Union Government (Ministry of Railway) - Report No. 24 of 2025

SUPREME AUDIT INSTITUTION OF INDIA
लोकहितार्थ सत्यनिष्ठा
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Report of the Comptroller and Auditor General of India on Levy and recovery of charges on Private Sidings in Indian Railways and Working of Signalling Systems in South Western Railway

Union Government
Ministry of Railways
Report No. 24 of 2025
(Compliance Audit - Railways)

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Comptroller and Auditor General of India on
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Working of Signalling Systems in South Western Railway

Laid in Lok Sabha/Rajya Sabha on _____

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Preface

The Report for the period ended March 2023 has been prepared for submission to the President under Article 151 (1) of the Constitution of India.

The Report contains significant results of the audit of the Ministry of Railways of the Union Government on two topics viz. “Levy and recovery of charges on Private Sidings in Indian Railways” and “Working of Signalling Systems in South Western Railway”.

The instances mentioned in this Report are those which came to notice in the course of test audit for the period 2018-19 to 2022-23 as well as those which came to notice in earlier years, but could not be reported in the previous Audit Reports; instances relating to the period subsequent to 2022-23 have also been included, wherever necessary.

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

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Executive Summary

Executive Summary

The Audit Report for the year ending March 2023 comprises one Pan India topic on "Levy and recovery of charges on Private Sidings in Indian Railways" covered under Chapter I and one Zone specific topic on "Working of Signalling Systems in South Western Railway" covered under Chapter II.

Chapter I: Levy and recovery of charges on Private Sidings in Indian Railways

Chapter II: Working of Signalling Systems in South Western Railway

A brief overview of the important audit findings and recommendations is given below:

Chapter I: Levy and recovery of charges on Private Sidings in Indian Railways

Sidings are constructed to eliminate handling of goods at the stations as well as local haulage between the place of production/ consumption and Railway station. Despite RB's instructions (April 2017) in reference to audit findings incorporated in the Audit Report No. 24 of 2015 regarding recovery of outstanding dues from the siding owners, effective steps were not taken to address the issue. Audit observed that an amount of ₹ 4087.33 crore (including interest on delayed payments) was recoverable from the 269 private siding owners till March 2023, against various siding charges, such as, Land License Fee (LLF), repair & maintenance, staff cost, demurrage charge, inspection charge, siding charge, *etc*. levied on the siding owners. LLF of ₹ 2016.20 crore pertains to Central Railway contributed to 95 *per cent* of the total outstanding balances of ₹ 2134.90 crore against LLF.

The total recoverable amount against various siding charges (excluding interest on delayed payments) was ₹ 2625.86 crore. However, the delays in preferring bills and their non-realisation from concerned siding owners were factors leading to the accumulation of dues. Delays up to a maximum of 1825 days were noticed in recovery from the siding owners. Moreover, Zonal Railways could not levy and recover interest amounting to ₹ 1461.47 crore accrued on delayed payment of various charges.

Further, due to deficient implementation of Engine on Load (EOL) scheme, Indian Railways suffered a loss of ₹ 131.88 crore.

Basic records like siding register which records various information related to sidings like length, date of commencement, basis of charging freight, agreement details *etc*., were not being maintained by the Zonal Railways.

There was absence of any IT application for monitoring levy and recovery of various siding charges, which added to the delay in raising of bills and accumulation of various charges recoverable from the siding owners. Siding agreement, which spells out terms and conditions for levy of various charges, were either not executed or not renewed periodically as per extant guidelines of RB.

Recommendations:

Ministry of Railways needs to –

- ***Develop an integrated IT application to ensure levy and recovery of charges from the siding owners in a time bound manner.***
- ***Strengthen monitoring and internal control mechanism to ensure adherence to extant instructions in respect of levy/recovery of various charges and maintenance of records like siding register, siding agreement, etc.***
- ***Establish coordination among the different departments responsible for timely recovery of various siding charges.***

Chapter II: Working of Signalling Systems in South Western Railway

The audit revealed that there were substantial cases of signal failures in South Western Railway (SWR), at an average of 2,961 incidents per annum, reflecting poorly on the reliability and availability of signalling systems. Maintenance schedules in respect of signalling assets were undertaken at the specified periodicity and there was no shortfall during the period from 2020-21 to 2022-23. Though 100 *per cent* of required maintenance blocks were granted, cases of signal failures continued to take place in substantial numbers. Joint inspections of signals and signalling assets by SSEs/JEs were conducted as per the schedules prescribed in Indian Railway Signal Engineering Manual (IRSEM) without any shortfalls. A total of six cases of Signal Passing at Danger (SPAD) were reported during the review period. Though the cases of accidents in SWR are declining, cases of SPAD and cases of non-setting of facing points to unoccupied lines after receiving the previous trains at several stations, are a cause for concern.

Safety audit had also pointed out several irregular maintenance practices. Most of the observations were repetitive which suggests that constant monitoring was absent. There were several instances of abnormal delays in attending to deficiencies pointed out during inspections/joint inspections by the safety department.

Several cases of disconnection/reconnection of signalling equipments were done in contravention to Railway Board orders which mandated that no disconnection/reconnection should be resorted to, without issue of disconnection memo to the Station Master and obtaining necessary approvals. Maintenance staff are not strictly adhering to the stipulated rules regarding disconnection and reconnection of signalling gears which may result in accidents.

Incidences of Optical Fibre Cable (OFC) and signal cable cuts continued unabated leading to equipment failures and disruption to signalling and telecommunication services. Integrated Cable Route Plan has not been prepared yet. Issues pertaining to sharing of Cable Plans with contractors and lack of co-ordination between Signalling and Engineering departments continue to persist.

There was no upgradation plan *per se* for upgrading the existing signalling assets with technologically advanced systems.

Large number of Manned Level Crossings (MLCs) with Train Vehicle Units (TVUs) more than 50,000 and 20,000 had been interlocked. However, six MLCs with TVUs more than 50,000 were yet to be interlocked in Mysuru Division. Similarly, 57 MLCs with TVUs more than 20,000 were yet to be interlocked in SWR.

Automatic Fire Detection and Alarm Systems were yet to be provided in 67 stations and Emergency Sliding Booms (ESB) are yet to be provided at 206 level crossings as on March 2023. Signal Maintenance Management Systems (SMMS) for facilitating predictive maintenance of signalling assets and implementation of Computerised Train Signal Registers are yet to be implemented in SWR.

Important works such as replacement of conventional panels with advanced Visual Display Units (VDU), replacement of overaged signalling gears, replacement of overaged interlocking systems with Electronic Interlocking systems and implementation of Predictive Maintenance System are yet to be completed.

Recommendations:

- ***Signal equipment failures, though showing a declining trend, are taking place in significant numbers. Maintenance mechanisms are required to be made more effective to avoid the incidences of signal failures.***
- ***Disconnection/reconnections of signalling assets are to be done as per rules. Maintenance staff are to be counselled for addressing signalling issues.***

- ***Preventive action is required to be taken for averting incidences of cable cuts by way of effective supervision at the locations of works under execution. Integrated Cable Route Plan may be prepared and the same uploaded on the website for access by all stakeholders.***
- ***An upgradation plan for replacing/upgrading of Signal and Telecommunication (S&T) assets/gears may be prepared at Railway Board to guide implementation of advanced signalling systems in a phased manner.***
- ***On-going projects pertaining to S&T and Vision-2024 works should be completed in a time bound manner to obtain the benefits envisaged from these projects.***

Chapter I-

Levy and recovery of charges on Private Sidings in Indian Railways

Levy and recovery of charges on Private Sidings in Indian Railways

1.1 Introduction

A siding is an extension of a main line which goes up to the door step of the rail user. The objective of construction of a siding is to eliminate freight handling at the serving station and to compete with road transportation. Broadly, there are three types of sidings namely, public siding, private siding and assisted siding. A public siding is a railway siding laid out at a distance from the main station/goods shed. These sidings are generally open for all traffic, both inward and outward, and can be used by all consignors/consignees. Private sidings belong to private parties. Construction and maintenance of these sidings is done by the Railways and the expenses are collected from the private party and only the traffic of the siding owner is booked from such sidings. Assisted siding is similar to a private siding with the exception that the cost of construction of the siding is shared between the Railways and the siding owner. As of March 2023, there were a total of 1752 sidings across Indian Railways (IR) out of which 1007 sidings (57.5 *per cent)* were operational private sidings.

Before commissioning of a private siding facility, the Railways enter into an 'Integrated Private Siding Agreement' comprising of 'Land License Agreement' and 'Private Siding Agreement' with the owner. Land license agreement is signed before start of physical work for providing connectivity to the private siding and private siding agreement is signed before issue of commercial notification and commencement of operations in the siding by the Railways. In lieu of extending the siding facility to the siding user, the Railways levy various charges as specified in the integrated private siding agreement.

The siding agreement forms the basis for levy of various charges on the siding owner. Till March 2023, the total amount recoverable from the Private siding owners stood at ₹ 4087.33 crore[1].

[1] **This excludes charges such as engine detention/detachment, incorrect notification of sidings under Engine on Load (EOL) scheme but includes ₹ 1617.85 crore preferred less than the actual amount and interest on delayed payment recoverable from the siding owners on various accounts as assessed by Audit.**

1.2 Past audit coverage

A review on "Management of Private Sidings in Indian Railways" was conducted in 2014 and the audit findings were incorporated in the Audit Report No. 24 of 2015 on Compliance Audit of Union Government, Railways, issued by the Comptroller & Auditor General of India. The report highlighted that various charges, such as siding charges, land license fee, maintenance charges, engine hire charges, staff cost, damage & deficiency charges, *etc*. recoverable from the siding owners were not recovered.

In their Action Taken Note (ATN), Ministry of Railways (MoR) stated (July 2017) that the Zonal Railways (ZRs) had been advised (April 2017) to conduct review of all existing/new sidings to find out the dues from siding owners and process recovery of all dues from the siding owners.

1.3 Roles and responsibilities of various departments

The roles and responsibilities entrusted to the various departments of Railways for handling and management of operations of sidings are shown in **Table 1.1**:

Table 1.1: Roles and responsibilities of various departments

Unit	Department	Responsibility
Railway Board	Member (Operations and Business Development) and Member (Infrastructure)	Policy matters
Zonal Level	Operating	Operations to and from sidings
	Engineering	Preparation of plans and estimates for construction in addition to maintenance, inspection of sidings, *etc*.
	Commercial	Fixation of various charges leviable on private sidings
	Accounts	Collection of charges and preferring and realising bills for various charges based on the data supplied by the respective departments
	Signal & Telecommunication	Provision, maintenance and inspection of signaling assets
	Electrical (Traction and General)	Provision, maintenance and inspection of overhead equipment
	Mechanical (Carriage and Wagons)	Examination of wagons moving to and from the sidings.

1.4 Audit objective

The audit was conducted to assess whether the levy of various charges and recovery thereof was made as per the siding agreement and extant guidelines/instructions of Railway Board (RB).

1.5 Audit scope and methodology

The audit was conducted during 2023-24. The audit focused on the processes adopted in IR for implementation of policies and instructions of RB regarding various charges levied on private sidings and their realisation during the period from 2018-2019 to 2022-2023.

The audit methodology included examination of relevant records maintained at Zonal Headquarters and in Divisional formations. The records maintained by the railway officials at private sidings were examined to verify the correctness of the bills preferred on siding owners.

The entry and exit conferences were held in the ZRs. The response of the Railway Administration has been considered while drawing up the audit conclusion.

1.6 Sources of audit criteria

The criteria for the audit were derived from the following sources:

I. Indian Railway Code for Engineering Department.

II. Indian Railways Commercial Manual Volume-II.

III. Indian Railway Code for Traffic (Commercial) Department.

IV. Indian Railways Operating Manual.

V. Indian Railways Finance Code Volume-I.

VI. Letters/Circulars/Orders/Guidelines issued by Railway Board/Zonal Headquarters in connection with levy of various charges on private sidings.

1.7 Audit sample

Out of 1007 operational private sidings across ZRs, 269 sidings were selected for detailed examination as detailed in ***Annexure 1.1***. The selection of sample was based on the following criteria:

I. Twenty five *per cent* of the total number of private sidings in operation in a ZR subject to a minimum of 10 and maximum of 25 sidings.

II. Quantum of traffic handled by the sidings.

III. Sidings handling any of the six major commodities – (i) Coal, iron and other ores (ii) Cement (iii) Fertilisers (iv) Food grains (v) Petroleum, Oil and Lubricant (POL) and (vi) Pig Iron and Steel.

1.8 Audit findings

1.8.1 Siding agreement

Para 1823 of the Indian Railway Engineering Code (IREC) stipulates that before sanction is accorded for the construction of siding by the competent authority, the applicant should execute an agreement setting out the terms and rates at which various charges due to the Railways would be recovered. Further, MoR in August 2016 stipulated that the validity of the agreement shall be at the end of a period of three years from the date of signing of the agreement and decision for continuation of the same will be decided by both the parties.

Scrutiny of records relating to execution of siding agreements in the selected 269 private sidings revealed that:-

I. Agreements were not executed with 22 private siding owners[2] in six ZRs (CR-02, ECoR-02, ECR-12, ER-01, SECR-04 and WR-01).

II. Siding agreement in respect of 14 sidings[3] of seven ZRs (CR-05, ECR-02, NER-01, SER-03, ER-01, SCR-01 and SECR-01) were not made available to Audit.

III. Out of the remaining 233 private siding agreements, 70 siding agreements[4] were executed/renewed as per instructions (August 2016), agreements of 16 sidings (SCR-15 and SR-01) were partially[5] renewed and the balance 147 siding agreements[6] were not renewed upto March 2023. The details are shown in ***Annexure-1.2***.

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[2] **CR- GSG and UMSG, ECoR- ACTR, SBCT, ECR- DCSN, DWWS, NWSN, JCSS, KSDK, JNCP, JCSP, CCSP, CKWP, BSDC, CSCP and KDSK, ER-PSPM, SECR-BOCM, BOCB, LOCM and OKSR, WR-KBCS**

[3] **CR- BRSG, HPSG, MBSH, WDSG and PSNH, ECR- FCD and PIDH, NER-GMUV, SER- MFSJ, TWS and HSPG, ER- DSEY, SCR- AKPK, SECR- KMKA**

[4] **CR-01, ECoR-01, ECR-02, ER-10, NCR-04, NFR-04, NR-10, NWR-03, SCR-02, SECR-04, SER-07, SR-10, SWR-01, WCR-07 and WR-04**

[5] **Partially renewed agreements are those where the elements like overhead electric charges, advance payment of staff cost charges, *etc*. were incorporated.**

[6] **CR-11, ECoR-17, ECR-09, ER-03, NCR-06, NER-07, NFR-06, NR-11, NWR-7, SCR-05, SECR-16, SER-09, SR-09, SWR-11, WCR-09 and WR-11**

Further, on review of 233 siding agreements, the following deficiencies were noticed:

I. Agreements were signed without date in six sidings[7] of NCR, six sidings[8] of NER and ten sidings[9] of NWR. There was no clarity about land area in seven siding[10] agreements of NER and eight siding[11] agreements of NCR. In NWR, though the revised agreements were executed in respect of three sidings *viz.* LCTS, UNCK and STPB, there was no clarity about the land area and the Land License Fee (LLF) agreement was signed without date.

II. The date on which the agreement came into force and validity period of the agreement (month/year) were not mentioned in the siding agreement (SATP siding of NCR).

The provisions in the siding agreement form the basis to determine the facilities including manpower, maintenance and supervision, *etc*. to be provided by Railways at the siding as well as the various charges to be levied for these services. Deficiencies in these agreements may create a risk for operational inefficiencies and inaccurate levy of applicable charges. Moreover this could lead to litigation and legal complications in the event of any dispute.

1.8.2 Siding register

Every ZR should maintain a register (Form E. 1840) of all sidings (including sidings of other government departments) in that zone. Siding register is meant for capturing details such as provisions of the siding agreement, date of opening of the siding, maintenance charges recoverable, *etc*.

Audit observed that siding register has not been maintained by the Engineering Departments of ZRs. In absence of the siding register, the following aspects could not be verified:-

I. Details like date of opening/closing of siding, basis of charging freight, length of track (for charging repair & maintenance and inspection charges), position of Signal & Telecom equipment installed in siding and land details, *etc*.

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[7] **NCR- NCTD, PPGS, MJAC, LPGK, GFSG and IOGC**

[8] **NER- CPML, LIOC, FIK, MGIC, FCC and BPOB**

[9] **NWR- LCTS, UNCK, BNGS, SMPB, STPB, MJPJ, MIGK, HMEL, MSTB and KIIP**

[10] **NER- CPML, LIOC, BPCG, FIK, MGIS, FCC and BPOB**

[11] **NCR- NTCD, PPGS, MJAC, LPGK, FGSG, IOCG, MKFP and SATP**

II. Monitoring of levy and recovery of various charges from the siding owners.

Further, in absence of any IT application for monitoring of levy and recovery of various siding charges, there was delay in raising of bills and accumulation of various charges recoverable from the siding owners.

The delays in recovery of applicable charges and quantum of charges recoverable from the siding owners are discussed in the following paragraphs.

