.8	12.12	27.50
WR	E	2317	46931	15145.12	26401.87	41546.99	534974.4	12.88	35.32
WR	L	2539	213170	67087.11	72724.24	139811.35	2306833.32	16.50	34.38
IR	E	36735	757787	367569.69	415440.70	783010.39	11118459.75	14.20	30.25
IR	L	31166	1297505	664493.33	818940.38	1483433.71	18227838.31	12.29	27.43
IR-TOTAL		67901	2055292	1032063.02	1234381.08	2266444.10	29346298.06	12.95	28.43

Annexure 3.21 En-route detention to wagons in five years (2016-17 to 2020-21) (Reference Paragraph 3.1.8.33)									
Zone	Year	Loads	Distance	Halt	Run	Time	Average Speed	Average Speed Without Halt	
1	2	3	4	5	6	7	8	9	
BPT	2016-2017	286	176481.54	6245.82	6605.95	12851.77	13.73	26.72	
BPT	2017-2018	228	130590.84	3587.62	4883.58	8471.20	15.42	26.74	
BPT	2018-2019	184	75377.35	1316.38	2811.20	4127.58	18.26	26.81	
BPT	2019-2020	159	51602.48	4005.40	2124.00	6129.40	8.42	24.29	
BPT	2020-2021	239	104099.77	4386.18	2286.12	6672.3	15.6	45.54	
BR	2016-2017	764	59479.77	9660.13	2467.15	12127.28	4.90	24.11	
BR	2017-2018	917	65824.49	10357.00	2946.10	13303.10	4.95	22.34	
BR	2018-2019	843	63845.37	9831.75	2884.13	12715.88	5.02	22.14	
BR	2019-2020	604	46145.39	4947.93	2030.10	6978.03	6.61	22.73	
BR	2020-2021	1171	239927.51	20540.27	4745.2	25285.47	9.49	50.56	
CPT	2016-2017	654	191422.28	13105.15	10113.95	23219.10	8.24	18.93	
CPT	2017-2018	719	216582.05	15798.97	11955.25	27754.22	7.80	18.12	
CPT	2018-2019	979	331072.62	26113.65	18133.35	44247.00	7.48	18.26	
CPT	2019-2020	786	217867.29	15893.18	12330.92	28224.10	7.72	17.67	
CPT	2020-2021	703	225863.11	14379.83	5333.57	19713.4	11.46	42.35	
CR	2016-2017	44541	23141374.44	934098.55	684065.16	1618163.71	14.30	33.83	
CR	2017-2018	47378	24117058.35	1093338.80	704814.80	1798153.59	13.41	34.22	
CR	2018-2019	48924	24401333.94	1093005.20	730311.08	1823316.27	13.38	33.41	

Annexure 3.21 En-route detention to wagons in five years (2016-17 to 2020-21) (Reference Paragraph 3.1.8.33)									
Zone	Year	Loads	Distance	Halt	Run	Time	Average Speed	Average Speed Without Halt	
1	2	3	4	5	6	7	8	9	
CR	2019-2020	44091	21594026.26	1055394.12	642509.94	1697904.06	12.72	33.61	
CR	2020-2021	60675	29676182.61	1336324.32	615123.44	1951447.76	15.21	48.24	
ECR	2016-2017	70925	28549813.73	1502115.78	1023550.56	2525666.34	11.30	27.89	
ECR	2017-2018	73959	31519133.07	1502437.71	1137442.96	2639880.67	11.94	27.71	
ECR	2018-2019	78988	35123032.73	1651592.39	1342213.99	2993806.39	11.73	26.17	
ECR	2019-2020	75436	32811639.18	1498825.23	1209945.84	2708771.07	12.11	27.12	
ECR	2020-2021	103196	41214848.78	1948044.46	910405.87	2858450.34	14.42	45.27	
ECoR	2016-2017	90753	33363025.47	1975383.48	1283353.04	3258736.52	10.24	26.00	
ECoR	2017-2018	92584	34748722.81	2059381.43	1348933.65	3408315.08	10.20	25.76	
ECoR	2018-2019	95835	34595025.87	1888941.45	1342886.73	3231828.18	10.70	25.76	
ECoR	2019-2020	89774	33633074.72	2208237.21	1363291.87	3571529.08	9.42	24.67	
ECoR	2020-2021	120159	46958760.73	2707566.36	1153667.29	3861233.65	12.16	40.7	
ER	2016-2017	51125	15021855.37	1108840.30	635080.51	1743920.81	8.61	23.65	
ER	2017-2018	50694	15231334.60	1074126.31	646524.53	1720650.85	8.85	23.56	
ER	2018-2019	50810	15180304.98	1082513.56	649625.63	1732139.20	8.76	23.37	
ER	2019-2020	45324	13320283.77	979254.62	573141.78	1552396.40	8.58	23.24	
ER	2020-2021	65766	17661872.31	1483477.23	380273.58	1863750.81	9.48	46.45	
KR	2016-2017	2898	1317341.32	34583.32	39220.72	73804.03	17.85	33.59	
KR	2017-2018	2559	1290790.11	35843.67	32797.00	68640.67	18.81	39.36	

