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 2021[76].

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 lead[77] 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 Zonal[78] Railways, wagon holding was less than assessed requirement whereas in 10 ZRs[79], 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 Lead[80] of Traffic decreased in eight zones[81] 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 zones[82].

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 Souhern 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. Cimmco 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 features[84] 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 Zones	21	4	34	2	0	61	7	1	14	2	0	24
2	2018-19		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 Vascor 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 Zones[85], which led to delay in achievement of intended benefits. In two zones[86], 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 sheds[87] 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 zones[88], 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 zones[89], 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 charges[90] to the tune of ₹ 1195.28 crore.

- In three loading points of two zones[91], 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 earnings[92] to the tune of ₹ 56.45 crore.
- In five loading points of two zones[93], 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 5[94] to 5.43 days[95]. This indicates that Zonal position/all-India average did not reflect true picture.
- In Five[96] 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.

- Three[97] Zones exceeded the target of detachment throughout the review period. In four[98] 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 two[99] 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 zones[100], 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 zones[101]. In three[102] 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.

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[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 Zones[103], 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 zones[104], 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 sheds[105].

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 rate[106] 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 tippling, 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 606[107] 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*)	The position of late start trains remained almost same during the review period. ➢ Audit analysed cause-wise delayed start of 48306 Goods trains in 13 zones[108], 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 points[109] 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 zones[110] were connected beyond 72 hours. In eight zones[111], 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 zones[112] 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 eight[113]zones, 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 zones[114], 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 nine[115] 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 zones[116], 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 four[117] 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 workshops[118] 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 accepatable.

(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 zones[119]. Out of 3417 wagons, 365 wagons were overdue for POH for more than three years in 12 Zones[120].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 Zones[121].

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 zones[122], special repair was not carried out during 2017-18 and 2018-19. In two zones[123],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 zones[124].
- In five zones[125], 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 four[126] 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 wagons[127] 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 zones[128], 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 ZRs[129].
- 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 basis[130]. 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 Programme[131]. 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 Axles[132] and Solid Forged Wheels[133] 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 (L_1) offer due to non-submission of Earnest

Money Deposit (EMD). TC recommended splitting[134] tender quantity between L_2 & L_3 in the ratio of 60:40. A contract was awarded[135] 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 crore[136].

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).