1.8.3 Charges recoverable from the private siding owners

Review of records relating to levy and recovery of various charges from siding owners of the selected 269 private sidings revealed that:-

I. An amount of ₹ 4087.33 crore[12] remained unrealised from the siding owners towards various charges as on March 2023, which comprises of ₹ 3,321.40 crore (including interest) towards Land License Fee (LLF) recoverable from the siding owners. Out of total unrealised amount of LLF ₹ 3152.47 crore was recoverable from the siding owners in CR. The other major component of unrealised charges (including interest on delayed payment) was repair & maintenance (₹ 238.70 crore) followed by staff cost (₹ 188.27 crore) and demurrage charges (₹ 180.68 crore) as indicated in **Table 1.2**:

[12] **This excludes charges such as engine detention/detachment, incorrect notification of sidings under Engine on Load (EOL) scheme and includes accrued interest as per Para 1837 of Indian Railways Code for Engineering Department and MoR's instructions (August 2016).**

Table 1.2: Summary of amount recoverable against various siding charges

(₹ in crore)

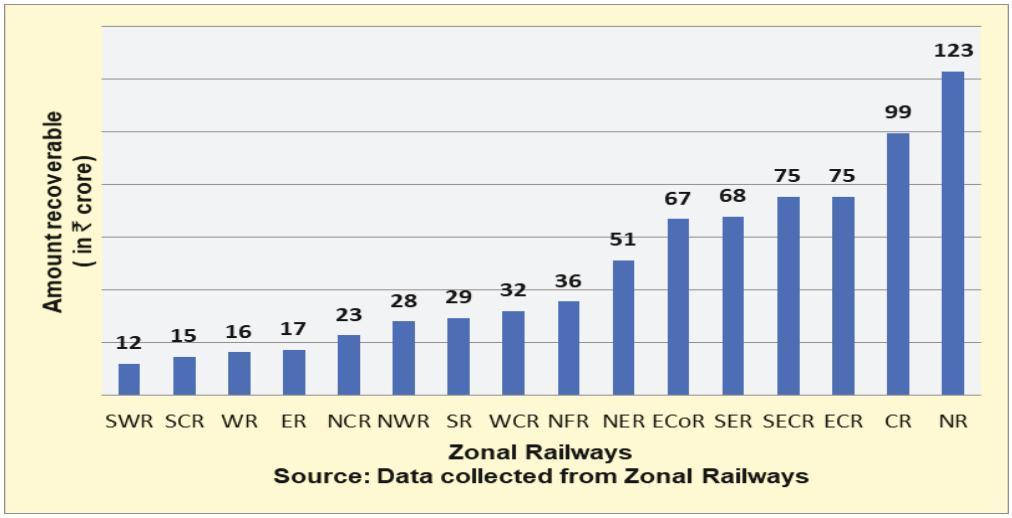
Particulars of charge	Outstanding as on 1/4/2018	Charges accrued during 2018-23	Realised during 2018-23	Outstanding as on 31/3/2023 (Col. 2 + Col. 3- Col. 4)	Interest accrued due to delayed payment	Total outstanding as on 31/3/2023 (Col. 5 + Col. 6)
1	2	3	4	5	6	7
Land License Fee	1423.14	931.87	220.11	2134.90	1186.50	3321.40
Repair & Maintenance	26.24	459.59	305.56	180.27	58.43	238.70
Staff Cost	52.13	256.79	198.06	110.86	77.41	188.27
Demurrage Charge	56.69	2298.98	2267.37	88.30	92.38	180.68
Inspection Charge	2.50	30.97	5.16	28.31	12.65	40.96
Siding Charge	7.29	432.09	396.77	42.61	13.31	55.92
ART Charge	1.53	35.06	23.16	13.43	5.25	18.68
Damage & Deficiency	4.18	53.34	45.01	12.51	5.77	18.28
Punitive Charge	7.08	113.42	113.17	7.33	4.08	11.41
Shunting Charge	0.92	330.78	326.25	5.45	4.87	10.32
Other Charges*	0.88	30.22	29.20	1.90	0.81	2.71
Total	**1582.59**	**4837.12**	**3929.83**	**2625.86**	**1461.47**	**4087.33**

Other charges includes S&T Inspection charges, stabling charges, detention charges for test wagon and OHE theft charges.

From the table above, it may be observed that the various charges recoverable from the siding owners increased by 1.6 times over the period of five years from ₹ 1582.59 crore to ₹ 4087.33 crore (including accrued interest of ₹ 1461.47 crore).

The amount of various charges (including interest), other than the LLF and charges related to Engine-on-Load (EOL) recoverable from the siding owners across ZRs is shown in **Chart 1.1**:

Chart 1.1: Amount of various charges recoverable from siding owners as on March 2023



Note: Amount recoverable excludes EOL and LLF

II. As per the siding agreements, Accounts Department of the ZRs is responsible for raising bills against the siding owners under its jurisdiction on account of various charges related to sidings. Accounts Department prefers claim on siding owners on the basis of assessment of dues by the respective departments such as, Engineering, Commercial, Mechanical and S&T. Bills for recovery of various charges were either not preferred, preferred with delay on the siding owners or preferred with incorrect assessment of charges due to lack of coordination between Accounts Department and other Departments (Engineering and Commercial) as shown in the **Table 1.3**:

Table 1.3: Statement showing cause-wise analysis of accumulation of outstanding charges

Sr. No.	Name of Charge	Zones/No. of sidings		
		Cases of non-preferring of bills	Cases of incorrect assessment of charges	Cases of delayed preferring/raising of bills
1	**Land License Fee (LLF)**	8 (NR-1, SER-5, WR-1, CR-1)	NIL	25 (NCR-1, SWR-2, SCR-2, ER-1, SR-1, WCR-2, NER-1, WR-2, CR-2, ECoR-2, NFR-1, NR-2, NWR-1, SECR-2, SER-2, ECR-1)

Sr. No.	Name of Charge	Zones/No. of sidings		
		Cases of non-preferring of bills	Cases of incorrect assessment of charges	Cases of delayed preferring/raising of bills
2	**Repairs & Maintenance Charges (R&M)**	11 (ER-1, NFR-2, NWR-4, SER-4)	NIL	16 (NCR-1, SWR-2, SCR-1, SR-1, WCR-1, NER-1, WR-2, CR-2, NFR-1, NR-1, NWR-1, SECR-1, ECR-1)
3	**Staff Cost (SC)**	24 (NCR-1, NFR-1, NER-7, NR-9, SWR-6)	SWR-1	22 (NCR-1, SWR-1, SCR-2, ER-1, SR-2, WCR-1, WR-2, CR-2, ECoR-2, NFR-1, NR-2, NWR-1, SECR-2, SER-1, ECR-1)
4	**Siding Charges**	5 (NCR-1, NFR-1, SR-3)	SR-3	-
5	**Inspection Charges**	99 (CR-7, ECoR-11, NCR-9, NER-7, NFR-2, NR-9, NWR-4, SECR-24, SER-12, SR-9, WCR-1, WR-4)	NER-4	-
6	**Shunting charges**	NIL	WR-1	-
	Total	**147**	**9**	**63**

Source: Data collected from the records of Zonal Railways.

Note: Cases of delayed preferring/raising of bills shown in Col.5 are illustrative and include only cases relating to LLF, R&M and SC.

1.8.4 Delay in realisation of various charges from the siding owners

Scrutiny of records related to 269 private sidings revealed that in respect of 147 sidings[13], bills were not preferred against the siding owners. Further, there was also delay in realisation of various charges by the Railway Administration. The number of sidings where delays were noticed ranged between 17 *per cent* and 100 *per cent* of the total number of sidings where charges were recoverable, as shown in

[13] **As indicated in Table 1.3**

Annexure 1.3. The range of delays in recovery of some major charges is indicated in **Table 1.4**:

Table 1.4: Statement showing the number of sidings and the range of delays

Component	No. of sidings where charges were recoverable	No. of sidings where delay noticed	Range of delays (in days)	No. of sidings
Land License Fee	193	178 (92.2 *per cent*)	Upto 1000	152 (Max. in NR-18)
			1001-1825	26 (Max. in SER-08)
Repair & Maintenance	114	100 (87.7 *per cent*)	Upto 1000	74 (Max. in CR-13)
				08 (Max. in SCR-04)
			1001-1825	26 (Max. in NR-07)
Staff Cost	175	171 (97.7 *per cent*)	Upto 1000	131 (Max. in SCR-13)
			1001-1825	40 (Max. in SCR-10)
Demurrage Charge	255	211 (82.7 *per cent*)	Upto 1000	206 (Max. in ECR and SECR-23 each)
			1001-1825	05 (NR-02, SECR-02, SR-01)
Inspection Charge	207	167 (80.6 *per cent*)	Upto 1000	59 (Max. in CR-13)
			1001-1825	108 (Max. in SECR-24)
Siding Charge	59	37 (62.7 *per cent*)	Upto 1000	36 (Max. in ECR-08)
			1001-1825	01 (NCR-01)

From the table above, it may be observed that delay in recovery of various charges was widespread across IR. A few illustrative cases where maximum delays were noticed are discussed in the succeeding paragraphs:

A. Land license fee

Illustration I: Umred Colliery Siding (USMG)

Umred Colliery siding at Umred (Distt- Nagpur, Maharashtra) is a private siding of Western Coalfields Limited (WCL), a subsidiary of Coal India Limited (CIL). The siding was commissioned on 18/12/1965. As per Railway records, the length of this siding was 30.854 km and the total area of land involved in the siding was 23.64 lakh square meter.

In February 2018, RB requested General Managers (GM) of all zones to direct the divisional authorities to execute the agreements for coal sidings latest by 15 March 2018. In the meeting (June 2018) of GM, Central Railway (CR) with senior management of CR, it was decided that LLF was to be recovered since the date of commissioning of the sidings. In July, 2018, Divisional Railway Manager (DRM), Nagpur realised that the LLF of Umred Colliery Siding was not charged to WCL since its commissioning. In August 2018 GM/CR requested WCL authority to deposit ₹ 2420.16 crore, which included LLF of ₹ 2082.80 crore for the period from 18 December 1965 to 31 March 2024, along with security deposit (₹ 138.44 crore), taxes (₹ 198.91 crore) and cost of preparation of plan and agreement (₹ 5,050).

While disputing the ownership of land area of Umred siding, WCL stated that there was no agreement between WCL and CR for Umred siding and therefore, the claim of ₹ 2420.16 crore raised by CR Administration was not tenable.

Though the instructions of RB on commercial licensing of Railway land existed since 1985, the initiative for execution of agreement with WCL was taken only in 2018. Till March 2023, no agreement was signed between WCL and CR Administration.

There was no certified land plan to indicate CR's ownership of land pertaining to Umred siding. Out of total 236.37 hectare of land recorded by CR, clear ownership record for 111.62 hectare of land was not available with CR Administration.

Thus, CR Administration could not realise LLF fee due to disagreement regarding ownership of land and non-execution of agreement with the siding owner (WCL).

On being pointed out, CR Administration stated (April 2024) that a Committee had been constituted at RB and deliberation on the issue was under process.

Illustration II: Bharat Petroleum Corporation Siding, Trombay (BRSG)

Bharat Petroleum Corporation Limited (BPCL) is a Public Sector Undertaking (PSU) under the Ministry of Petroleum and Natural Gas, Government of India. M/s BPCL siding, Trombay was commissioned in April 1955. As per Railway records, the total area of land involved in the siding was 1517.275 sq. meter.

In December 2012, CR Administration raised LLF bill of ₹ 1.06 crore for the period from 1/4/2001 to 31/3/2013 on the BPCL siding. In January 2022, a revised bill of ₹ 16.79 crore for the period from 1955 to 2026 was preferred. CR Administration, however, could not realise LLF fee due to dispute in ownership of land and non-execution of agreement with the siding owner (BPCL).

B. Cost of commercial staff

As per Para 9.7 of RB's freight marketing circular no.11 of 2016, the party shall bear the cost of one commercial staff per shift or as decided by the Railways depending upon the workload. As soon as the siding is notified by the Railway Administration, the party shall be advised by the division to deposit the cost of commercial staff posted to facilitate commercial functioning of the private siding (estimated for 10 year period). Further, Railway Administration is entitled to calculate and recover interest on charges overdue, if all sums payable by the applicant are not paid within one month from the due date and if no such date is fixed, within one month from the date on which a written demand is made by the Railway Administration.

In NER, Audit observed that the Railway Administration did not raise bills in respect of staff cost amounting to ₹ 32.07 crore as on March 2023. Due to non-realisation of staff cost, interest of ₹ 17.14 crore accrued till March 2023 as shown in **Table 1.5**:

Table 1.5: Statement showing outstanding staff cost

Sr. No.	Name of Siding	Outstanding staff cost as on 31 March 2023 (₹ in crore)	Interest accrued (₹ in crore)	Total outstanding as on 31 March 2023 (₹ in crore)
1	M/s Century Pulp & Paper Mills limited (CPML)	5.33	2.94	8.27
2	M/s Indian Oil Corporation Ltd. (LIOC)	4.31	2.24	6.55
3	M/s Bharat Petroleum Oil Corporation (BPCG)	5.27	2.90	8.17
4	M/s Food Corporation of India (FIK)	5.33	2.94	8.27
5	M/s Food Corporation of India (FCC)	5.33	2.94	8.27
6	M/s Bharat Petroleum Oil Corporation (BPOB)	5.33	2.94	8.27
7	M/s Food Corporation of India (GMUV)	1.17	0.24	1.41
	Total	**32.07**	**17.14**	**49.21**

Thus, non-realisation of various siding charges was due to non-preferring of bills by Railway Administration and was indicative of lack of monitoring and internal controls.

Further, Audit observed that the ZRs did not prefer the bills for interest accrued on delayed payment as discussed below.

1.8.4.1 Interest on outstanding balances

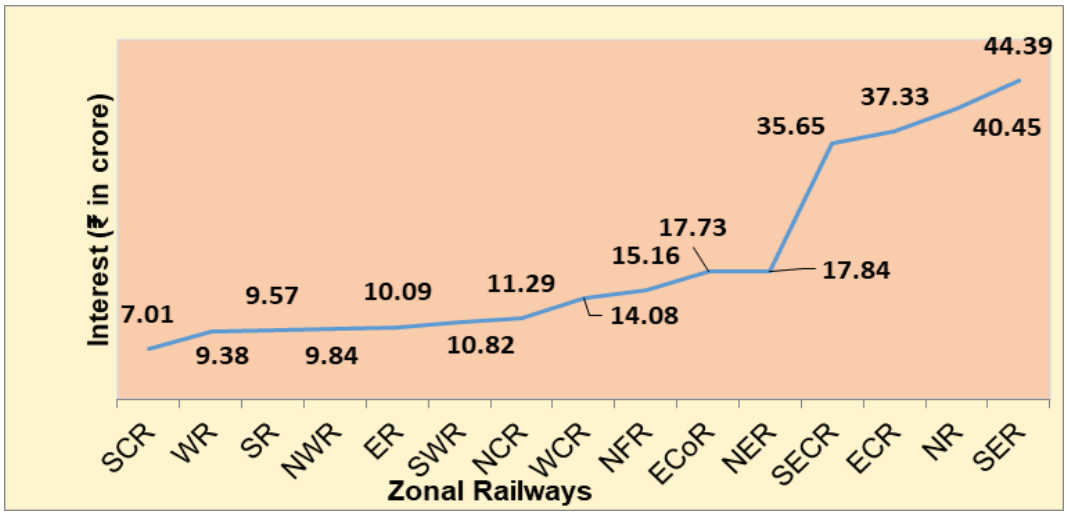
Para 1837 of Indian Railways Code for Engineering Department stipulates that Railway Administration is entitled to calculate and recover interest on charges overdue at a rate to be specified on any sum due to it if such sum is not paid within one month from a date on which a written demand is made by the Railway Administration.

In August 2016, MoR instructed that the Railway Administration shall have the right to charge and recover from the applicant interest at such rate, as may be fixed by the Railway Administration from time to time on any or all sums payable by the applicant under the terms thereof, if such

sums are not paid within one month from the due date and if no such date is fixed, within one month from the date on which a written demand is made by the Railway Administration.

Audit, however, observed that the amount recoverable against the various sidings owners remained outstanding for years. Due to non-raising of bills on the siding owners in respect of accrued interest on the delayed payments by the ZRs, Audit calculated the amount of interest as on 31 March 2023, which should have been recovered by the ZRs from the siding owners for delayed payment of various siding charges of ₹ 1461.47 crore[14]. Accrued interest of ₹ 1170.83 crore was the highest in CR and accounted for 80 *per cent* of total outstanding interest. Interest charges accrued in other ZRs are shown in **Chart 1.2**:

Chart 1.2: Zonal Railway-wise interest charges accrued



From the table above, it is observed that apart from CR, the maximum amount of interest was accrued in SER, followed by NR, ECR, SECR and so on.

The status of assessment, levy and realisation of various charges from the siding owners are discussed in the succeeding paragraphs:

1.8.5 Land license fee

As per Para 1824 of Indian Railway Code for Engineering Department, the land to be acquired outside the applicant's premises should be paid by the applicant and ownership of such land should vest with the Central Government absolutely. It was further provided that the applicant is

[14] **Calculated as per MoR's guidelines (August 2016) at the rate equal to five *per cent* above the base interest rate prescribed by the SBI**

required to pay the yearly Land License Fee (LLF) as may be fixed by the Railway Administration from time to time in advance[15] on the first day of April every year.

As per RB's guidelines (August 2016), if the licensee fails to pay the license fee as aforesaid, the licensee shall be liable to pay interest for the period of delay accumulated at a rate equal to five *per cent* above the base interest rate prescribed by the State Bank of India.