Annexure 3.21 En-route detention to wagons in five years (2016-17 to 2020-21) (Reference Paragraph 3.1.8.33)									
Zone	Year	Loads	Distance	Halt	Run	Time	Average Speed	Average Speed Without Halt	
1	2	3	4	5	6	7	8	9	
KR	2018-2019	1825	875683.52	59785.77	23573.17	83358.93	10.50	37.15	
KR	2019-2020	1165	632727.66	25337.32	18001.60	43338.92	14.60	35.15	
KR	2020-2021	2387	1417271.91	60863.48	27795.37	88658.85	15.99	50.99	
NCR	2016-2017	20740	13860184.24	758901.55	450833.66	1209735.21	11.46	30.74	
NCR	2017-2018	22310	14779256.96	713041.75	491094.81	1204136.56	12.27	30.09	
NCR	2018-2019	22758	15133251.62	687861.98	530831.41	1218693.40	12.42	28.51	
NCR	2019-2020	21499	13072604.64	605771.93	426389.83	1032161.76	12.67	30.66	
NCR	2020-2021	26457	15154120.39	887219.6	335865.2	1223084.8	12.39	45.12	
NER	2016-2017	8946	5821573.42	339195.77	193777.17	532972.93	10.92	30.04	
NER	2017-2018	8658	6043147.78	276844.00	193550.88	470394.88	12.85	31.22	
NER	2018-2019	8533	6101066.32	289847.60	200577.62	490425.21	12.44	30.42	
NER	2019-2020	8134	5862967.25	271411.07	187121.05	458532.11	12.79	31.33	
NER	2020-2021	12487	8237604.5	429128.7	174024.43	603153.13	13.66	47.34	
NEFR	2016-2017	17500	10593904.44	485799.18	347923.38	833722.56	12.71	30.45	
NEFR	2017-2018	17702	10893571.49	508138.43	348365.16	856503.59	12.72	31.27	
NEFR	2018-2019	18355	10778290.77	552432.78	344996.94	897429.72	12.01	31.24	
NEFR	2019-2020	17554	11453664.97	622012.10	373945.61	995957.71	11.50	30.63	
NEFR	2020-2021	25260	16614437.61	696409.62	351340.4	1047750.01	15.86	47.29	
NR	2016-2017	57067	51495896.74	1733484.59	1630700.54	3364185.14	15.31	31.58	

Annexure 3.21 En-route detention to wagons in five years (2016-17 to 2020-21) (Reference Paragraph 3.1.8.33)									
Zone	Year	Loads	Distance	Halt	Run	Time	Average Speed	Average Speed Without Halt	
1	2	3	4	5	6	7	8	9	
NR	2017-2018	58126	51397165.66	1810032.09	1620303.51	3430335.60	14.98	31.72	
NR	2018-2019	58740	53457323.00	1749924.96	1736307.44	3486232.40	15.33	30.79	
NR	2019-2020	55856	45479607.81	1550355.26	1428526.92	2978882.18	15.27	31.84	
NR	2020-2021	70326	56729860.79	2333293.25	1214789.4	3548082.65	15.99	46.7	
NWR	2016-2017	16612	12472346.15	612440.26	399023.08	1011463.35	12.33	31.26	
NWR	2017-2018	18356	14203433.63	763567.71	456425.11	1219992.83	11.64	31.12	
NWR	2018-2019	19775	15850657.86	687266.33	510669.30	1197935.63	13.23	31.04	
NWR	2019-2020	16200	12669259.03	559633.93	392384.33	952018.26	13.31	32.29	
NWR	2020-2021	22413	15386768.92	851307.78	335206.75	1186514.53	12.97	45.9	
PR	2016-2017	55	6853.05	184.98	67.43	252.42	27.15	101.63	
PR	2017-2018	80	9983.59	70.37	106.98	177.35	56.29	93.32	
PR	2018-2019	47	6074.74	61.72	63.90	125.62	48.36	95.07	
PR	2019-2020	25	3102.54	98.40	34.87	133.27	23.28	88.97	
SCR	2016-2017	59460	23800802.31	987667.63	780021.97	1767689.60	13.46	30.51	
SCR	2017-2018	58636	24639601.60	1070800.90	771086.82	1841887.71	13.38	31.95	
SCR	2018-2019	67638	28071703.47	1218239.08	866241.05	2084480.13	13.47	32.41	
SCR	2019-2020	58035	24550763.31	1224098.13	747847.03	1971945.17	12.45	32.83	
SCR	2020-2021	69858	31023633.18	1637292.65	655722.23	2293014.88	13.53	47.31	
SER	2016-2017	87168	25943338.97	1417316.08	1036197.72	2453513.79	10.57	25.04	