Review of records related to land license fee recoverable from the siding owners of the selected 269 private sidings revealed that:-

I. Railway land was not involved in 74 sidings[16] of 12 zones.

II. Data/records related to LLF were not made available to Audit in respect of two sidings (BSCS and HSPG of SER).

III. In respect of the remaining 193 sidings[17] across ZRs, LLF amounting to ₹ 3321.40 crore was recoverable from the siding owners till March 2023 including interest amounting to ₹ 1186.50 crore for delay in payment of license fee as detailed in ***Annexure-1.4***. The extent of non-realisation was higher in two ZRs (CR- ₹ 3152.46 crore and SER- ₹ 93.61 crore).

IV. The main reason for accumulation of huge outstanding of LLF in CR was on account of preferring of bills with delays in seven sidings, which accounted for a major share of ₹ 2016.20 (95 *per cent*) of total outstanding LLF against all ZRs as detailed in **Table 1.6**:

Table 1.6: Delay in raising bills for recovery of LLF in CR

Sr. No	Name of siding	Date of commissioning	Date of raising of 1st bill	Time taken for raising 1st bill
1	Umred Colliery Siding (USMG), Nagpur Division	18/12/1965	06/08/2018	52 years 8 months
2	Bharat Petroleum Corporation Siding, Trombay (BRSG), Mumbai Division	18/04/1955	12/12/2012	57 years 8 months

[15] LLF due for the following year to be paid in advance on 1st April of the previous year

[16] CR-02, ECoR-09, ECR-16, ER-07, NCR-05, NFR-02, NR-01, SCR-09, SECR-09, SR-11, WCR-02 and WR-01

[17] CR-17, ECoR-11, ECR-09, ER-08, NCR-05, NER-08, NFR- 08 , NR-20, NWR-10, SCR-14, SECR-16, SER-17, SR-09, SWR-12, WCR-14 and WR-15

Sr. No	Name of siding	Date of commissioning	Date of raising of 1st bill	Time taken for raising 1st bill
3	Food Corporation of India Siding, Kalamboli (KFCG), Mumbai Division	15/11/1986	May 2013	33 years 11 months
4	Rashtriya Chemical Fertilisers Siding, Trombay (FZSG), Mumbai Division	20/10/1965	No bill raised till date, however, LLF of ₹18.06 crore has been vetted by accounts (September 2021) for the period from 1/4/1965 to 31/3/2026.	
5	Ghugus Colliery Siding (GSG), Nagpur Division	15/11/1918	6/08/2018	100 years
6	Bulk Cement Corporation Ltd Siding, Kalamboli (BCCK) Mumbai Division	13/08/1997	11/02/2022	24 years 6 months
7	Hindustan Petroleum Corporation Siding (VOSG), Trombay, Mumbai Division	28/06/1954	18/01/2022	67 years 6 months

In their reply, CR Administration explained (April 2024) the siding-wise reasons for non- recovery of LLF against 19 sidings. The major reasons for non-recovery *inter-alia* included non-preferring of bills for past period by Accounts Department, non-execution of siding agreement and delayed payment by siding owners, *etc*.

V. An amount of ₹ 42.04 crore against LLF involving sidings of four ZRs (CR, NR, SER and WR) was assessed by the Audit as the bills for the same were not preferred by the ZRs (March 2023).

VI. Railway Administration did not raise bills for ₹ 1186.50 crore towards interest for delayed payment of LLF.

1.8.6 Repair & Maintenance charges

Para 1827 of Indian Railways Code for Engineering Department provides that the maintenance of works inside the applicant's premises is the applicant's own concern. It also provides that the Railways should ensure that the maintenance of works by the applicant beyond the Railway limits conforms to the requisite standards prescribed by the Railways. For this purpose, Railways should undertake periodical inspections and the cost of such periodical inspection should be a charge against the applicant. In case, it is considered desirable that the Railways should also maintain works beyond the railway limits, the

Railways may undertake maintenance of these works, provided the applicant agrees to pay the required charges to be fixed by the Railways.

RB had prescribed (August 2016) repair & maintenance charges of ₹ 10.92 lakh per track kilometer per year[18] for deployment of manpower by the Railways for maintenance works of tracks inside the siding premises.

Review of records related to Repair & Maintenance (R&M) charges recoverable from the siding owners of the selected 269 private sidings revealed that:-

I. R&M was undertaken by the siding owners themselves in respect of 155 sidings in 14 ZRs[19]. Hence, in these sidings the repair and maintenance charges were not applicable.

II. In the remaining 114 sidings[20] of all ZRs, where R&M charges were applicable, as against ₹ 485.83 crore[21] recoverable from the siding owners, ₹ 305.55 crore was realised during 2018-23 leaving an unrealised amount of ₹ 180.28 crore as of March 2023 as shown in ***Annexure-1.5***.

III. The unrealised amount against R&M charges was on the higher side in two ZRs (CR and SER) with CR having the maximum unrealised R&M charges of ₹ 54.83 crore followed by SER at ₹ 42.85 crore.

IV. Railway Administration did not raise bills for ₹ 58.43 crore towards interest for delayed payment of R&M charges.

1.8.6.1 Inspection charges of civil engineering assets

Review of records related to recovery of inspection charges of civil engineering assets in the selected 269 private sidings revealed that:-

I. Inspection of civil engineering assets was not carried out by ZRs in respect of 62 sidings in six ZRs[22].

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[18] **Including departmental charges at the rate of 12.5 *per cent* on the total expenditure towards deployment of manpower for per km of track maintenance per year**

[19] **CR-4, ECoR-18, ECR-23, ER-13, NCR-09, NER-07, NR-12, NWR-02, SCR-14, SECR-19, SER-14, SR-11, WCR-07 and WR-02**

[20] **CR-15, ECoR-02, ECR-02, ER-02, NCR-01, NER-01, NFR-10, NR-09, NWR-08, SCR-09, SECR-06, SER-05, SR-09, SWR-12, WCR-09 and WR-14**

[21] **Including ₹ 38.67 crore assessed by Audit in respect of 11 sidings ER-01, NFR-02, NWR-04, SER-04**

[22] **ECR-25, ER-15, NR-04, NWR-02, SCR-14 and SER-02**

II. In respect of the remaining 207 sidings, bills for inspection charges were preferred against 115 sidings[23], and for 92 sidings[24] the inspection charges were assessed by Audit.

III. An amount of ₹ 33.47 crore as inspection charges was recoverable from the siding owners (March 2023) including ₹ 18.75 crore assessed by Audit. ZRs recovered ₹ 5.16 crore, leaving a balance of ₹ 28.31 crore (March 2023) as shown in ***Annexure- 1.6***.

IV. The unrealised amount was maximum in SER at ₹ 8.46 crore followed by ECoR at ₹ 5.72 crore.

V. Railway Administration did not raise bills for ₹ 12.65 crore towards interest for delayed payment of inspection charges.

1.8.7 Cost of commercial staff posted in the siding

In January 2012, RB stipulated that in all private sidings other than EOL only, barring the cost of one commercial staff per shift, Railways shall bear the cost of all other staff. The cost of all staff at EOL sidings shall be borne by the Railways. In August 2016, RB reiterated that the party shall bear the cost of one commercial staff per shift or as decided by the Railway, depending upon the work-load and as soon as the siding is notified by the Railway Administration, the party shall be advised by the Division to deposit the cost of commercial staff, estimated for a 10 year period, to facilitate commercial functioning of the private siding.

Scrutiny of records related to recovery of cost of the commercial staff posted in the selected 269 private sidings revealed that:-

I. Recovery of staff cost was not applicable in respect of 86 private sidings[25] for reasons such as sidings were under EOL Scheme, no commercial staff was posted in the siding, one-time payment of staff cost was made, *etc*.

II. In respect of seven sidings[26], information regarding posting of staff and recovery of staff cost was not made available to Audit.

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23 **CR-10, ECoR-16, NCR-01, NER-05, NFR-08, NR-07, NWR-04, SCR-09, SER-05, SR-11, SWR-12, WCR-15 and WR-12**

24 **CR-09, ECoR-04, NCR-09, NER-03, NFR-02, NR-10, NWR-04, SECR-25, SER-12, SR-09, WCR-01 and WR-04**

25 **ECoR-05, ECR-11, ER-08, NCR-05, NER-01, NFR-01, NR-04, NWR-05, SECR-11, SER-11, SR-06, SWR-06, WCR-07 and WR-05**

26 **ECR-04, ECoR-02 and ER-01**

III. In respect of 176 sidings[27], staff cost of ₹ 308.92 crore was recoverable from the siding owners including ₹ 40.88 crore in respect of eight sidings (NER-7 and NFR-1) which were not levied by the ZRs concerned.

IV. During 2018-23, out of recoverable amount of ₹ 308.92 crore, ZRs realised ₹ 198.06 crore leaving ₹ 110.86 crore recoverable from siding owners (March 2023) as shown in ***Annexure-1.7***. The unrealised amount was maximum in NER at ₹ 49.21 crore followed by NR at ₹ 39.92 crore (including accrued interest).

V. Railway Administration did not raise bills for ₹ 77.41 crore towards interest for delayed payment of staff cost.

1.8.8 Demurrage charges

Para 2511 of the Indian Railways Commercial Manual (IRCM) Volume II stipulates that the free time allowed for loading and/or unloading should be calculated in accordance with the rules in force from time to time. Wagons / vehicles detained by the siding user over and above such free time shall be subject to payment of demurrage charges at the rates in force as notified by individual Railway administrations in their local tariffs, rate advices, *etc*.

Scrutiny of records related to recovery of demurrage charges in the selected 269 private sidings revealed that:-

I. Demurrage charges were not accrued in 14 sidings[28] of eight ZRs.

II. In respect of the remaining 255[29] private sidings, as against the claim of ₹ 2355.67 crore, ZRs recovered ₹ 2267.37 crore leaving a balance of ₹ 88.30 crore (March 2023) as shown in ***Annexure-1.8***.

III. Railway Administration did not raise bills for ₹ 92.38 crore towards interest for delayed payment of demurrage charges. The highest amount of ₹ 54.53 crore (30.18 *per cent*) was due to be recovered in SECR followed by ECR (₹ 53.76 crore).

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[27] **CR-19, ECoR-13, ECR-10, ER-06, NCR-05, NER-07, NFR-09, NR-17, NWR-05, SCR-23, SECR-14, SER-08, SR-14, SWR-06, WCR-09 and WR-11**

[28] **ECOR-04, NCR-01, NER-01, NR-03, SCR-01, SR-01, SWR-02 and WCR-01**

[29] **CR-19, ECoR-16, ECR-25, ER-15, NCR-09, NER-07, NFR-10, NR-18, NWR-10, SCR-22, SECR-25, SER-19, SR-19, SWR-10, WCR-15 and WR-16**

1.8.9 Siding charges

Siding charges are levied for haulage of wagons handled (both inward and outward) between the serving station and the siding. As stipulated in Para 1807 of Chapter- XVIII (Sidings) of Indian Railway Code for Traffic (Commercial) Department, the siding charges are normally fixed on the basis of cost per engine hour and the average time for a round trip from the serving station to the siding and back for placement and/or removal of wagons whether loaded or empty. The charges per trip are arrived at by multiplying the average time taken for the trip by the cost of engine hour[30].

Scrutiny of records related to recovery of siding charges in the selected 269 private sidings revealed that:-

I. Siding charges were not applicable in respect of 210 sidings[31] across ZRs as these sidings were independent sidings and operated on through distance basis.

II. ZRs preferred bills of siding charges in respect of 58 sidings[32] .

III. Siding charges are applicable when change of engine is involved at serving station and haulage of wagons are done with a different engine to/from serving station from loading/unloading point. All sidings which are served by a serving station are called non-independent sidings and therefore, through distance fare is not applicable.

In respect of FGSG/NCR siding, bills for siding charges were not preferred as the freight was charged on through distance basis. The records of the Railway Administration revealed that the siding was a non-independent siding and therefore, not qualified for charging of freight on through distance basis.

Thus, due to incorrect consideration of the siding as an independent siding, an amount of ₹ 0.79 crore on account of siding charges remained un-realised.

IV. In case of the remaining one siding in NFR (BRPN), bills amounting to ₹ 2.20 crore for the review period 2018-23 were not preferred.

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[30] **Siding Charge = Average trip time in minutes x (Engine Hour Cost/60)**

[31] **CR-12, ECoR-19, ECR-15, ER-13, NCR-07, NER-08, NFR-02, NR-15, NWR-10, SCR-20, SECR-24, SER-18, SR-11, SWR-08, WCR-14 and WR-14**

[32] **CR-07, EcoR-01, ECR-10, ER-02, NCR-02, NFR-08, NR-06, SCR-03, SECR-01, SER-01, SR-09, SWR-04, WCR-02 and WR-02**

V. Zonal Railways assessed ₹ 422.89 crore recoverable from 59 siding owners (excluding interest) during the review period. Scrutiny in audit revealed that there was short levy of siding charges amounting to ₹ 9.19 crore (excluding interest).

VI. Short levy of siding charges of ₹ 9.19 crore (excluding interest) as assessed by Audit includes ₹ 6.20 crore (67 *per cent)* in respect of three sidings of SR (ERNF, TNPS and TNFS). The under assessment of siding charges was due to –

- Siding charges were calculated at diesel shunting engine rates instead of diesel train engine rate (ERNF, TNPS and TNFS sidings) resulting in undercharges amounting to ₹ 2.85 crore; and
- Siding charges were levied incorrectly for 4-wheeled wagon at the rate of diesel shunting engines instead of applicable rate for 8-wheeled wagon at diesel train engine rate in TNFS siding. This had resulted in undercharges amounting to ₹ 3.35 crore.

VII. Out of total ₹ 439.37 crore[33] recoverable from 59 siding owners, ₹ 396.77 crore was realised leaving ₹ 42.59 crore recoverable from siding owners (March 2023) as shown in ***Annexure-1.9***.

VIII. The outstanding recoverable amount was on the higher side in respect of two ZRs (NR- ₹ 39.99 crore and SR- ₹ 6.53 crore), which constitutes about 83.20 *per cent* of the total recoverable siding charges.

IX. Railway Administration did not raise bills for ₹ 13.31 crore towards interest for delayed payment of siding charges.

1.8.10 Accident Relief Train charge

Accident Relief Trains (ARTs) comprises engine, crane, empty wagons, coach, re-railing equipment and other safety equipment depending on the requirement at the site. Mechanical department is responsible for raising the bills for providing such ARTs. ARTs should be made available to private sidings for attending to accidents inside the sidings**.**

MoR (February 1998)[34] had prescribed charges to be recovered from siding owners in respect of ARTs spared to private bodies/sidings holders.

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[33] **This includes ₹ 7.28 crore recoverable from 59 siding owners for the period prior to the review period i.e as on 31 March 2018.**

[34] **Letter No. TCR/2214/97/1 dated 10 February 1998**

Scrutiny of records related to recovery of ART charges in the selected 269 private sidings revealed that:-

I. ART charges were not accrued in respect of 138 selected private sidings[35] as no ARTs were spared to private siding holders.

II. In respect of the remaining 131[36] private sidings, ART charges amounting to ₹ 36.59 crore were recoverable. ZRs realised ₹ 23.16 crore during 2018-23, leaving ₹ 13.43 crore recoverable from the siding owners (March 2023) as shown in ***Annexure-1.10.***

III. Three ZRs (CR, SECR and ECR) collectively accounted for about 68 *per cent* of the total recoverable amount. The highest recoverable amount was in CR at ₹ 5.68 crore followed by SECR at ₹ 4.23 crore and ECR at ₹ 2.87 crore.

IV. Railway Administration did not raise bills for ₹ 5.25 crore towards interest for delayed payment of ART charges.

1.8.11 Damage & Deficiency charges

As per Para 18 of "Standard form of agreement of private siding", under standard terms of agreement, a siding owner is entirely responsible for any damage to Railway property (e.g. rolling stock, engine) inside the siding and should make good any damage to such property.

Further, Joint Procedure Order (JPO) of September 2015 provides that the recoverable amount should be reflected in the "Bills Recoverable" register maintained by the Divisional Accounts office.

Review of records related to recovery of Damage & Deficiency charges revealed that no 'Bills Recoverable Register' was being maintained in the Divisional Accounts office for centralised monitoring of the recovery of Damage & Deficiency charges. In absence of 'Bills Recoverable Register', Audit collected the requisite information from various sources, such as, records maintained by the siding and Commercial and Mechanical departments. On analysis of the records, it was observed that:-

[35] **CR-04, ECoR-12, ECR-12, ER-06, NCR-06, NER-06, NFR-10, NR-17, NWR-10, SCR-08, SECR-02, SER-05, SR-11, SWR-12, WCR-09 and WR-08**

[36] **CR-15, ECoR-08, ECR-13, ER-09, NCR-04, NER-02, NR-04, SCR-15, SECR-23, SER-14, SR-09, WCR-07 and WR-08**

I. No cases of damages in wagons were noticed during the review period in respect of 165 sidings[37].

II. In case of the remaining 104 sidings[38] in 15 zones, an amount of ₹ 57.52 crore, including ₹ 3.86 crore as assessed by Audit[39], was recoverable during the period 2018-23. Of these, Railways realised ₹ 45.01 crore, leaving ₹ 12.51 crore (March 2023) recoverable from siding owners as shown in ***Annexure-1.11***.

III. Railway Administration did not raise bills for ₹ 5.77 crore towards interest for delayed payment of Damage & Deficiency charges.

1.8.12 Punitive charges

When the commodities are over-loaded in railway wagons, the Railway Administration shall recover punitive charges at the rates prescribed in GSR 570 (E) published in the Gazette of India dated 17 July 2012.