Annexure 3.21 En-route detention to wagons in five years (2016-17 to 2020-21) (Reference Paragraph 3.1.8.33)									
Zone	Year	Loads	Distance	Halt	Run	Time	Average Speed	Average Speed Without Halt	
1	2	3	4	5	6	7	8	9	
SER	2017-2018	90183	28022041.59	1505477.43	1068595.25	2574072.68	10.89	26.22	
SER	2018-2019	97168	29979352.95	1472241.68	1107246.82	2579488.50	11.62	27.08	
SER	2019-2020	91717	29742127.77	1567974.92	1161636.89	2729611.80	10.90	25.60	
SER	2020-2021	112570	40423040.24	2143341.07	992456.82	3135797.88	12.89	40.73	
SECR	2016-2017	82685	38675039.26	1674837.28	1425756.22	3100593.50	12.47	27.13	
SECR	2017-2018	83009	48733368.46	1819570.21	1576200.57	3395770.79	14.35	30.92	
SECR	2018-2019	88053	51970130.00	1834037.40	1714944.99	3548982.39	14.64	30.30	
SECR	2019-2020	80980	44006703.59	1566734.37	1507367.60	3074101.97	14.32	29.19	
SECR	2020-2021	103395	40148473.03	2086634.63	991194.1	3077828.73	13.04	40.51	
SR	2016-2017	36635	11759120.72	378655.45	333905.91	712561.36	16.50	35.22	
SR	2017-2018	38539	12230581.93	459445.60	339332.58	798778.18	15.31	36.04	
SR	2018-2019	40841	13106673.58	531025.02	369251.31	900276.33	14.56	35.50	
SR	2019-2020	37355	11188957.91	595556.82	314074.71	909631.53	12.30	35.63	
SR	2020-2021	49476	14915096.94	538275.72	310397.51	848673.23	17.57	48.05	
SWR	2016-2017	31425	13632927.35	497822.07	459494.33	957316.39	14.24	29.67	
SWR	2017-2018	32171	13794806.11	624658.60	437349.75	1062008.34	12.99	31.54	
SWR	2018-2019	30847	14786386.88	621715.90	466652.83	1088368.73	13.59	31.69	
SWR	2019-2020	27052	12263255.62	599651.08	397444.53	997095.61	12.30	30.86	
SWR	2020-2021	37334	16133917.2	1018240.07	337610.33	1355850.4	11.9	47.79	

Annexure 3.21									
En-route detention to wagons in five years (2016-17 to 2020-21) (Reference Paragraph 3.1.8.33)									
Zone	Year	Loads	Distance	Halt	Run	Time	Average Speed	Average Speed Without Halt	
1	2	3	4	5	6	7	8	9	
WCR	2016-2017	31326	1656977.84	821223.13	566791.48	1388014.61	11.94	29.23	
WCR	2017-2018	32373	15980056.40	728703.30	561842.41	1290545.71	12.38	28.44	
WCR	2018-2019	32819	20058938.24	776312.30	674701.53	1451013.83	13.82	29.73	
WCR	2019-2020	32315	17254825.20	673374.97	589026.86	1262401.83	13.67	29.29	
WCR	2020-2021	40001	22997218.36	1237763.05	477640.48	1715403.53	13.41	48.15	
WR	2016-2017	47671	34054622.06	1205635.24	996322.68	2201957.92	15.47	34.18	
WR	2017-2018	50910	35260861.21	1422699.98	1035074.43	2457774.40	14.35	34.07	
WR	2018-2019	56099	37763113.35	1583920.41	1135658.08	2719578.49	13.89	33.25	
WR	2019-2020	53505	35119080.91	1500454.36	1035917.02	2536371.39	13.85	33.90	
WR	2020-2021	73772	44686582.76	1850103.7	1000782.24	2850885.94	15.67	44.65	
Total	2016-2017	759236	360507380.47	16497195.74	12305272.60	28802468.34	12.52	29.30	
Total	2017-2018	780091	383307912.73	17497921.87	12789626.14	30287548.01	12.66	29.97	
Total	2018-2019	820061	407708639.16	17817987.31	13770582.51	31588569.81	12.91	29.61	
Total	2019-2020	757566	364974287.30	17129022.34	12385093.31	29514115.65	12.37	29.47	
Total	2020-2021	997645	459949580.7	23284592	10276660.3	33561252.29	13.7	44.76	
Grand Total		4114599	1976447800	92226719	61527235	153753954	12.85	32.12	

Annexure 3.22		
Comparison of average speed of Goods trains for the period from 2016-17 to 2020-21		
(Reference Paragraph 3.1.8.35)		
Zone	Average speed (kmph)	No. of trains
1	2	3
	Between 1 and 20	735(67.06%)
BPT	More than 20 and up to 40	326(29.74%)
	More than 40 and upto 100	35(3.19%)
	Between 1 and 20	3859(89.76%)
BR	More than 20 and up to 40	325(7.56%)
	More than 40 and upto 100	115(2.68%)
	Between 1 and 20	2310(60.13%)
CPT	More than 20 and up to 40	783(20.39%)
	More than 40 and upto 100	748(19.47%)
	Between 1 and 20	148284(60.37%)
CR	More than 20 and up to 40	77567(31.58%)
	More than 40 and upto 100	19758(8.04%)
	Between 1 and 20	250902(62.33%)
ECR	More than 20 and up to 40	73305(18.21%)
	More than 40 and upto 100	78297(19.45%)
	Between 1 and 20	375981(76.87%)
ECoR	More than 20 and up to 40	62569(12.79%)
	More than 40 and upto 100	50555(10.34%)

Annexure 3.22		
Comparison of average speed of Goods trains for the period from 2016-17 to 2020-21 (Reference Paragraph 3.1.8.35)		
Zone	Average speed (kmph)	No. of trains
1	2	3
ER	Between 1 and 20	202567(76.82%)
	More than 20 and up to 40	23841(9.04%)
	More than 40 and upto 100	37311(14.15%)
KR	Between 1 and 20	3583(33.07%)
	More than 20 and up to 40	5568(51.39%)
	More than 40 and upto 100	1683(15.53%)
NCR	Between 1 and 20	74558(65.53%)
	More than 20 and up to 40	32023(28.15%)
	More than 40 and upto 100	7183(6.31%)
NER	Between 1 and 20	34075(72.87%)
	More than 20 and up to 40	9352(20%)
	More than 40 and upto 100	3331(7.12%)
NEFR	Between 1 and 20	55642(57.74%)
	More than 20 and up to 40	33701(34.97%)
	More than 40 and upto 100	7028(7.29%)
NR	Between 1 and 20	163570(54.5%)
	More than 20 and up to 40	119418(39.79%)
	More than 40 and upto 100	17127(5.71%)

Annexure 3.22		
Comparison of average speed of Goods trains for the period from 2016-17 to 2020-21 (Reference Paragraph 3.1.8.35)		
Zone	Average speed (kmph)	No. of trains
1	2	3
NWR	Between 1 and 20	58072(62.21%)
	More than 20 and up to 40	30121(32.26%)
	More than 40 and upto 100	5163(5.53%)
PR	Between 1 and 20	18(8.69%)
	More than 20 and up to 40	36(17.39%)
	More than 40 and upto 100	153(73.91%)
SCR	Between 1 and 20	190369(60.7%)
	More than 20 and up to 40	75494(24.07%)
	More than 40 and upto 100	47764(15.23%)
SER	Between 1 and 20	332988(69.55%)
	More than 20 and up to 40	101652(21.23%)
	More than 40 and upto 100	44166(9.22%)
SECR	Between 1 and 20	312253(71.28%)
	More than 20 and up to 40	81719(18.65%)
	More than 40 and upto 100	44150(10.08%)
SR	Between 1 and 20	95935(47.3%)
	More than 20 and up to 40	76198(37.56%)
	More than 40 and upto 100	30713(15.14%)

Annexure 3.22 Comparison of average speed of Goods trains for the period from 2016-17 to 2020-21 (Reference Paragraph 3.1.8.35)		
Zone	Average speed (kmph)	No. of trains
1	2	3
SWR	Between 1 and 20	108209(68.13%)
	More than 20 and up to 40	39870(25.1%)
	More than 40 and upto 100	10750(6.77%)
WCR	Between 1 and 20	107686(63.79%)
	More than 20 and up to 40	49012(29.03%)
	More than 40 and upto 100	12136(7.19%)
WR	Between 1 and 20	158385(56.18%)
	More than 20 and up to 40	106492(37.77%)
	More than 40 and upto 100	17080(6.06%)
IR	Between 1 and 20	2679981(65.14%)
	More than 20 and up to 40	999372(24.29%)
	More than 40 and up to 100	435246(10.58%)