Scrutiny of records related to recovery of punitive charges in the selected 269 private sidings revealed that:-

I. Punitive charges were not accrued in 178 sidings[40] as no cases of overloading were detected in these sidings.

II. During the review period, punitive charges amounting to ₹ 120.50 crore were recoverable in respect of the remaining 91 sidings[41]. ZRs recovered ₹ 113.17 crore, leaving ₹ 7.33 crore recoverable from siding owners (March 2023) as shown in ***Annexure-1.12.*** The total outstanding including accrued interest was assessed at ₹ 11.41 crore.

III. The outstanding amount of ₹ 8.76 crore in respect of 13 sidings of CR constituted about 77 *per cent* of the total recoverable punitive charges.

IV. Railway Administration did not raise bills for ₹4.08 crore towards interest for delayed payment of punitive charges.

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[37] **CR-08, ECoR-11, ECR-21, ER-10, NCR-06, NER-07, NFR-10,NR-12, NWR-03, SCR-14, SECR-16, SER-11, SR-13,SWR-09, WCR-04 and WR-10**

[38] **CR-11, ECoR-09, ECR-04, ER-05, NCR-04, NER-01,NR-09, NWR-07, SCR-09, SECR-09, SER-08, SR-07,SWR-03, WCR-12 and WR-06**

[39] **Against 11 sidings of three ZRs (NCR-04, NER-01 and NWR-06)**

[40] **CR-13, ECoR-05, ECR-25, ER-14, NCR-08, NER-08, NFR-08, NR-20, NWR-06, SCR-06, SECR-09, SER-12, SR-18, SWR-09, WCR-06 and WR-11**

[41] **CR-06, ECoR-15, ER-01, NCR-02, NFR-02, NR-01, NWR-04, SCR-17, SECR-16, SER-07, SR-02, SWR-03, WCR-10 and WR-5**

1.8.13 Shunting charges

Shunting charges are levied for the utilisation of railway loco to perform shunting operation on the freight train beyond the point of inter-change and recovered from the siding owners for the shunting of wagons. MoR stipulated (February 2009) that shunting charges are applicable, irrespective of whether the siding is notified for charging freight on' through distance basis' or otherwise. Shunting charge is levied on the basis of actual shunting time and prevailing 'All India Engine Hour Cost' (AIEHC) for 'Train Engine' or 'Shunting Engine', as the case may be.

Scrutiny of records related to recovery of shunting charges in the selected 269 private sidings revealed that:-

I. Shunting charges were not accrued in 188 sidings[42] as no railway locos were used for shunting operations in these sidings.

II. During the review period, shunting charges amounting to ₹ 331.70 crore were recoverable in the remaining 81 sidings[43] (March 2023), including ₹ 0.32 lakh assessed[44] by Audit. ZRs recovered ₹ 326.25 crore leaving ₹ 5.45 crore (March 2023) outstanding from siding owners as shown in ***Annexure-1.13***.

III. The outstanding amount of ₹ 5.20 crore in SECR was about 50 *per cent* of the total recoverable shunting charges.

IV. Railway Administration did not raise bills for ₹ 4.87 crore towards interest for delayed payment of shunting charges.

1.8.14 Other charges

As per RB's guidelines/instructions[45], charges relating to "Inspection & Supervision charges of S&T assets, OHE Theft Charges, Stabling Charges and Detention Charges for Test Wagons" are to be recovered from the siding owners.

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[42] CR-13, ECoR-17, ECR-18, ER-12, NCR-09, NER-07, NFR-06, NR-18, NWR-05, SER-13, SECR-12, SER-15, SR-17, SWR-11, WCR-07 and WR-08

[43] CR-06, ECoR-03, ECR-07, ER-03, NCR-01, NER-01, NFR-04, NR-03, NWR-05, SCR-10, SECR-13, SER-04, SR-03, SWR-01, WCR-09 and WR-08

[44] On account of incorrect calculation of claim on the basis of shunting engine rates instead of train engine rates by the TCLS Siding of WR

[45] Freight marketing circular no. 11 of 2016, Rates master circular no. TC-I/2016/201/1 dated 19 May 2016, MoR's letter No.TC-I/2021/201/e-file/1 (3344010) New Delhi, dated 09 March 2022 and Rate circular no. 63 of 2009 and 17 of 2018

Scrutiny of records related to recovery of these charges in the selected 269 private sidings revealed that the amount recoverable from the siding owners stood at ₹ 2.71 crore as on 31 March 2023 as indicated in **Table 1.7**:-

Table 1.7: Statement showing outstanding amount towards other charges (₹ in crore)

Particulars of charge	Charges accrued	Realised during 2018-23	Outstanding as on 31/3/2023 (Col. 2 – Col. 3)	Interest accrued due to delayed payment	Total outstanding as on 31/3/2023 (Col. 4 + Col. 5)
1	2	3	4	5	6
S&T Inspection & Supervision	3.75	2.32	1.43	0.23	1.66
OHE Theft	0.06	0.004	0.056	0.007	0.063
Stabling Charge	16.75	16.44	0.31	0.18	0.49
Detention Charge for test wagon	10.53	10.43	0.10	0.39	0.49
Total	**31.09**	**29.19**	**1.90**	**0.81**	**2.71**

I. During the review period, an amount of ₹ 31.09 crore was recoverable as against these charges in all ZRs. Of this ZRs recovered ₹ 29.19 crore as shown in the above table.

II. MoR instructions of August 2016 had not prescribed any methodology for calculation of inspection & supervision charges of S&T assets.

III. Delay was observed in realisation of the above charges from the siding owners. However, Railway Administration did not raise claim for ₹ 0.81 crore towards interest for delayed payment of these charges.

1.8.15 Sidings under Engine on Load (EOL) scheme

Railway Board introduced (March 2013) Engine-On-Load scheme to reduce detention of wagons at sidings/terminals due to delay in receiving the locomotives. Under EOL operations, the train engine will remain available during loading or unloading operation in the siding and wait on Railway's account so as to operate the train immediately after completion of loading/ unloading. Further, sidings owners were allowed to utilise the engine during the free time for loading /unloading of the

rake without any payment of engine hire charges. Beyond free time, prescribed engine hire charges shall be levied. As per EOL policy[46], the Railways will bear the staff cost of railway staff deployed at the sidings operated under the EOL scheme.

Out of 269 selected sidings, 68 sidings were under "EOL Scheme". Audit test checked records of 58 sidings for three months (May, December and March) for each of the year for the period from 2018-19 to 2022-23 to assess the implementation of EOL scheme and observed that -

I. In respect of 43 sidings[47] in 15 ZRs (except WCR), ₹38.21 crore, was recoverable from siding owners as against engine detention beyond free time, including ₹ 13.75 crore assessed by Audit on account of under assessment/non-preferring of bills. ZRs realised ₹ 22.50 crore, leaving a balance of ₹ 15.71 crore as on 31 March 2023.

II. In 33 sidings[48] after completion of loading/unloading, the rakes were not moved out from the siding due to detachment of engine in EOL siding. This had resulted in detention of rakes in sidings up to 466:05 hours and avoidable loss of earning capacity of wagons amounting to ₹ 130.84 crore.

III. Two sidings (BPCI and BKRI) of SR were declared as 'Independent booking point' for charging freight on through distance basis. Audit observed that these sidings were served by Irumpanam yard and were therefore, not qualified for charging freight on 'Through distance basis'. However, the Railway Administration allowed charging freight on 'Through distance basis' and irregularly permitted EOL scheme to these sidings. As a result, Railway Administration could not enforce the recovery of staff cost of ₹0.41 crore from the siding owners.

NTCD siding in NCR was notified as EOL siding. Audit observed that 75 *per cent* of rakes comprising of BOXN (Open) wagons were permitted free time of seven hours for loading/unloading as admissible under Non-EOL scheme. The Railway Administration

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[46] **Rate circular No. 14 of 2005, Freight Marketing Circular (FMC) No. 5 of 2013, FMC No. 11 of 2016 and FMC No. 6 of 2020**

[47] **CR-02, ECoR-01, ECR-01, ER-04, NCR-03, NER-01, NFR-01, NR-03, NWR-05, SCR-05, SECR-03, SER-05, SR-05, SWR-02 and WR-02**

[48] **CR-1, ECoR-1, ECR-1, ER-3, NCR-4, NER-1, NFR-1, NWR-5, SECR-2, SER-4, SR-1, SWR-3 ,WCR-3 and WR-3**

suffered loss of ₹0.63 crore on account of staff cost applicable under Non-EOL scheme.

The Railways suffered loss amounting to ₹ 1.04 crore due to non-levy of staff cost in three sidings (SR-BPCI & BKRI and NCR-NCTD).

Thus, the deficient implementation of EOL scheme resulted in loss of ₹ 131.88 crore[49] to the Railways.

The matter was referred to the MoR in November 2024; no reply was received (March 2025).

1.9 Conclusion

Sidings are constructed to eliminate handling of goods at the stations as well as local haulage between the place of production/ consumption and Railway station. Despite RB's instructions (April 2017) in reference to audit findings incorporated in the Audit Report No.24 of 2015 regarding recovery of outstanding dues from the siding owners, effective steps were not taken to address the issue. Audit observed that an amount of ₹ 4087.33 crore (including interest on delayed payments) was recoverable from the 269 private siding owners till March 2023, against various siding charges, such as, Land License Fee (LLF), repair & maintenance, staff cost, demurrage charge, inspection charge, siding charge *etc*. levied on the siding owners. LLF of ₹ 2016.20 crore pertains to CR contributed to 95 *per cent* of the total outstanding balances of ₹ 2134.90 crore against LLF.

The total recoverable amount against various siding charges (excluding interest on delayed payments) was ₹ 2625.86 crore. However, the delays in preferring bills and their non-realisation from concerned siding owners were factors leading to the accumulation of dues. Delays up to a maximum of 1825 days were noticed in recovery from the siding owners. Moreover, ZRs could not levy and recover interest amounting to ₹ 1461.47 crore accrued on delayed payment of various charges.

Further, due to deficient implementation of EOL scheme, IR suffered a loss of ₹ 131.88 crore.

Basic records like siding register which records various information related to sidings like length, date of commencement, basis of charging

[49] **Amount of ₹ 131.88 crore includes loss of earning capacity due to detention of rake of ₹ 130.84 crore and loss due to non-recovery of staff cost amounting of ₹ 1.04 crore**

freight, agreement details *etc*., were not being maintained by the ZRs. There was absence of any IT application for monitoring levy and recovery of various siding charges, which added to the delay in raising of bills and accumulation of various charges recoverable from the siding owners. Siding agreement, which spells out terms and conditions for levy of various charges, were either not executed or not renewed periodically as per extant guidelines of RB.

1.10 Recommendations

Ministry of Railways needs to –

- ***Develop an integrated IT application to ensure levy and recovery of charges from the siding owners in a time bound manner.***
- ***Strengthen monitoring and internal control mechanism to ensure adherence to extant instructions in respect of levy/recovery of various charges and maintenance of records like siding register, siding agreement, etc.***
- ***Establish coordination among the different departments responsible for timely recovery of various siding charges.***

Chapter II-

Working of Signalling Systems in South Western Railway

Working of Signalling Systems in South Western Railway

2.1 Introduction

Railway signalling systems refer to the mechanisms used to control the movement of trains without any collisions or accidents. Signalling systems play a vital role in enhancing efficiency and safety in train operations. Efficient maintenance of signalling assets is the responsibility of the Signal & Telecommunication (S&T) Department.

For ensuring high level of reliability of signalling systems, Indian Railways (IR) has undertaken several upgradation/modernisation works *viz*., replacement of overaged signalling gears, cables, interlocking of manned level crossings, provision of automatic fire detection and alarm systems, emergency sliding booms, automatic block Signalling, redundant block proving axle counters, provision of data loggers and latest technologies of electrical and electronic signalling systems. Further, several initiatives in this direction have been taken by IR over the years by way of induction of Electronic Interlocking (EI) System, Centralised Traffic Control (CTC), Train Collision Avoidance Systems (TCAS), Train Actuated Warning System (TAWS), Mobile Train Radio Communication Systems (MTRCS), *etc*.

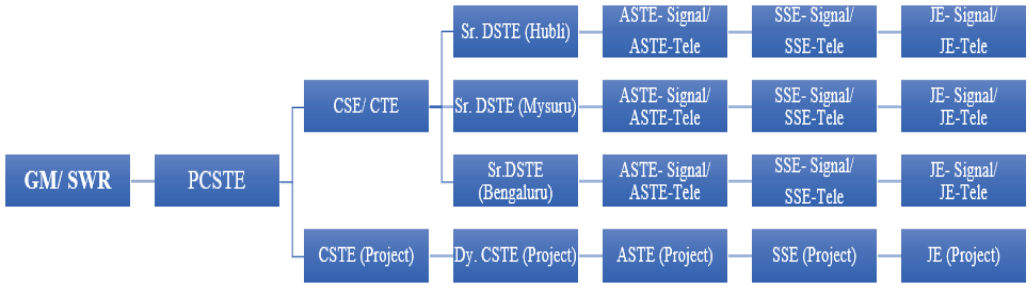
The role and functions of some of the signalling equipments mentioned above are explained in ***Annexure 2.1***.

2.2 Organisational structure

The S&T Directorate at Railway Board (RB), headed by Member (Infrastructure), is responsible for all issues regarding procurement and maintenance of S&T assets over IR. Member (Infrastructure) is assisted by Additional Member (Signal) and Additional Member (Telecommunication).

The Principal Chief Signalling and Telecom Engineer (PCSTE) is responsible for overall supervision and maintenance of S&T assets at Zonal level. He is assisted by Chief Signalling Engineer/ Chief Telecom Engineer (CSE/CTE) at Zonal level and Senior Divisional Signalling and Telecom Engineer (Sr. DSTE) at Divisional level.

Organisational Chart (S&T, SWR)



2.3 Audit scope

The audit examined the performance of the S&T department of consisting of three Divisions of South Western Railway (SWR) during the period from 2018-19 to 2022-23. However, compliance with maintenance schedules was covered for the period 2020-21 to 2022-23.

2.4 Audit objectives

The audit was conducted to ascertain whether:

- Maintenance practices were followed as per codal provisions and other norms;
- Upgradation and modernisation of signalling assets was done as per the upgradation plans; and
- S&T works were sanctioned and executed timely to achieve the intended objectives.

2.5 Audit criteria

The audit criteria were drawn from the following sources:

(i) Indian Railway Signal Engineering Manual (IRSEM)

(ii) Indian Railway Code for the Engineering Department

(iii) Corporate Safety Plan (2003-2013)

(iv) Vision-2024 document

(v) Railway Board orders/circulars.

2.6 Audit methodology

The audit methodology included examination of records and analysis of data and performance reports at the S&T Department of Zonal HQ, Divisional HQ, selected field units and selected stations. Progress of signalling works was reviewed with reference to data available on Indian

Railways Projects Sanctions & Management (IRPSM) and detailed study of estimates/tender/contracts/Works Register and other works related details available at S&T/Headquarters and respective Divisional offices/units of S&T and Civil Engineering Departments.

2.7 Audit sample size

For macro analysis of signalling performance of the Zone, all three Divisions i.e. Hubballi, Bengaluru and Mysuru were selected and for micro analysis four stations (implementing units- SSE/Signal) per Division were selected, as detailed in **Table 2.1**:

Table 2.1: Divisions and stations selected

Division	Stations selected for micro analysis
Mysuru (MYS)	Mysuru (MYS), Arsikere (ASK), Hassan (HAS), Shivamogga Town (SMET)
Hubballi (UBL)	Hubballi (UBL), Belagavi (BGM), Hosapete (HPT), Bellary (BAY)
Bengaluru (SBC)	Yelahanka (YNK), Baiyyappanahalli (BYPL), Hindupur (HUP), Bangarapet (BWT)

For analysis of signalling works, the total number of works-in-progress under Plan Head-33 as at the end of March 2023 was collected from IRPSM. For micro analysis, five works per division (Total 15) were selected to review progress, reasons for delays, time and cost overrun, *etc*. Works were selected considering the objective of works i.e., safety, capacity building and sanctioned cost of work.

In addition to the above, 16 Priority Signalling Works of SWR identified in the Vision 2024 document for execution, were also selected for examining the progress of these works.

2.8 Overview of revenue and capital fund allotment and utilisation

Fund allotment, revenue expenditure on Repairs and Maintenance of S&T plant and equipment, and capital expenditure incurred on the works during the period from 2018-19 to 2022-23 are shown in **Table 2.2**:

Table 2.2: Revenue and capital fund allotment and utilisation

(₹ in crore)

Head of Account	Grant/ Expenditure	2018-19	2019-20	2020-21	2021-22	2022-23	Total
07-500 Plant and Equipment Signalling	Budget Grant	57.90	66.31	70.46	71.87	70.16	336.70
	Actual Expenditure	61.53	67.01	63.43	62.45	75.30	329.72
	Excess (+)/ Savings (-)	3.63	0.7	-7.03	-9.42	5.14	-
PH- 33 S&T Capital Expenditure	Budget Grant	40.04	38.27	23.44	68.78	72.97	243.50
	Actual Expenditure	41.62	38.66	27.23	44.46	47.54	199.51
	Excess (+)/ Savings (-)	1.58	0.39	3.79	-24.32	-25.43	-

During the review period 2018-19 to 2022-23, an amount of ₹ 330 crore was incurred *vis-à-vis* allotment of ₹ 337 crore towards revenue maintenance of signalling equipment. Average revenue expenditure per annum was ₹ 66 crore in these five years which ranged from ₹ 61.53 crore to ₹ 75.30 crore.