Annexure 3.23 Zone-wise number of Loads with different Speed slabs (Reference Paragraph 3.1.8.35)												
Zone	1_ <=5		2_ <=10		3_ <=25		4_ <=40		5_ >40		Total of Load_ID	
	Count	%age	Count	%age	Count	%age	Count	%age	Count	%age	Total	%age
1	2	8	3	9	4	10	5	11	6	12	7	13
BPT	2	15.38	4	30.77	6	46.15	1	7.69		0.00	13	100.00
BR	1	1.61	23	37.10	33	53.23	5	8.06		0.00	62	100.00
CPT	5	9.09	15	27.27	13	23.64	12	21.82	10	18.18	55	100.00
CR	163	3.88	717	17.07	2504	59.60	536	12.76	281	6.69	4201	100.00
ECR	666	10.09	1292	19.58	3219	48.79	449	6.81	972	14.73	6598	100.00
ECoR	1059	12.87	2254	27.39	3493	42.45	496	6.03	926	11.25	8228	100.00
ER	558	12.89	1259	29.09	1787	41.29	173	4.00	551	12.73	4328	100.00
KR		0.00	4	2.68	76	51.01	53	35.57	16	10.74	149	100.00
NCR	136	7.87	296	17.12	1027	59.40	179	10.35	91	5.26	1729	100.00
NER	28	3.93	105	14.75	495	69.52	55	7.72	29	4.07	712	100.00
NEFR	154	10.43	135	9.15	906	61.38	204	13.82	77	5.22	1476	100.00
NR	171	3.65	398	8.50	2924	62.41	948	20.23	244	5.21	4685	100.00
NWR	125	9.29	176	13.09	773	57.47	220	16.36	51	3.79	1345	100.00
SCR	303	5.95	1042	20.46	2466	48.43	399	7.84	882	17.32	5092	100.00
SER	739	8.87	1860	22.32	4113	49.35	604	7.25	1019	12.23	8335	100.00
SECR	657	8.69	1559	20.61	4166	55.08	473	6.25	709	9.37	7564	100.00
SR	420	13.14	318	9.95	1612	50.44	464	14.52	382	11.95	3196	100.00
SWR	72	3.16	220	9.66	1726	75.80	205	9.00	54	2.37	2277	100.00
WCR	108	3.60	377	12.57	1790	59.67	444	14.80	281	9.37	3000	100.00
WR	351	7.23	403	8.30	3150	64.87	634	13.06	318	6.55	4856	100.00
Total	5718	8.42	12457	18.35	36279	53.43	6554	9.65	6893	10.15	67901	100.00

Annexure 3.24 Statement showing instances of locomotives remained idle for want of imported spares for the period from 2016-17 to 2021-2022 [Reference Paragraph 3.2 (3)]							
S. No.	Year	Zonal Railway/PU	Locomotive Type and Number	Specification of imported spare	Whether indent placed through Own/DLW	Period for which locomotive remained idle (in days)	Loss incurred due to idling of locomotive (₹)
1	2	3	4	5	6	7	8
1	2016-17	SWR	WDP4B & 40016	Pad assembly	OWN	5	1512000
2	2016-17	SWR	WDG4 & 12042	lateral thrust. Part	OWN	24	7257600
3	2016-17	SWR	WDG4 & 12120	No.40074617.	OWN	7	2116800
4	2016-17	SWR	WDP4 & 20022	Pad assembly lateral thrust. Part No.40074617, Drive Assembly. Auxiliary generator to EMD Part No.8460738	OWN	10	3024000
5	2016-17	SWR	WDG4 & 12136	Pad assembly lateral thrust. Part No.40074617.	OWN	8	2419200

Annexure 3.24 Statement showing instances of locomotives remained idle for want of imported spares for the period from 2016-17 to 2021-2022 [Reference Paragraph 3.2 (3)]							
S. No.	Year	Zonal Railway/PU	Locomotive Type and Number	Specification of imported spare	Whether indent placed through Own/DLW	Period for which locomotive remained idle (in days)	Loss incurred due to idling of locomotive (₹)
1	2	3	4	5	6	7	8
6	2016-17	SWR	WDG4 & 12140	Pad assembly lateral thrust. Part No.40074617.	OWN	16	4838400
7	2016-17	SWR	WDG4& 12042	Drive Assembly. Auxiliary generator to EMD Part No.8460738	OWN	24	7257600
8	2017-18	SWR	WDP4 & 20056	Bearing Connecting Rod Upper Sleeve to EMD Part No. 8354118	Own	27	8689680
9	2017-18	SWR	WDP4B & 40066		Own	1	321840
10	2019-20	SWR	WDG4 & 12647		Own	64	21642240

Annexure 3.24 Statement showing instances of locomotives remained idle for want of imported spares for the period from 2016-17 to 2021-2022 [Reference Paragraph 3.2 (3)]							
S. No.	Year	Zonal Railway/PU	Locomotive Type and Number	Specification of imported spare	Whether indent placed through Own/ DLW	Period for which locomotive remained idle (in days)	Loss incurred due to idling of locomotive (₹)
1	2	3	4	5	6	7	8
11	2019-20	SWR	WDP4D & 40278	Bearing	Own	54	18260640
12	2019-20	SWR	WDP4D & 40356	Connecting Rod	Own	11	3719760
13	2019-20	SWR	WDP4D & 40362	Upper Sleeve to EMD Part No. 8354118	Own	7	2367120

Annexure 3.24 Statement showing instances of locomotives remained idle for want of imported spares for the period from 2016-17 to 2021-2022 [Reference Paragraph 3.2 (3)]								
S. No.	Year	Zonal Railway/PU	Locomotive Type and Number	Specification of imported spare	Whether indented placed through Own/DLW	Period for which locomotive remained idle (in days)	Loss incurred due to idling of locomotive (₹)	
1	2	3	4	5	6	7	8	
14	2019-20	SWR	WDP4D & 40465	SCU Module to	OWN	32	All being Passenger Locos and Passenger train services were suspended during Covid-19 pandemic period there was no demand for Locos. Therefore Loss cannot be quantified.	
15	2019-20	SWR	WDP4D & 40466	EMD Part No	OWN	511		
16	2020-21	SWR	WDP4D & 40456	40199438	OWN	505		
17	2019-20	SWR	WDP4 & 20057	MUI- Repair Kit	BLW	761		
18	2020-21	SWR	WDP4D & 40534	to Interstate	BLW	730		
19	2020-21	SWR	WDP4D & 40551	Diesel (IDS) Part	BLW	669		
20	2020-21	SWR	WDP4D & 40535	No. 40086324 for	BLW	608		
21	2020-21	SWR	WDP4D & 40306	Ecotip super	BLW	455		
22	2020-21	SWR	WDP4D & 40385	stack Fuel	BLW	455		
23	2020-21	SWR	WDP4D & 40520	Injector for EMD	BLW	424		
24	2020-21	SWR	WDP4D & 40400	Locomotives to	BLW	396		
25	2020-21	SWR	WDP4D & 40435	PL No. 16040247	BLW	396		
26	2021-22	SWR	WDP4D & 40409		BLW	366		
27	2021-22	SWR	WDP4D & 40531		BLW	335		
Total								₹ 83426880



ABBREVIATIONS



Abbreviations

Abbreviation	Full Form
<i>ABT</i>	Availability Based Tariff
<i>ADI</i>	Ahmedabad Jn.
<i>AE</i>	Actual Earnings
<i>AEP</i>	Annual Earning Potential
<i>AFSPA</i>	Armed Forces (Special Powers) Act
<i>AFTO</i>	Automobiles Freight Train Operator Scheme
<i>All</i>	Ajmer Jn.
<i>ATM</i>	Automated Teller Machine
<i>ATN</i>	Action Taken Note
<i>AXENs</i>	Assistant Executive Engineers
<i>BCM</i>	Ballast Cleaning Machine
<i>BE</i>	Budget Estimate
<i>BG</i>	Broad Gauge
<i>BLT</i>	Ballastless Track
<i>BLW</i>	Banaras Locomotive Works
<i>BMBS</i>	Bogie Mounted Air Brake System
<i>BOT</i>	Build-Operate-Transfer
<i>BPL</i>	Bhopal Jn.
<i>BPCs</i>	Brake Power Certificates
<i>BSB</i>	Varanasi Jn.
<i>BSP</i>	Bilaspur Jn.
<i>BZA</i>	Vijayawada Jn.
<i>C</i>	Cancelled
<i>CA</i>	Contract Agreement
<i>CBC</i>	Centre Buffer Coupler
<i>CAO/Con</i>	Chief Administrative Officer/Construction
<i>CCRS</i>	Chief Commissioner of Railway Safety
<i>CCTV</i>	Closed Circuit Television
<i>CCMs</i>	Chief Commercial Managers
<i>CEO</i>	Chief Executive Officer
<i>CE</i>	Chief Engineer
<i>CFTM</i>	Chief Freight Transport Manager
<i>CKP</i>	Chakradharpur
<i>CLW</i>	Chittaranjan Locomotive Works
<i>CMS</i>	Crew Management System
<i>COA</i>	Control Office Application
<i>CoD</i>	Content on Demand
<i>COS</i>	Change of Scope