Similarly, an amount of ₹ 200 crore was incurred vis-à-vis the provision of ₹ 244 crore for execution of capital works. Average capital expenditure per annum was ₹ 40 crore over five years (2018-19 to 2022-23) which ranged from ₹ 27.23 crore to ₹ 47.54 crore. Savings of ₹ 24.32 crore during 2021-22 and ₹ 25.43 crore during 2022-23 were indicative of under utilisation of capital funds due to slow progress of the works.

2.9 Audit findings

Audit Objective-I: Whether maintenance practices were followed as per codal provisions and other norms

2.9.1 Prevention of Accidents- Collision free system

The main objective of the Railway signalling system is to facilitate smooth train operations through an absolute collision-free system. To eliminate collision and avoid consequential fatalities and damage to property, signal failures, equipment failures and other deficiencies are to be addressed and eliminated by way of strict compliance to maintenance schedules, inspections by the designated officials and timely follow-up action on issues noticed. Poor or substandard maintenance would result in failure of signaling equipment which could lead to train collisions.

During the period from 2018-19 to 2022-23, 44 accidents[50] took place in SWR, which included 28 derailments, one accident at manned level crossing, six cases of Signal Passing at Danger (SPAD)[51] and nine due to other causes[52].

Further, 8,547 S&T failures occurred during the period under review, averaging 1,709 failures per annum. These are potential reasons for accidents besides impacting punctuality of train operations as detailed subsequently in Para No. 2.9.2.

As per Para 7.6.9 of IRSEM, to mitigate the adverse effects of a SPAD, appropriate devices, circuits and methods to be provided are as follows:

(a) Station staff shall set the relevant facing points[53] to unoccupied lines, soon after the arrival of a previous train, through a provision in Station Working Rules.

(b) Train Protection Devices.

(c) Any other approved type of method/equipment.

Though six SPAD cases were reported during the review period, there was no action plan for providing Automatic Train Protection Devices-European Train Control System (ETCS)/Train Collision Avoidance System (TCAS)/Train Protection & Warning System (TPWS), despite these equipments being identified in Vision -2024 document.

In this connection, audit test-checked one day's data[54] of MYS Division which revealed that there were 40 cases of failure in setting the relevant facing points to the unoccupied line soon after the arrival of a previous train. In these cases, the points were reversed late. The time taken for reversal of points ranged from 3 minutes 12 seconds (JRU) to 3 hours 11

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[50] No. of accidents- 2018-19- (12), 2019-20– (6), 2020-21- (8), 2021-22- (10), 2022-23- (8)

[51] SPAD stands for "signal passed at danger", which is when a train passes a stop signal without authorisation.

[52] 3 cases – Landslide, 3 cases – Trespassing, 3 cases of unusual incidents.

[53] Facing points facilitate to receive a train on the set track. After receiving the train, the line is occupied. When facing point is set to an unoccupied line, any other incoming train is diverted to the unoccupied line. Hence, the train already in the occupied line is safe. Provision is made in Station Working Rules of the respective stations for setting the relevant facing points to an unoccupied line, soon after the arrival of a previous train.

[54] Data dated 30th of October 2023 reported by data loggers of MYS Division regarding failure to reverse the points against the occupied line immediately after receipt of the train.

minutes (BYD). Delay in reversal of points rendered the occupied lines vulnerable to potential rear-end collisions.

Railway Administration replied (April 2024) that this is one of the items being reviewed in the weekly safety meetings of the Zone. Corrective action has been taken and there is a significant drop in cases. Efforts are on for total elimination.

Further examination of data for the entire month of October 2023 was conducted by Audit in respect of MYS Division which revealed that there were 827 cases of not setting the facing points to unoccupied lines immediately after receiving the trains. The delay in setting the points ranged from 3 minutes to 22 hours 39 minutes, with an average delay of 47 minutes 55 seconds per case.

The frequent cases of not setting the facing points to unoccupied lines at an average of more than 26 cases per day is an area of concern since it poses a serious safety risk.

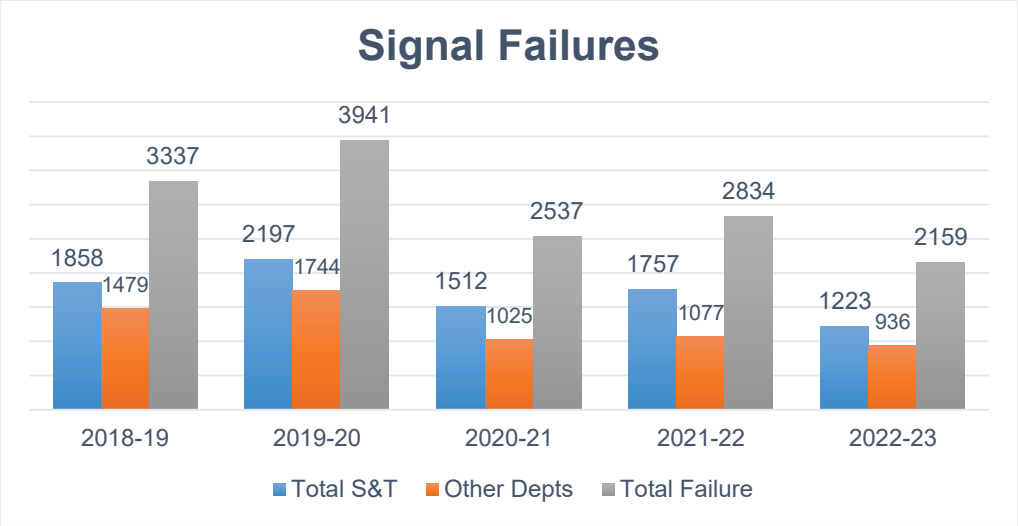
2.9.2 Signalling performance – Cases of Signal failures/defects

During the period from 2018-19 to 2022-23, 14,808 number of signal failures/defects had taken place, at an average of 2,961 cases per annum. Out of the 14,808 cases, 8,547 were on S&T account while the rest 6,261 cases were on account of other departments *viz*., Engineering/ Operating/Electrical, *etc*., as detailed in **Table 2.3**:

Table 2.3: Statement of Signal failures/defects

Year	Signal equipment	Track circuiting	Relay	Cable	Block instrument	EI/ RRI/ SSI	Point	Lifting Barrier	Power Equipment	Misc S&T	Total S&T	Other Depts	Total Failure cases
2018-19	63	30	305	350	514	12	35	11	51	487	1858	1479	3337
2019-20	92	59	294	329	648	27	83	14	62	589	2197	1744	3941
2020-21	41	43	193	249	494	12	43	11	44	382	1512	1025	2537
2021-22	46	38	248	316	476	27	47	5	41	513	1757	1077	2834
2022-23	39	67	186	235	231	27	26	10	30	372	1223	936	2159
Total	**281**	**237**	**1226**	**1479**	**2363**	**105**	**234**	**51**	**228**	**2343**	**8547**	**6261**	**14808**

Source: Monthly progress reports of CSTE/O/SWR



Signal failures varied from year to year and ranged from 2,159 to 3,941 cases. Failures on S&T account ranged from 1,223 to 2,197 cases, while failures attributable to other departments ranged from 936 to 1,744 cases. Comparing the incidences of 2018-19 with the incidences which had taken place during 2022-23 revealed that signal equipment failures declined from 63 to 39 cases. Similarly, relay failures declined from 305 to 186 cases, cable related failures from 350 to 235 cases, block instrument failures from 514 to 231 cases, point machine failures from 35 to 26 cases, and power equipment failures from 51 to 30 cases. However, track circuiting and electronic interlocking failures increased from 30 to 67 cases and from 12 to 27 cases respectively during the same period.

Despite the declining trend, cases of signal failures were substantial. Cases under the category - Miscellaneous were also significant (2,343 cases) which included cases of bad workmanship, lamp fused/blown off, route held up, *etc.* This indicates the need for a more effective maintenance mechanism to eliminate signal failures, by proper monitoring with the aid of data loggers as a tool of predictive maintenance for ensuring failsafe signalling systems.

Signal failures also impacted punctuality of trains services in SWR as detailed in **Table 2.4**:

Table 2.4: Punctuality of train services in SWR

Year	Total no. of Mail/Express trains run	Total no. of Mail/Express trains that lost punctuality	No. of trains that lost punctuality on S&T account	Percentage of trains that lost punctuality on S&T account
1	2	3	4	5 (4/3)
2018-19	80,572	14,093	614	4.36
2019-20	88,281	17,164	739	4.31
2020-21	16,564	620	68	10.97
2021-22	55,469	2,197	49	2.23
2022-23	1,02,638	6,048	168	2.78
Total	**3,43,524**	**40,122**	**1,638**	**4.08**

Source: Monthly progress reports of CSTE/O/SWR

During the review period, out of 40,122 trains that lost punctuality, the loss on S&T account was 1,638, ranging from 49 to 739 trains. Continuous monitoring of signalling assets is essential to reduce signal failures and minimise loss of punctuality of train services on S&T account.

Railway Administration replied that overall failures have declined over the period of five years in SWR. However, the cases under miscellaneous category have increased significantly, as they are contributed from other departments and other S&T work units (KRIDE, CN, RE, CORE, *etc*.) due to ongoing infrastructure works. It was explained that several steps were taken to reduce the failures and daily/monthly analysis of signal failures trends are being closely monitored.

However, despite the steps taken by the Administration, a significant number of signal failures are still taking place which underscores the need for efficient preventive maintenance and rigorous monitoring mechanisms.

2.9.3 Maintenance schedules- Effective maintenance and overhauling of signalling assets

Ministry of Railways has devised maintenance schedules for effective maintenance and overhauling signalling assets as brought out in Appendix-I of IRSEM. Further, the regular duties of SSEs/JEs are elaborated in Chapter-3 of IRSEM.

As per the codal provision, the Sectional SSEs/JEs (Signal) shall monitor daily all failures in their sections. During periodical inspection, repairs are carried out to ensure that similar faults do not recur. Failures pertaining to other departments shall be promptly brought to the notice of the concerned departments. Data logger exception reports are to be monitored on a daily basis for corrective action, duly taking assistance

from Data Logger Management Centre (DLMC) at Divisional headquarters.

Records maintained for review and compliance of weekly, fortnightly, monthly and quarterly maintenance schedules were checked in respect of signalling assets *viz*., data loggers, mechanical lifting barrier, power operated lifting barrier, sliding boom, cable, earth leakage detectors, Integrated Power Supply (IPS), power supply, DC track circuits, digital axle counters, Multi Section Digital Axle Counter (MSDAC), block instruments, Analog Block Proving Axle Counter (BPAC), colour light signals, electrically operated points (Crank Handle testing), fuse alarm system, earthing and lightning protection system, control panel, relays and Relay Room, Electronic interlocking, *etc*. at all the selected stations.

Audit observed that maintenance schedules in respect of the above signalling assets were undertaken at the specified periodicity and there was no shortfall during the period from 2020-21 to 2022-23.

2.9.4 Adequacy of maintenance blocks

Corporate Safety Plan 2012 had suggested for preventive maintenance of basic infrastructure facilities, including signalling assets, to prevent accidents/ derailments. Preventive maintenance can be undertaken only when adequate maintenance blocks are provided. Optimum utilisation of such maintenance blocks should be ensured by maintenance staff.

Details of maintenance blocks demanded by S&T Department and granted by Operating Department during the period 2020-21 to 2022-23 are shown in **Table 2.5**:

Table 2.5: Maintenance Blocks (S&T)

Year	Maintenance Blocks (in hours)			Percentage of blocks utilised
	Demanded	Granted	Utilised	
2020-21	11,851.46	11,846.46	11,846.46	99.96
2021-22	17,509.73	17,507.73	17,507.73	99.99
2022-23	18,851.08	18,842.08	18,842.08	99.95

In SWR, the utilisation of blocks granted was almost 100 *per cent* which indicated that adequate hours of blocks were available to attend the signal equipment failures and maintenance of signalling assets.

Though sufficient maintenance blocks were utilised by S&T department, there was no significant reduction in the number of signalling failures as reported during the previous three years – 2020-21 (2,537), 2021-22 (2,834) and 2022-23 (2,159). Provision of adequate maintenance blocks

should have resulted in reduction of signalling failure by ensuring better maintenance works.

Railway Administration replied that the Rolling Block program is effectively implemented across the Zone. Each week, the program is rolled out from the Divisions, allowing for planned work to be carried out accordingly. Proactive planning minimises the impact of work on S&T gears.

However, since signal and equipment failures are taking place in large numbers, action needs to be taken to ensure effective utilisation of the Rolling Block program to minimise the failure cases.

2.9.5 Monitoring of signalling operations and maintenance through inspections

To ensure that proper and correct practices are adopted by staff during maintenance of signalling assets and other works, the maintenance practices are required to be monitored by nominated officers and supervisory officers by conducting the earmarked inspections.

Inspection of signals and signalling assets in co-ordination with Engineering/Electrical/Mechanical/Operating Departments are to be conducted by Signalling staff *viz*., SSEs and JEs as provided in IRSEM duly prescribing their periodicity. Review by Audit at the selected stations revealed that joint inspections by SSEs/JEs were conducted as per the schedules prescribed in IRSEM without any shortfalls.

Inspections such as foot plate inspections, general inspection, *etc*. are to be conducted by divisional officers *viz*. DSTEs/ASTEs.

Details of inspections due and conducted by DSTEs and ASTEs during the review period are shown in **Table 2.6**:

Table 2.6: Details of inspection

Year	Periodicity	Foot Plate Inspection		Safety Inspection		General inspection	
		UBL	MYS	UBL	MYS	UBL	MYS
2020-21	Due	NA*	21	117	163	NA	192
	Done	6	21	69	163	83	192
2021-22	Due	NA	22	117	163	NA	257
	Done	11	22	115	163	80	257
2022-23	Due	NA	49	117	163	NA	314
	Done	17	49	112	163	109	314

Source: Records of Divisional Signalling and Telecommunication Departments

****NA stands for Not Available***

However, the number of inspections conducted by DSTE/ASTE differed from division to division since no specific schedule of inspection was prescribed in IRSEM for these officers. Details of inspection done were not readily available in SBC Division. Review of some of the reports revealed that there were no serious issues reported and follow up action was taken by SSEs/JEs in respect of the general deficiencies pointed out.

However, several cases of non-compliance in respect of deficiencies pointed out during joint inspections by safety audit were observed as detailed below:

- Deficiencies pointed out during joint inspection of points & crossings at Bellary station yard in December 2020 were not attended till March 2021 (3 months).
- In Kudatini station yard, deficiency regarding broken sleeper at point region was not attended even after one year (by March 2021).
- Deficiencies noticed at Tornagallu station yard in January 2021 were attended after a lapse of 45 days.
- In Hindupur-Malugur section of SBC Division, deficiencies i.e. floating of tongue rails at Point 52A, 62A and 63B were brought out during safety audit in August 2022. Though these deficiencies were recorded to have been attended, it was found during the subsequent safety audit in September 2022 that these deficiencies continued to exist and were not attended to.

Follow-up action is required to be promptly initiated and also checked during inspections, to ensure safety and reliability of signalling assets.

It was replied that registers for inspection reports are maintained at every station wherein deficiencies are listed out for taking remedial action and further monitoring.

The reply was general in nature without specific remarks on action taken on the lapses mentioned in the safety audit report.

2.9.6 Disconnection of Signalling Equipment

In terms of Para 3.1.2 (i) of IRSEM - Signal Staff should attend the failure only after giving disconnection memo[55] (where required) for gear at fault and duly taking acknowledgement from operating staff at the station.

[55] **Disconnection memo is a formal document used to inform the Station Master about the temporary disconnection of signaling equipment or track circuits for maintenance or other reasons.**

Railway Board pointed out in January 2020[56] that a few cases took place in which S&T staff in the field disconnected field equipment without proper authority which resulted in creation of an unsafe condition. In October 2012[57], MoR had advised Zonal Railways to strictly follow safe maintenance practices during the time of maintenance and work execution. It was insisted that signal maintenance and repair work had to be undertaken only under disconnection notice as per provisions contained in Para 11.4 of IRSEM (Pt-II). Disregard of these instructions would lead to serious consequences.

In SWR, it was noticed that a serious case of adopting a shortcut method for attending to signal failures without issue of disconnection memo to the Station Master, took place at Hosadurga Road station in Birur - Chikjajur section in Mysore Division in February 2023 as detailed below:

Train No. 12649 – Sampark Kranthi Express was starting with Paper Line Clear Ticket (PLCT)[58] against advance starter[59] as it had failed. However, the point was set to Down main line (wrong line) whereas as per PLCT the train was supposed to pass through UP main line. This serious anomaly was noticed by the loco pilot who stopped the train before Point No. 65A. Had the train not been stopped before the wrongly set point, it would have moved in the Down line leading to a head-on collision with a goods train moving in the Down line.

As per rules, the Electric Signal Maintainer (ESM) should have served disconnection memo to the Station Master (SM) for attending BPAC[60] failure and got it acknowledged by the SM. Then the Station Master could have adopted a different approach required for non-interlocked working such as clamping of points and piloting of train, *etc*. Thus, failure to issue disconnection memo by S&T staff for attending failure could have led to a serious accident.