Abbreviation	Full Form
CR	Central Railway
CRIS	Centre for Railway Information System
CSTM	Chhatrapati Shivaji Maharaj Terminus, Mumbai
CTRB	Cartridge Taper roller bearings
C&W	Carriage & Wagon
DC	Deputy Commissioner
DL	Double Line
DLI	Delhi
DLW	Diesel Locomotive Works
DMRC	Delhi Metro Rail Corporation
DMV	Dimapur
DNR	Danapur
DRF	Depreciation Reserve Fund
DRMs	Divisional Railway Managers
Dy. CE	Deputy Chief Engineer
EBR- IF	Extra Budgetary Resources- Institutional Financing
ECR	East Central Railway
ECoR	East Coast Railway
EMD	Earnest Money Deposit
EMU	Electrical Multiple Unit
ER	Eastern Railway
E&M	Electrical and Mechanical
E&Y	Ernst and Young
F	Fulfilled
FA & CAO	Financial Adviser & Chief Accounts Officer
FCI	Food Corporation of India
FIFO	First In First Out
FLS	Final Location Survey
FOBs	Foot Over Bridges
FOIS	Freight Operations Information System
GBS	Gross Budgetary Support
GC	Gauge Conversion
GCC	General Conditions of Contract
GM	General Manager
GPWIS	General-Purpose Wagon Investment Scheme
HHP	High Horse Power
HWH	Howrah Jn.
IPS	Integrated Power Supply
IPBTL	IRCON Phalodi-Bikaner Tollway Limited

Abbreviation	Full Form
<i>IR</i>	Indian Railways
<i>IRCON</i>	IRCON International Limited
<i>IRCTC</i>	Indian Railway Catering and Tourism Corporation
<i>IRFC</i>	Indian Railway Finance Corporation Limited
<i>IRICN</i>	Indian Railways inter connected communication network
<i>IRSDC</i>	Indian Railway Station Development Corporation
<i>IRSOD</i>	Indian Railway Schedule of Dimensions
<i>ISGTL</i>	IRCON Shivpuri Guna Tollway Limited
<i>ISTPL</i>	IRCON Soma Tollway Private Limited
<i>IT</i>	Information and Technology
<i>JBP</i>	Jabalpur
<i>JHS</i>	Jhansi
<i>JP</i>	Jaipur
<i>JRNA</i>	Jirania
<i>JPO</i>	Joint Procedure Order
<i>KGP</i>	Kharagpur Jn.
<i>KIR</i>	Katihar Jn.
<i>KJM</i>	Krishnarajapuram
<i>KUR</i>	Khurda Road Jn.
<i>LCs</i>	Level Crossings
<i>LD</i>	Liquidated Damages
<i>LJN</i>	Lucknow Jn.
<i>LKO</i>	Luknow
<i>LMG</i>	Lumding Jn.
<i>LoA</i>	Letter of Acceptance
<i>LTT</i>	Lokmanyatilak Terminus
<i>LWIS</i>	Liberalized Wagon Investment Scheme
<i>L&A</i>	Land and Amenities
<i>MAGP</i>	Minimum Annual Guaranteed Payment
<i>MAS</i>	MGR Chennai Central
<i>MARS</i>	Marketing and Advertising Risk Services
<i>MFC</i>	Multi-Functional Complex
<i>MMCT</i>	Mumbai Central
<i>MoR</i>	Ministry of Railways
<i>MR</i>	Metro Railway
<i>MT</i>	Metric Tonnes
<i>MTDC</i>	Maharashtra Tourism Development Corporation
<i>NAV</i>	Not Available

Abbreviation	Full Form
<i>NBQ-GLPT-KYQ</i>	New Bongaigaon-Goalpara-Kamakhya
<i>NCO</i>	Neutral Control Office
<i>NCR</i>	North Central Railway
<i>NER</i>	North Eastern Railway
<i>NEFR</i>	Northeast Frontier Railway
<i>NFR</i>	Non-Fare Revenue
<i>NFRCO</i>	Northeast Frontier Railway Construction Organization
<i>NHAI</i>	National Highway Authority of India
<i>NIL</i>	Nilambur Road
<i>NINFRIS</i>	New, Innovative NFR Ideas Scheme
<i>NGP</i>	Nagpur
<i>NJP</i>	New Jalpaiguri
<i>NPV</i>	Net Present Value
<i>NR</i>	Northern Railway
<i>NRSR</i>	Numaligarh Refinery Oil Siding
<i>NS</i>	Non-Scheduled
<i>NTKM</i>	Net Tonne Kilometers
<i>NTXR</i>	Neutral Train Examiner
<i>NWR</i>	North Western Railway
<i>OFC</i>	Optical Fibre Cable
<i>OHE</i>	Overhead Equipment
<i>OOH</i>	Out of Home Advertising
<i>OYWS</i>	Own Your Wagon Scheme
<i>O&BD</i>	Operations and Business Development
<i>PAC</i>	Public Accounts Committee
<i>PCE</i>	Principal Chief Engineer
<i>PCCM</i>	Principal Chief Commercial Manager
<i>PCME</i>	Principal Chief Mechanical Engineer
<i>PCOM</i>	Principal Chief Operations Manager
<i>PCU</i>	Passenger Car Unit
<i>PMMEA</i>	Professional Media Market Evaluation Agency
<i>POH</i>	Periodical Overhauling
<i>PRS</i>	Passenger Reservation System
<i>PPP</i>	Public-Private Partnership
<i>PSUs</i>	Public Sector Undertakings
<i>PRYJ</i>	Prayagraj
<i>PWD</i>	Public Works Department
<i>RAS</i>	Rake Allotment and Allocation system
<i>RB</i>	Railway Board

Abbreviation	Full Form
<i>RCF</i>	Rail Coach Factory, Kapurthala
<i>RDN</i>	Railway Display Network
<i>RDSO</i>	Research, Design and Standards Organization
<i>RE</i>	Revised Estimate
<i>RETS</i>	Reconnaissance Engineering-cum-Traffic Survey
<i>RFP</i>	Request for Proposals
<i>RITES</i>	Rail India Technical and Economic Service
<i>RLDA</i>	Rail Land Development Authority
<i>RMS</i>	Rail Mail Services
<i>RNI</i>	Rangapani
<i>ROBs</i>	Road Over Bridges
<i>ROCS</i>	Rigid Overhead Conductor Rail System
<i>ROH</i>	Routine Overhaul
<i>RoR</i>	Rate of Return
<i>RPU</i> s	Railway Production Units
<i>RR</i> s	Retiring Rooms
<i>RSP</i>	Rolling Stock Programme
<i>RUB</i> s	Road Under Bridges
<i>RWF</i>	Rail Wheel Factory
<i>S&T</i>	Signal and Telecommunication
<i>SBC</i>	KSR Bengaluru
<i>SBP</i>	Sambalpur
<i>SC</i>	Secunderabad
<i>SCA</i>	Subsidiary Contract Agreement
<i>SCR</i>	South Central Railway
<i>SDAH</i>	Sealdah
<i>SER</i>	South Eastern Railway
<i>SECR</i>	South East Central Railway
<i>SFTO</i>	Special Freight Train Operator
<i>SGTY</i>	Sankrail Goods Terminal Yard
<i>SOP</i>	Standard Operating Procedure
<i>SOD</i>	Schedule of Dimensions
<i>SPV</i>	Special Purpose Vehicles
<i>SR</i>	Southern Railway
<i>Sr. DCM</i>	Senior Divisional Commercial Manager
<i>Sr. DME</i>	Senior Divisional Mechanical Engineer
<i>Sr. DOM</i>	Senior Divisional Operations Manager
<i>Sr. DSTE</i>	Senior Divisional Signal and Telecom Engineer
<i>SWR</i>	South Western Railway

Abbreviation	Full Form
S&T	Signal & Telecommunication
TL	Triple Line
TMS	Terminal Management System
ToR	Terms of Reference
TVC	Trivandrum Central
TXR	Train Examination
T&C	Tourism and Catering
UBL	Hubballi Jn.
UMB	Ambala Cantt Jn.
UMSG	Umred Siding
UPI	Unified Payments Interface
UTS	Unreserved Ticketing System
WACC	Weighted Average Cost of Capital
WACS	Malabar Cement Company Siding, Walayar
WAT	Waltair
WCR	West Central Railway
WLC	Way Leave Charges
WLS	Wagon Leasing Scheme
WOS	Wholly Owned Subsidiary
WR	Western Railway
WTR	Wagon Turn Round
XENs	Executive Engineers
ZRs	Zonal Railways

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