Railway Administration replied that in view of the implication on safety, action was being taken against staff carrying out works without following

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[56] **MoR's letter no. 2016/Sig/Safety Performance, dated 7/1/2020**

[57] **MoR's letter no. 2012/Sig/Safety Performance/1 dated 22/10/2012**

[58] **PLCT: Paper Line Clear Ticket is issued as an authority to proceed in the event of failure of block instruments or signalling systems.**

[59] **Advance Starter: It is a signal installed after starter signal for dispatching the trains from a station to the next block section.**

[60] **BPAC : Block Proving Axle Counter is an electrical device provided at two given points on the track, which proves whether the section of the track between the said two points is clear or occupied, by counting axles moving in and out.**

the procedure of issuing disconnection/re-connections, under discipline & appeal rules and deterrent penalty imposed.

Further, safety audit reports also pointed out several lapses regarding disconnection/ reconnections, as detailed below:

- **Nanjangud Town (NTW) station of MYS Division**: Point No. 51B and Point No. 50A were disconnected for rod replacement/joint work and reconnected in June 2021. However, the nature of joint work was not mentioned in the disconnection/reconnection register.
- **Nelamangala (NMGA) station of SBC Division**: Disconnection memo issued in July 2021 was not entered in the disconnection register.
- **Kuppam (KPN) and Krishnarajapuram (KJM) station of SBC Division**: Relay Room Key register revealed that different types of cable faults were attended without issuing disconnection memo by ESM.
- **Gadag (GDG) station of UBL Division**: Memo for disconnection of BPAC to carry out doubling works was given in March 2020. However, reconnection memo was not given. Apart from General Safety Certificate, re-connection memo also should have been given.
- **Talaku (THKU) station of SBC Division**: Disconnections & reconnections done at adjacent station during BPAC/Block failure were not indicated in the disconnection & reconnection register in the affected station.

Railway Administration replied that in respect of the above cases (NTW and NMGA), the details in the disconnection/re-connection registers should have been maintained by the on-duty Station Masters and they were counselled accordingly. When a safety certificate was issued and indicated that the interlocking was commissioned according to the new plan which included BPAC, there was no need for a reconnection memo as new equipment is commissioned.

It was also replied that on-duty Station Masters were responsible for recording relevant details. Since the on-duty Station Master initiates system resets as per protocol, upon system restoration, failure and reset details are to be documented in the failure register and BPAC reset registers at both stations, which shall be endorsed by SSEs, JEs or ESM during their next station visit.

The above incidences indicate that maintenance staff are not strictly adhering to the stipulated rules regarding disconnection and reconnection

of signalling gears. Regular counselling of maintenance staff is necessary for strict compliance of proper maintenance practices since any disconnection/reconnection not communicated could lead to serious safety repercussions.

Railway Administration replied that sporadic incidents are taking place and in all such cases deterrent action was taken against the erring staff. Intensive staff counselling/safety drives were held regarding disconnections and re-connections.

However, the above instances of irregular practices were brought out only during safety audits and no such cases were noticed and brought out by S&T officers during their inspections. Safe disconnection and re-connection practices are to be strictly enforced and monitored through inspections and sample checks at prescribed intervals.

2.9.7 Cable cuts affecting Signalling and Communication Services

Zonal Railways undertake various works such as doubling, construction of ROB/RUB, boundary walls, yard remodelling, electrification, *etc*. During execution of these works, Optical Fibre Cable (OFC)[61] and quad cables[62] frequently get cut due to digging works done by contractors. Important communication and safety circuits like train control communication, BPAC, FOIS, *etc*., get affected due to cable cuts and disrupt essential services besides reducing the life of cables.

Ministry of Railways (MoR) issued a Joint Procedure Order (JPO) in December 2004 for execution of works in the vicinity of working S&T cables. MoR issued a revised JPO in June 2013 which stipulated, *inter alia*, that S&T Department and RailTel shall provide a detailed cable route plan to Engineering Department for circulation. Further, Engineering Department has to take permission in writing from S&T department for any digging work. Cable route plan would be issued to the contractor by the Engineering officials before commencement of the work. In case damage was caused to OFC/quad cable during execution of the work, the contractor was liable for a penalty of ₹ 1 lakh to ₹ 1.5 lakh (depending on type of cable) per location.

Cable cuts in SWR for the period 2018-19 to 2022-23 are detailed in **Table 2.7**:

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[61] **Optical Fibre Cable (OFC) is a cable used in high performance data networking for long distance, to carry data using optical or light-based technology.**

[62] **Quad cable: It is an electrical cable made up of four copper insulated conductors stranded together to make one quad cable, used in railway signalling and telecom installations.**

Table 2.7: Cases of Cable Cuts **(₹ in crore)**

Year	Total number of cable cuts	OFC/ Quad Cables	Signalling Cables	Total Penalty imposed	Penalty recovered	Balance to be recovered as on 31.3.2023
2018-19	121	74	47	3.99	0.11	3.88
2019-20	178	152	26	2.20	0.10	2.10
2020-21	168	151	17	1.98	0.05	1.93
2021-22	220	173	47	2.85	0.01	2.84
2022-23	227	170	57	2.66	1.64	1.02
TOTAL	**914**	**720**	**194**	**13.68**	**1.91**	**11.77**

Source: Relevant records of S&T Department of SBC, UBL and MYS Division

During the review period, there were 914 cases of cable cutting (720 cases of quad/OFC cable cuts and 194 cases of signalling cable cuts). Though SWR imposed penalty of ₹ 13.68 crore on the erring contractors it could recover only ₹ 1.91 crore and the balance amount of ₹ 11.77 crore was yet to be recovered as of March 2023. Out of the imposed penalty of ₹ 13.68 crore, ₹ 8.46 crore pertains to SBC division alone which recovered only ₹ 1 lakh of the imposed penalty during the review period.

These cable cuts were on account of non-sharing of cable route plans with the contractors and absence of joint supervision of work by S&T and Engineering Departments which resulted in continued incidences of cable cuts and resultant disruption of services. It also resulted in lower insulation of OFC/Quad cables which impacted the working of Electro Magnetic Compatibility (EMC) sockets. Poor condition of cables also led to high number of block failures.

Further, joint inspection report of cable cuts conducted by S&T and Engineering departments also indicated that many a times, the cable was in an open condition and not laid properly at the specified depth as the trenches dug for laying OFC/Quad cables were not deep enough. On this ground, Engineering Department did not recover penalty on a few occasions.

Thus, S&T Department is also responsible for the rising number of incidences of cable cuts. Proactive action is required for preventing the incidences of cable cuts for smooth functioning of signaling and communication services.

It was replied that Quad & OFC cable route plans are uploaded on the SWR intranet website to facilitate easy access and identification of cable areas. Despite measures such as sharing cable route plans with contractors, joint marking of cable paths, and strict instructions not to

commence work without S&T supervision, instances of unauthorised work persisted, leading to cable cuts even after implementation of JPO.

The fact remains that cases of cable cuts are continuing unabated causing disruption of train operations as mentioned earlier in Para 2.9.2. This is indicative of the fact that compliance of the Joint Procedure Orders of RB has not been implemented in letter and spirit, resulting in continued cases of cuts which ultimately disrupts train operations.

2.9.8 Integrated S&T Cable Route Plan

Railway Board vide letter dated 19 January 2023 advised that Central Railway has developed Integrated S&T Cable Route Plan depicting all S&T cables *viz*., Signalling, Telecom, OFC pertaining to Station Yard, LC gates, Intermediate Block Hut (IBH), *etc*., on a single plan and these plans were uploaded on the Railway website, accessible to all concerned. Zonal Railways were advised to prepare such Integrated Cable Plans and disseminate the information to all concerned to alleviate cable cut incidences.

The issue was further highlighted by RB in March 2023, wherein RB cited the unusual incidence of cutting of signalling cables and their subsequent wrong connections in January 2023 at Lucknow station of NR. RB emphasised the importance of Integrated Route Plans and directed all Zonal Railways to intimate their plan of action by 15 March 2023.

In SWR, Integrated S&T Cable Route Plan was not prepared in any of the three divisions (MYS, UBL and SBC). Since incidences of OFC/Quad cable cutting cases are continuing unabated as pointed out in Para No. 2.9.7 above, preparation of Integrated Route Plan is required to be expedited and disseminated amongst all stakeholders to ensure reduction of cable cuts and protect the signalling equipment.

Railway Administration replied that the work proposal for preparation of Integrated Cable Route Plan is under progress in consultation with the other stakeholders *viz*., Construction Unit, Gati Shakti Unit and RVNL.

Audit Objective-II: Whether upgradation and modernisation of signalling assets was done as per the upgradation plans

Vision 2020 document identified ‘Safety - Zero tolerance for accidents’ as one of the most important critical mission areas. This would be achieved through a combination of technological and human resource interventions. Renewal, replacement, upgradation and technological aids for early detection of flaws and integrated maintenance of both track and rolling

stock would be planned and managed from the standpoint of attaining the goal of zero derailments.

For enhancing efficiency and safety in train operation, modern signalling plays a very vital role. Induction of Multi Aspect Colour Light Signalling (MACLS), Panel Interlocking (PI), Route Relay Interlocking (RRI), Electronic Interlocking (EI), Automatic Block Signalling, Block Proving by Axle Counter, enhancement of safety at level crossing by interlocking of level crossings and provision of telephones at manned level crossings result in enhancement of safety levels in train operations.

Further, the Corporate Safety Plan (2003-2013) recommended adoption of latest technology for upgradation of signalling systems *viz*., Train Actuated Warning Device (TAWD), Solid State Interlocking (SSI), Train Protection & Warning System (TPWS) and Mobile Train Radio Communication System (MTRCS).

Vision 2024 Policy document had also identified vital works for implementing the above technologies.

In order to achieve the objectives envisaged in the above policy documents, a comprehensive upgradation plan was imperative to facilitate systematic and time bound implementation of the works. However, no such specific comprehensive upgradation plan was in place in SWR.

However, since some upgradation related works were undertaken in SWR on need basis and also as per the instructions of Railway Board from time to time, Audit examined the following upgradation related issues to check the status and level of implementation.

2.9.9 Replacement of Overaged Signalling Equipment

Timely renewal and replacement of signalling assets are very vital for facilitating efficient and effective operations and for achieving an environment of "Fail-proof" from the present "Fail-safe" system of asset failures by upgrading the signalling systems.

The stock of signalling assets consists of cable, mechanical lifting barriers, sliding booms, Earth leakage detectors, Integrated Power Supply (IPS), Block Instruments, Control Panel, Relay Room, track circuits, Data Loggers, *etc*. Review of the signalling assets available at the selected stations revealed that the equipment were in good condition and analysis of the age-profile revealed that they were within the specified life of service. No overaged signalling gears/ equipment were in use.

However, review of works sanctioned for replacement of overaged assets *viz*., Replacement of conventional domino panel with Visual Display Units

and Replacement of overaged Signalling gears in MYS Division was still at Detailed Estimate stage (March 2024), the work of Replacement of over aged interlocking systems with Electronic Interlocking in SBC Division was at tender stage and the work of Reliability improvement work for signalling installation in Hubballi Division was still in progress (March 2024) after two extensions. Delay in completion of these projects impacted the S&T upgradation plan of Railways. The details are covered subsequently in Para No. 2.9.15 of the report.

2.9.10 Interlocking of Manned Level Crossing gates

Interlocking System is a crucial safety mechanism used to control train movements and ensure safe operations at railway stations and junctions. It is a complex network of signals, points (switches), and track circuits that work together to prevent conflicting movements and collisions. Interlocking of level crossings ensures safety of train movement and hassle-free road traffic through the gates. Only after proper closure of the level crossing gates, will the signal turn green for train movement which will increase the confidence of the loco pilot also.

Railway Board instructed (26 March 2018) all Zonal Railways to prepare an Action Plan for interlocking all Manned Level Crossings (MLC) with Train Vehicle Units (TVUs)[63] of more than 50,000 on priority. The objective was to prevent accidents at MLC gate. Further, Railway Board pointed out (9 April 2018) that extant instructions of IRSEM stipulate interlocking of MLC with TVUs of more than 20,000. Zonal Railways were to prepare an Action Plan for interlocking of level crossings with TVUs more than 20,000 to improve the safety of road users and train operations at these locations.

A review of targets and achievements revealed that six MLCs were yet to be interlocked in MYS division, where TVUs were in excess of 50,000, as on March 2023. It was stated that the work was being executed by Gati Shakti Unit/MYS for interlocking of these MLCs. Details of target fixed for UBL and SBC divisions were not available.

Interlocking of these MLCs is to be expedited to improve the safety at MLCs so that these MLCs could be directly handled/monitored from the Station Master's panel.

Further, interlocking works are prioritised considering the TVUs. Therefore, all LCs with TVUs > 20,000 are eligible for interlocking. In view of the above, an attempt was made by Audit to ascertain the number of MLCs with TVUs > 20,000 but yet to be taken up for interlocking, as per

[63] **Train Vehicle Unit (TVU) – Number of train units multiplied by number of Road vehicle units passing through a level crossing in a day.**

the latest Working Time Tables. It revealed that in MYS Division, out of 120 LCs, 32 LCs, in SBC Division, out of 140, 12 LCs and in UBL Division out of 104, 13 LCs are not interlocked. Thus 57 level crossings are yet to be interlocked in SWR as of November 2023. Non-interlocking of MLCs would compromise the safety of road users at the locations of MLCs and impede safe train operations.

(Annexure 2.2)

It was replied that sanction for the works for inclusion of MLC for interlocking depends on the priority assigned by Railway Board. RB recommended for interlocking of LC gates above 50,000 TVUs to be interlocked on priority. However, in SWR, gates above 20,000 TVUs have also been interlocked.

Since RB had instructed in 2018 to interlock all the LCs gates with TVUs of 50,000 and 20,000 on priority, existence of 57 non-interlocked gates even after six years indicates deficient planning. The Manned Level Crossings which are yet to be interlocked may be taken up on priority.

2.9.11 Automatic Fire Detection and Alarm System (AFDAS) in Stations

Automatic Fire Detection and Alarm System (AFDAS) is a system that detects the early signs of a fire and alerts station staff without human intervention. Railway Board instructed (8 November 2016) to provide AFDAS at all stations irrespective of the number of routes.

Railway Board also advised (9 September 2019) that provision of AFDAS was an essential requirement for ensuring safety of Signalling Interlocking system provided at a station. A functional AFDAS would help to detect any major breakdown of signal installations due to fire.

In SWR, during the review period, out of 361 stations, 294 stations (MYS Division -84, UBL Division -115 and SBC Division -95) were provided with AFDAS. However, the remaining 67 stations were yet to be provided with AFDAS as on 31 March 2023, which needs to be expedited to avert potential fire incidences.

It was replied that AFDAS have now been installed at all stations over SWR as of September 2023.

However, it was observed in Audit that the work of provision of AFDAS for 25 stations of MYS Division was still in progress as on March 2024 with physical progress of 90 *per cent* and financial progress of 60 *per cent* and also five stations were yet to be provided with AFDAS as of March 2024. This indicated that AFDAS was not installed in all stations. The work may be completed at the earliest to avoid potential fire incidences.

2.9.12 Provision of Emergency Sliding Boom at Interlocked LC Gates

Emergency Sliding Booms (ESB) shall be provided at all interlocked gates to work trains on signals in case of failure of lifting barrier. ESB shall be fixed outside the lifting barrier to ensure safety of road users & trains.

Image 2.1: Emergency Sliding Booms

Railway Board advised (11 October 2019) to arrange for provision of sliding boom at every manned interlocked gate. Sliding booms were to be provided at all interlocked LC gates so that in the event of breakage of boom by road vehicles, train operations would be managed with sliding booms to ensure proper signal. Further, it was advised that by the end of December 2020, all interlocked gates should be provided with sliding booms. However, even at the end of March 2023, ESBs were yet to be provided at 206 LC gates as detailed in **Table 2.8**:

Table 2.8: Status of ESB

Division	Total interlocked LCs	ESB provided	Balance
MYS	104	17	87
UBL	144	140	4
SBC	138	23	115
Total	**386**	**180**	**206**

Source: Records maintained at Divisional offices

Thus, despite the order of RB to provide all the interlocked gates with sliding booms by December 2020, the SWR administration could not provide even 50 *per cent* of their interlocked gates with sliding booms even after lapse of more than three years from the date fixed by the RB.

Further, Hubballi Division has provided ESBs at both Traffic and Engineering gates whereas SBC and MYS divisions have provided ESBs at Traffic gates only and Engineering gates have not been considered for providing ESBs.

Hence, precautionary measures to provide the interlocked LCs with sliding booms as advised by RB to avoid any untoward incidence in case of failure of the lifting barrier, have not been implemented by SWR despite lapse of more than three years, compromising the safety of the commuters/vehicles using railroad crossing and the passing trains.

It was replied that at SBC and MYS Divisions, Engineering gates maintenance were under the purview of Engineering department. The installations of ESBs have been progressively taken up by SBC & MYS Divisions.

MoR may ensure that ESBs are provided at the earliest at all the interlocked LCs.

2.9.13 Modernisation & Upgradation of Signalling Systems

Vision 2020 document, among other recommendations, highlighted the need for adoption of latest technology for upgradation of signalling systems besides timely replacement of overaged signal gears. Technologies like Train Actuated Warning Device (TAWD), Solid State Interlocking (SSI), Train Protection & Warning System (TPWS) and Mobile Train Radio Communication System (MTRCS) were identified in the Corporate Safety Plan (CSP) for implementation in the S&T field.

Progress made in implementation of the above technologies in SWR was examined in Audit which revealed the following:

(i) **Train Collision Avoidance System (TCAS)** This system is being implemented in Indian Railways to prevent Signal Passing at Danger (SPAD) cases and other unsafe conditions due to over speeding and train collisions in stations and block sections. TCAS is a kind of Automatic Train Protection (ATP) system developed by Research Designs & Standards Organization (RDSO).

In SWR, two works ((i) Provision of long-term evolution system on low density railway network in connection with TCAS, for a value of ₹ 313 crore, and (ii) Provision of indigenous train collision avoidance system on low density railway network for 1563 route kilometre for a value of ₹ 469 crore) were sanctioned in 2020-21 and identified in Vision 2024 document also for completion of these works by the end of March 2024. However, both the works which are complementary to each other, have not been taken up, as detailed in Para No. 2.9.16.

(ii) Train Protection & Warning System (TPWS) This is a train protection system devised for stopping a train automatically by application of brakes in the event of the train passing a signal at danger without authority and thus preventing SPAD cases**.** TPWS had not been sanctioned to SWR by the Railway Board.

(iii) Train Actuated Warning Device (TAWD) TAWD measures stress induced in the rail by a train/locomotive while approaching the level crossing and thus detects the incoming train automatically and switches on audio-visual warning devices like warning lights and sounds the bell/hooters as a warning to road-users about the impending arrival of the train. TAWD had not been sanctioned to SWR by the Railway Board.

(iv) Electronic Interlocking (EI) EI is a computer based interlocking system which uses thousands of electro-mechanical relays requiring complex wiring and inter-connections. The EI system occupies considerably less space, consumes less power, is more reliable and is easy to install and maintain.

In SWR, EI has been implemented in 160 stations and another 43 stations have been identified for providing EI during 2023-24.

Provision of EI are taken up through sanctioned works. 15 works selected for review included two works of 'Replacement of over-aged interlocking with Electronic Interlocking at four stations[64]' sanctioned in 2020-21 while another work at seven stations[65] sanctioned in 2022-23 had not been started (as of March 2024). Progress of these works revealed that out of the 11 stations identified, electronic Interlocking was provided in three[66] out of the four stations sanctioned in 2020-21 (Whitefield, Devangonthi and Taykal as on March 2024). At one station (Malur) the work was in progress. Electronic Interlocking at seven stations which were sanctioned in 2022-23 had not been started. The work is still at tender finalisation stage (as of March 2024).

It was replied that EI has been implemented in 166 stations. Out of 43 stations identified as targets for FY 2023-2024, 22 stations EI have been commissioned till date (March 2024). However, out of the 43 stations planned for 2023-24, 21 stations are yet to be interlocked.

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64 **Whitefield, Devangonthi, Malur and Taykal**

65 **Kelamangalam, Periyanagathunai, Rayakkottai, Marandahalli, Palakkodu, Toppur and Karuvalli**

66 **Whitefield, Devangonthi and Taykal**

(v) **Mobile Train Radio Communication System (MTRCS)** MTRCS is an effective and a technologically advanced communication system which can play an intrinsic role in preventing train accidents and reducing delays through effective communication. It facilitates an instant and constant interaction of train crew with the Control Centre and the Station Master.

Review of implementation of the above projects revealed that neither had SWR proposed for these projects nor were these sanctioned by Railway Board.

(vi) **Signalling Maintenance Management System (SMMS)** Centre for Railway Information System (CRIS) was implementing Signalling Maintenance Management System in NR, WCR, ER and SCR to facilitate predictive maintenance of signalling assets (Railway Board letter dated 28/12/2018). Predictive maintenance system facilitates online monitoring and forewarns about the health of the signalling gears for taking corrective actions before any unusual occurrence and also drastically brings down cases of signal failures.

In SWR, no action has been initiated for implementing SMMS.

2.9.14 Computerised Train Signal Registers (CTSR)

A Train Signal Register shall be kept by the Station Master and all signals received or sent on the electrical block instruments and the timings of receipt and despatch shall be entered therein, immediately after acknowledgment, by the person operating the block instrument. At present, data is manually entered by the Station Master every time a train crosses the station. This process was automated by CRIS which records all actual details of passing trains. This results in high level of transparency and leaves the Station Master with more time to concentrate on safety aspects. Moreover, there is no possibility of altering or fudging the data. The Computerised Train Signal Registers (CTSR) is a legal document and can be very useful as a genuine source of information during enquiries in to accidents, *etc*.

In SWR, CTSR was implemented in only six stations of Hubballi Division i.e. Bellary, Hosapete, Toranagallu, Hubballi, Londa and Bijapur. The reasons for non-implementing CTSR in all stations were not on record.

Further, out of the above six stations, CTSR was functioning in one station (Londa) only. In the other five stations, CTSRs were not functioning since the station building had been shifted to other locations consequent on doubling of the section. CTSR is not yet connected to the new station building by CRIS.

Non-implementation of CTSR resulted in continuation of manual systems of entering data in TSR which is time consuming and is prone to breach of data integrity, and therefore the aforementioned benefits of CTSR remain unattained. Further it was observed that no work was sanctioned for implementing CTSR in any of the Divisions of SWR.

It was replied by Railway Administration that implementation of CTSR is to be done by Operating department and modernisation has been taken up based on the necessity.

However, SWR should have an upgradation plan in place for adopting the latest technologies available for S&T systems for facilitating efficient maintenance and safe train operations.

Audit Objective-III: Whether S&T works were sanctioned and executed timely to achieve the intended objectives

2.9.15 Progress of Signalling and Telecommunication Works

Railways' aim is to have a collision-free system, by way of timely renewal of signalling assets, replacement of signalling gears, completing track circuiting, interlocking of manned level crossings, provision of Block Proving Axle Counter, *etc*. Therefore, all works connected with renewal/replacement of signalling assets are to be completed within the specified time on priority.

In SWR, 62 works are in progress under Plan Head-33, as on March 2023. A sample of five works per division (15 works for SWR), was selected for review.

Out of these 15 works, six works were completed during the review period**.** All these six works were completed with considerable delays ranging from six months to three years.

(Annexure- 2.3)

The remaining nine works were in progress as on September 2023. Physical progress of four works was zero. The progress of the remaining five works is as detailed below:

(i) **Provision of MSDAC at Dudhsagar, Caranzol & Sonalim of UBL Division:** Letter of Acceptance was issued in November 2022 with Targeted Date of Completion (TDC) as August 2023. Since the work was not completed, TDC was revised up to March 2024. However, the physical progress was still 50 *per cent* only as on March 2024, which indicated that substantial portion of work was yet to be completed. Thus, the objective of providing redundant MSDAC to

bank upon in the event of failure of the existing conventional track circuit systems, remained unfulfilled.

(ii) **Reliability improvement work for signalling installations:** Letter of Acceptance was issued in July 2022 with TDC as January 2023. Since the work was not completed, TDC was revised up to January 2024. However, the physical progress was 55 *per cent* only as on March 2024, which indicated that substantial portion of work was yet to be completed. Thus, the objective of improving the reliability of signalling installations, remained unfulfilled.

(iii) **Replacement of conventional domino panel with VDU at 10 stations - MYS Division:** Detailed Estimate for the above work was still under process as on March 2024. Conventional domino panel occupies a lot of space and involves technical complexities, lot of wiring, additional interface circuits, contact problem of push buttons, switches, *etc*., whereas dual Visual Display Units (VDU) are technically superior and more reliable. In view of the technological advantages regarding maintainability and reliability, VDUs are to be provided at the stations at the earliest.

Delay in providing State of the Art Visual Display Units (VDU) in these 10 stations resulted in continued dependence on the over-aged domino panels which are prone to failure anytime. This has rendered the signalling systems vulnerable to failures. Action for replacement of these overaged panels are to be expedited in order to ensure safe train operations.

(iv) **Predictive Maintenance System for SBC-WFD Auto-Section & 10 Stations - SBC Division:** Predictive maintenance system (PMS) will assist in online monitoring of the health of the signalling gears for taking corrective actions before any unusual occurrence. PMS also improves punctuality of trains by preventing cancellation of trains on account of signalling failures. In this regard, the above work was sanctioned in 2021-22. However, the Memorandum of Understanding with Indian Institute of Technology – Madras (IITM) – the executing institution for designing predictive maintenance tool is yet to be finalised. Therefore, this work has still not been started as on March 2024 despite being sanctioned.

Delay in providing PMS has denied the Railways the facility of an online remote system for monitoring the condition of signalling equipments to prevent unusual incidences and thus ensure safe train operations.

(v) **Replacement of overaged panel interlocking with Electronic Interlocking - SBC Division:** The work was sanctioned in 2022-23. Financial bid was opened in June 2023 and the tender was under finalisation for replacement of over-aged interlocking systems (at 7 stations) commissioned during 1995-96 and which had completed their service life of 25 years. The existing panel interlocking was planned to be replaced with Electronic Interlocking with centralised operation of points and signals. Therefore, the replacement was urgently required to ensure safe operations.

Delay in execution could lead to unsafe conditions and increase in number of equipment failures, since the existing panel interlocking systems are overaged which could affect the efficiency of operations in these stations.

(Annexure 2.4)

2.9.16 Review of Priority Signalling Works identified in Vision-2024 document

Vision 2024 document for achieving 2024 MT loading by the year 2024 was shared by RB with all Zonal Railways in November 2020. The document covered the list of the identified priority projects indicating targets and the likely allocation of funds for necessary planning and execution by Zonal Railways. Among others, the Vision 2024 document identified the most critical S&T works to be completed on priority. The objective was to improve the reliability of signalling systems in stations and level crossings and provision of Train Collision Avoidance System (TCAS) and Automatic Block Signalling (ABS) in stations.

In SWR, 16 capacity enhancement projects were identified and prioritised to be completed by March 2024. All 16 works were reviewed to study the status. Out of these 16 identified works, 11 works were completed as on March 2023.

(Annexure 2.5)

The status of the remaining five works, which were stated to be in progress, are as detailed below:

(i) **Provision of long-term evolution system on low-density railway network in connection with Train Collision Avoidance System:** The work was sanctioned in 2020-21 for providing TCAS for 1563 route kilometres, for a value of ₹ 313 crore. The detailed estimate was under preparation (March 2024). This work is to be executed

simultaneously with the work of provision of TCAS as detailed under Sl. No. (ii).

(ii) **Provision of indigenous train collision avoidance system on low density railway network for 1563 route kilometre:** The work was sanctioned in 2020-21 for a value of ₹ 469 crore. Even after lapse of more than three years of sanction, the detailed estimate had not been prepared for the work (March 2024). Non-execution of the above two works resulted in non-availability of TCAS in SWR and thus the envisaged benefits of the works to improve the reliability of signalling systems in stations, level crossings and provision of Train Collision Avoidance System (TCAS) and Automatic Block Signalling (ABS) in stations could not be obtained.

(iii) **Provision of Tunnel radio system in Castle Rock-Kulem section:** The work was sanctioned in 2018-19 for a value of ₹ 12 crore. The work is still in progress as of March 2024 even after a lapse of five years since sanction with physical progress of 70 *per cent*. It was replied by Railway Administration that the installation works of communication systems inside tunnel Nos. 4 to 16 have already been completed and Works inside tunnel Nos. 1, 2 & 3 are expected to be over by 31 July 2024. Availability of block in the *ghat* section and intense monsoon in the section hindered the progress of the work in the section. However, a detailed review of the work revealed the reasons for delay as detailed below:

- Castlerock- Kulem (CLR-QLM) section is in the ghat section which has a number of tunnels and curves, and there was no telecommunication system to exchange signals between drivers and guards. Railway Board awarded the work to Rail Tel Corporation of India Ltd., (RCIL) in November 2020, which was to be completed in 12 months by October 2021. RCIL awarded the contract to OEM – M/s Vista Information System (P) Ltd., New Delhi in March 2021.
- The planned radio system consists of Optimal Master Unit (OMU) and Optical Remote Units (ORU). ORUs in tunnels are connected through Optic Fibre Cable, for transmitting with OMUs. ORUs are connected with leaky co-axial cables (LCX) for communication inside the tunnel and with antenna for communication outside the tunnel.
- The scope of work was stated to be misjudged by RCIL. As per the actual scope of work, VHF communication coverage was to be

provided in the entire stretch of CLR-QLM *ghat* section of 27 KM, both inside and outside the tunnels (total 16 numbers). However, RCIL construed that communication was to be provided inside and surrounding areas of the tunnels only. This has led to installation of antenna system with a range of a mere 50 metre vis-à-vis the required range of 5 to 8 km. which was not accepted by South Western Railway since it did not serve the intended purpose. Later on RCIL agreed (March 2024) to provide communication system in the entire stretch of 27 KMs as per the original scope of work and submitted an estimate for ₹ 12.54 crore. Thus, the cost of work escalated to ₹ 30 crore as against the revised cost of ₹ 18 crore. Since RCIL agreed to execute the work as per the original scope of work, SWR had no other issues.

Delay in execution resulted in non-availability of an efficient communication system in the critical ghat section making it vulnerable to accidents.

Review of the present status revealed the work is still in progress as on August 2024 (physical progress – 70 *per cent*, financial progress – 61 *per cent*) with works in 15 out of 16 tunnels completed. OFC has been completed for 11 kms only and power supply for the Tunnel Radio System is planned to be provided while executing electrification of the section. These facts suggest that substantial work is still pending. Therefore, the targeted date of completion was revised to December 2024.

(iv) Upgradation of signalling gears

The work was sanctioned in 2020-21 for a value of ₹ 219 crore. The umbrella work consisted of 22 itemised works (UBL - 8, MYS- 9 and SBC- 5). Out of 22 works, only two were completed, nine are in progress and 11 are yet to be sanctioned and executed (March 2024).

(Annexure 2.6)

(v) Replacement/provision of telecom assets with multiprotocol level switching / internet protocol-based technology

The work was sanctioned in 2020-21 for a value of ₹ 13.16 crore. The work was awarded to RCIL in July 2022 and was planned to be executed in two phases – Phase-I covering 73 stations and Phase-II covering 61 stations, spread across three divisions of SWR. However, none of the phases has been completed even after lapse of three years of sanction. The objective of the work was to provide

a robust and reliable communication network which is a pre-requisite for applications such as e-Office, Material Management Information System (MMIS), Integrated Payroll & Accounting System (IPAS), Indian Railway Electronic Procurement System (IREPS), *etc*. Also, the network could be scaled to support Video Surveillance System (VSS), Wi-Fi, VC & Internet of Things (IoT), *etc*. Delay in execution of the work resulted in continuance with the existing inefficient system of communication which might not effectively support the e-applications.

It was replied that the currency of agreement awarded to RCIL was extended up to 31 October 2023 due to disruption in supply chain of electronic and electric goods and on account of shortage of semi-conductors. The same shall be commissioned by June 2024 and all work over SWR is targeted for completion by March 2025.

The reply of the SWR administration is not convincing. The pace of the progress of work on the basis of the expenditure made so far (₹ 0.72 crore) was still at 5 *per cent* of the sanctioned cost.

The matter was referred to MoR in January 2025; no reply was received (March 2025).

2.10 Conclusion

The audit revealed that there were substantial cases of signal failures in SWR, at an average of 2,961 incidents per annum, reflecting poorly on the reliability and availability of signalling systems. Though 100 *per cent* of required maintenance blocks were granted, cases of signal failures continued to take place in substantial numbers. A total of six cases of Signal Passing at Danger (SPAD) were reported during the review period. Though the cases of accidents in SWR are declining, cases of SPAD and cases of non-setting of facing points to unoccupied lines after receiving the previous trains at several stations, are a cause for concern.

Safety audit had also pointed out several irregular maintenance practices. Most of the observations were repetitive which suggests that constant monitoring was absent. There were several instances of abnormal delays in attending to deficiencies pointed out during inspections/joint inspections by the safety department.

Several cases of disconnection/reconnection of signalling equipments were done in contravention to Railway Board orders which mandated that no disconnection/reconnection should be resorted to, without issue of disconnection memo to the Station Master and obtaining necessary approvals. Maintenance staff are not strictly adhering to the stipulated

rules regarding disconnection and reconnection of signalling gears which may result in accidents

Incidences of OFC and signal cable cuts continued unabated leading to equipment failures and disruption to signalling and telecommunication services. Integrated Cable Route Plan has not been prepared yet. Issues pertaining to sharing of Cable Plans with contractors and lack of co-ordination between Signalling and Engineering departments continue to persist.

There was no upgradation plan *per se* for upgrading the existing signalling assets with technologically advanced systems.

Large number of Manned Level Crossings with TVUs more than 50,000 and 20,000 had been interlocked. However, six MLCs with TVUs more than 50,000 were yet to be interlocked in MYS Division. Similarly, 57 MLCs with TVUs more than 20,000 were yet to be interlocked in SWR.

Automatic Fire Detection and Alarm Systems were yet to be provided in 67 stations and Emergency Sliding Booms (ESB) are yet to be provided at 206 level crossings as on March 2023. Signal Maintenance Management Systems (SMMS) for facilitating predictive maintenance of signalling assets and implementation of Computerised Train Signal Registers are yet to be implemented in SWR.

Important works such as replacement of conventional panels with advanced Visual Display Units (VDU), replacement of overaged signalling gears, replacement of overaged interlocking systems with Electronic Interlocking systems and implementation of Predictive Maintenance System are yet to be completed.

2.11 Recommendations

- ***Signal equipment failures, though showing a declining trend, are taking place in significant numbers. Maintenance mechanisms are required to be made more effective to avoid the incidences of signal failures.***
- ***Disconnection/reconnections of signalling assets are to be done as per rules. Maintenance staff are to be counselled for addressing signalling issues.***
- ***Preventive action is required to be taken for averting incidences of cable cuts by way of effective supervision at the locations of works under execution. Integrated Cable Route Plan may be prepared and the same uploaded on the website for access by all stakeholders.***

- *An upgradation plan for replacing/upgrading of S&T assets/ gears may be prepared at RB to guide implementation of advanced signalling systems in a phased manner.*
- *On-going projects pertaining to S&T and Vision-2024 works should be completed in a time bound manner to obtain the benefits envisaged from these projects.*

New Delhi
Dated: 07 Nov. 2025

(PRAVIR PANDEY)
Addl. Dy. Comptroller and Auditor General

Countersigned

New Delhi
Dated: 10 Nov. 2025

(K. SANJAY MURTHY)
Comptroller and Auditor General of India

Annexures

Annexure- 1.1
Statement showing the zone-wise number of sidings selected for test check
(Reference Paragraph- 1.7)

Sl. No	Zone	No of sidings	Criteria	No of selected sidings
1	CR	63	• Review of 25 *per cent of* the total number of private sidings in operation in a ZR as on 31st March 2023 subject to the minimum of 10 and maximum of 25 sidings were selected for review. • The sidings were selected based on quantum of traffic handled by the sidings during the last five years (2018-19 to 2022-23). • Sidings handling any of the six major commodities i.e. (i) coal, iron and other ores, (ii) POL, (iii) cement, (iv) fertilisers, (v) food grains and (vi) pig iron and steel were considered. • Container Traffic was excluded from this review.	19
2	ECoR	77		20
3	ECR	122		25
4	ER	51		15
5	NCR	33		10
6	NER	8		8
7	NFR	32		10
8	NR	81		21
9	NWR	29		10
10	SCR	83		23
11	SECR	126		25
12	SER	76		19
13	SR	74		20
14	SWR	35		12
15	WCR	50		16
16	WR	67		16
Total		**1007**		**269**

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
CR	CSTM	M/S Jsw Steel Ltd. -JSWD	7-Jun-13	…
CR		M/S Jsw Steel Coated Products Ltd. -JSWV	22-Jul-13	…
CR		Rastriya Chemical And Fert.Siding Thal Vaishet,Pe -TVSG	11-Jan-07	…
CR		M/S Bulk Cement Corporation Ltd. Sdg Kalamboli -BCCK	14-Dec-06	…
CR		Food Corpn. Of India Sdg, Kalamboli Exchange Yard -KFCG	23-Nov-06	…
CR		Rastriya Chemical Siding, Trombay -FZSG	19-Jan-07	…
CR		Bharat Petroleum Corporation Siding, Trombay -BRSG	NAV	…
CR		Hindustan Petroleum Corporation Siding, Trombay -VOSG	8-May-12	…
CR	BSL	Maharastra State Elect Board Sdg, Bhusaval -MFSG	12-Dec-18	…
CR		Mseb Thermal Power Station Sdg, Odha - MQSG	8-Nov-06	…
CR		Orient Cement Siding Bhadli -OCSB	17-Oct-14	…
CR		Grain Depot Siding (FCI) Manmad -GDSG	30-Nov-11	…
CR	NGP	Ghugus Colliery Sdg, Ghugus - GSG	Not executed	…
CR		New Thermal Power Station Sdg, Chandrapur -NTPG	14-Jan-07	…
CR		Umred Colliery Siding, Buti Bori -UMSG	Not executed	…
CR	SUR	Pol Siding Of Ioc Ltd. -HPSG	NAV	…
CR		Birla Super Cement Siding(Grasim Cement), Hotgi J -MBSH	NAV	…
CR		Associate Cement Co. Ltd. Sdg -WDSG	NAV	…
CR		M/S National Thermal Power Corporation Ltd -PSNH	NAV	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
ECoR	KUR	Dhamra Port Company Limited, Bhadrak -DPCB	1-Nov-15	…
ECoR		IOC Siding, Paradeep -IOSP	28-Oct-05	…
ECoR		ADB Coal Handling Plant -PPAP	28-Jun-93	…
ECoR		M/S.Indian Farmers Fertiliser Co-Operative Ltd. -PMIP	28-Jun-93	…
ECoR		Ramco Cements Limited -CLH	3-Dec-20	…
ECoR		M/S Dalmia Cement (Bharat) Ltd., Byree -MOIB	21-Aug-09	…
ECoR		M/S Tata Steel Bsl Limited, Meramandali -MBMB	20-Oct-09	…
ECoR		M/S. Jindal Steel And Power Ltd., Kerejanga -JSPK	29-Jan-14	…
ECoR		FCI Siding, Khurda Road -FCKR	23-Sep-05	…
ECoR		Anata Colliery Siding, Talcher -ACTR	Not executed	…
ECoR		Tata Steel Limited, Jakhapura -TSLJ	26-Nov-15	…
ECoR		South Balanda-Jagannath Colliery Siding, Talcher -SBCT	Not executed	…
ECoR		Lingaraj Mgr Of M/S Mcl, Talcher -LMGT	10-Feb-14	…
ECoR	WAT	Ntpc'S Simhadri Thermal Power Station, Duvvada -STDV	1-Oct-07	…
ECoR		M/S. Adani Gangavaram Port Pvt Ltd, Visakhapatnam -MGPV	19-Mar-10	…
ECoR		Visakhapatnam Steel Plant Siding, Visakhapatnam -VSPS	6-Jul-13	…
ECoR		Visakhapatnam Port - VZP	11-Mar-11	…
ECoR		Vishakapatnam Port B Siding (Ioc) Vpt -VZPB	11-Mar-11	…
ECoR		FCI Siding Gnanapuram, Vpt -FCIG	11-Mar-11	…
ECoR		Coromandel Fertiliser Ltd Siding Vpt -CFVS	11-Mar-11	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
ECR	DNR	HPCL Pol Siding -HPSB	20-Mar-14	…
ECR		M/S Pristine Magadh Infrastucture Pvt. Ltd. -MPIB	1-Oct-15	…
ECR		FCI Pvt Siding Phulwari Sharif -FCPD	10-Dec-90	…
ECR		FCI Siding Mokama -FCMI	6-Oct-86	…
ECR		FCI Siding Buxar -FFSB	20-Nov-91	…
ECR		Barh Super Thermal Power Project -BSPB	28-Jun-13	…
ECR		Ultra Tech Cement Ltd.:Unit Patliputra Cement Works - UCPD	22-Dec-17	…
ECR	DHN	Pol (Ioc, Hpc And Bpc) Siding Dhanbad -PIDH	NAV	…
ECR		Jindal Steel& Power Ltd. Pvt. Siding -JSPP	10-Jan-13	…
ECR		Hindalco Industries Ltd. -HACG	10-Dec-01	…
ECR		Grasim Industries Ltd. -PKCI	23-May-16	…
ECR		Koderma Thermal Power Station -KPSH	6-Jan-20	…
ECR		Dudhichua Siding -DCSN	Not Executed	…
ECR		Dudhichua Wharfwall Sdg -DWWS	Not Executed	…
ECR		Nigahi Wharfwall Ncl Siding -NWSN	Not Executed	…
ECR		Jayanth Colliery Siding -JCSS	Not Executed	…
ECR		Kusunda Colliery Sdg -KSDK	Not Executed	…
ECR		JB No 9 Colliery Siding -JNCP	Not Executed	…
ECR		JGB No. 6 Colliery Siding, Patherdih -JCSP	Not Executed	…
ECR		Chasnalla (T.B.Sdg) -CCSP	Not Executed	…
ECR		Ck West Collery Sdg -CKWP	Not Executed	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
ECR	DHN	Fci Sdg, Dhanbad - FCD	NAV	…
ECR		Birds Sonda Colliery Siding -BSDC	Not Executed	…
ECR		Central Sonda Colliery Siding -CSCP	Not Executed	…
ECR		Kusunda Siding -KDSK	Not Executed	…
ER	SDAH	M/S. Cesc Ltd. -MCES	7-Jun-18	…
ER		Central Food Depot/Fci -CFDI	16-Dec-88	…
ER	HWH	West Bengal Power Development Corporation -WBPC	23-Oct-19	…
ER	MLDT	Wbpdcl, Manigram -PSPM	Not executed	…
ER		Ntpc, Farakka -FSTP	7-Feb-86	…
ER		Ntpc, Kahalgaon -NTKS	28-Jul-89	…
ER		Sonar Bangla Cement -MCCS	16-Apr-18	…
ER	ASN	Durgapur Steel Plant -DSEY	24-Jan-73	Agreement not made available.
ER		Majia Thermal Power -MTPS	25-Jan-18	…
ER		Bakreswar Thermal Power Stn -BTPC	6-Jan-18	…
ER		Durgapur Stps/Dvc -DSTP	22-Dec-17	…
ER		Shyam Sel & Power Ltd. -SSPL	9-Sep-22	Provision of FM Circular 6 of 2020 was not incorporated
ER		Emami Cement Ltd. -PECP	27-Sep-18	…
ER		Nuvoco Vista Corpn Ltd. -PMLR	1-Dec-17	…
ER		Matix Fertlisers & Chemicals -MFCP	12-Feb-20	Provision of FM Circular 6 of 2020 was not incorporated

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
NCR	PRYJ	Prayagraj Power Generation Co.Limited, Bara -PPGS	22-Sep-15	…
NCR		National Thermal Power House Sdg, Dadri -NTCD	26-Mar-12	…
NCR		M/S Meja Urja Nigam (P) Limited Unchdih -MUNU	9-Oct-20	…
NCR		M/S Jai Prakash Associates Ltd.Cement Siding ,Chunar - MJAC	7-Jan-09	…
NCR		M/S Kanpur Fertilisers & Chemicals Limited,Panki -MKFP	8-Apr-22	…
NCR		M/S Ultra Tech Cement Ltd. Harduaganj -UTCH	28-Nov-20	…
NCR		Gangaganj Bottling Plant (Lpg), Panki - LPGK	18-Jul-12	…
NCR		M/S. Steel Authority Of India Ltd. ,Panki -SATP	7-Jun-19	…
NCR	AGC	Indian Oil Corporation Ltd. Mathura Refinery Bad -IOCG	16-Nov-84	…
NCR		Food Corporation Of India,Siding Agra Cant -FGSG	4-Jan-13	…
NFR	KIR	Numaligarh Refinery Oil Siding, (Pvt./Bg) -NRSR	5-Aug-09	…
NFR	APDJ	Ntpc Limited (Pvt./Bg) -SNTP	22-Jun-20	…
NFR	RNY	Bongaigaon R & Petro Chemical Ltd., (Pvt/Bg) -BRPN	8-Apr-16	…
NFR		FCI Siding, Changsari (Bg) -CFCC	18-Mar-15	…
NFR	LMG	FCI Siding,(Pvt./Bg), Dimapur -DMFS	12-Aug-22	…
NFR		Indian Oil Refinery Siding, (Pvt/ Bg), Noonmati -IRPN	25-Feb-05	…
NFR		Star Cement Siding, (Pvt/Bg),Tetelia -TAR	7-Mar-19	…
NFR	TSK	Brahmaputra Valley Fertiliser Corporation Ltd., (Pvt/Bg) - NMFS	7-Jan-10	…
NFR		Numaligarh Refinery Project Siding (P) (Bg) -NMGS	28-Jan-10	…
NFR		IOCL (Bg/Pvt.) Siding, Digboi -IOGS	16-Feb-18	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
NER	IZN	Century Pulp & Paper , Lalkuan -CPML	10-May-95	…
NER		Indian Oil Corporation, Lalkuan -LIOC	31-Mar-09	…
NER	LJN	Bharat Petroleum Oil Corporation. , Gonda Katchery -BPCG	2-Mar-06	…
NER		Food Corporation Of India, Gonda Katchery - FIK	28-Apr-04	…
NER		M/S Gallant Ispat Ltd. , Sahjanwa -MGIS	24-Sep-11	…
NER		Food Corporation Of India, Gorakhpur Cantt - FCC	31-Dec-86	…
NER	BSB	Bharat Petroleum Oil Corporation. , Baitalpur -BPOB	5-Jan-07	…
NER		Food Corporation Of India, ,Banaras -GMUV	NAV	…
NR	UMB	Nabha Power Ltd. Siding -NPSB	25-Nov-13	Renewed on 20.10.2021. All terms and condition of FM 11 of 2016 has been incorporated.
NR		Dcrtpp Siding/Knz -PDTK	11-Aug-07	Renewed on 22-09-2021. All terms and condition of FM 11 of 2016 has been incorporated.
NR		Rajiv Gandhi Thermal Power Plant, Khedar Siding -PMRG	28-Jan-10	Renewed on 23-01-2020. All terms and condition of FM 11 of 2016 has been incorporated.
NR		M/S Hind Termal Pvt Ltd. Siding -GPHK	23-Oct-18	Renewed on 30-04-2020. All terms and condition of FM 11 of 2016 has been incorporated.
NR		RTP Siding - RTP	14-May-82	Renewal of agreement executed on 13-03-2020. All terms and condition of FM 11 of 2016 has been incorporated.

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
NR		Ambuja Cement Siding -GACL	4-Apr-95	Renewal of Agreement excuted on 13.03.2020 . GACL/RPAR is a co-siding of RTP/RPAR & as per agreement's para no. 11 state that the firm will be bound by the terms and conditions of the agreement for the siding with siding owners. All terms and condition of FM 11 of 2016 has been incorporated.
NR	DLI	Talwandi Sabo Power Ltd -MTSS	5-Mar-22	All terms and condition of FM 11 of 2016 has been incorporated.
NR		Sail Siding, Guldhar -SAIL	31-Jan-13	…
NR		Adani Logistics Siding, Patli -PDLL	15-Nov-21	All terms and condition of FM 11 of 2016 has been incorporated.
NR		Iocl Siding, Bhauli Near, Panipat - ICB	15-Dec-10	…
NR		Hseb/Ptpp/Ptps/Pnp Siding -TPAP	21-Mar-96	…
NR		Bpcl Siding, Asaoti/Piyala -BPAG	25-Feb-11	…
NR		Actl Siding, Asaoti -MATP	13-Aug-08	…
NR		Fci Siding, Pehowa Road -FCPP	29-Mar-18	…
NR	FZR	Gvk Power Thermal Plants, Khadur Sahib -GVKK	10-June-14	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
NR	LKO	Feroze Gandhi Thermal Power Project Sdg -FGTP	27-Jul-06	…
NR		Tanda Thermal Power House, Tanda -TTPH	20-Mar-07	…
NR		M/S. Reliance Cement Company Private Limited, Kvg -PSMR	27-Sep-16	Agreement was executed after of circular no. 11 of 2016. The Period/validity of agreement was not mentioned in agreement.
NR		Acc Tikaria Cement Works Sdg, Guari Ganj -ACCG	30-Mar-06	…
NR	MB	M/S. Rosa Power Supply Company -PMRP	28-Oct-10	…
NR		M/S. Iffco Aonila Siding, Basharatganj -IFAB	6-Nov-87	…
NWR	AII	Laxmi Cement Siding/, Bns -LCTS	25-Feb-21	…
NWR		Ultra Tech Nathdwara Cement Limited , Kvjn -UNCK	14-Aug-19	…
NWR		Shree Cement Company Limited , Bngm -BNGS	1-Aug-03	…
NWR		Shree Mega Power Siding, Bngm -SMPB	30-Jan-15	…
NWR	BKN	Suratgarh Thermal Power Siding , Bdwl -STPB	1-Jul-20	…
NWR		Jhajjar Power Limited Siding ,Jharli -MJPJ	30-May-12	…
NWR		Indira Gandhi Super Thermal Power Project Siding , Sudharana -MIGK	31-Dec-15	…
NWR		Guru Govind Singh Refinery Project Hpcl- Mittal Energy Limited Siding , Rrk -HMEL	10-May-12	…
NWR	JP	Kribhco Infrastructure Limited, Pali -KIIP	16-Aug-12	…
NWR		Sanjvik Terminal Private Limited Siding Bdwl -MSTB	30-Jan-15	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
SCR	SC	Central Screening Plant Colliery -CSPS	30-Sep-83	Rider Agt. Dt 03-08-2021
SCR		Godavari Khani No.6 Colliery -GXSG	25-Nov-76	Rider Agt dt.22-09-2021
SCR		M/S. Ultra Tech Cement Ltd. (Rajashree Cements Ltd) - UTCM	19-Jun-84	…
SCR		Low Temperature Carbonisation Plant Colliery - LTC	12-Mar-13	Rider Agt on.14-02-2022
SCR		M/S. Ultra Tech Cement Ltd. (Manikgarh Cements Ltd) - UTCG	20-Aug-86	Rider Agt dt. 23-07-2021
SCR		M/S. Ramco Cements Ltd., (Madras Cements Ltd.) -MRCJ	14-Mar-88	Rider Agt.dt.23-07-2021
SCR		Singareni Collieries Co.Ltd -MSCA	31-Oct-18	…
SCR		M/S. Ambuja Cement Ltd., (Maratha Cement) -MCNP	12-Feb-02	Rider Agt.dt.23-07-2021
SCR		M/S Kesoram Industries Ltd (Vasavadatta Cement Ltd.) - VCSG	19-Feb-86	Rider Agt.dt.23-07-2021
SCR		M/S. Ultra Tech Cement Ltd. -UCLG	20-Aug-86	Rider Agt.dt.23-07-21
SCR		M/S.Orient Cement Ltd., Siding -OCIM	2-Jan-89	Rider Agt dt.17-09-2021
SCR		M/S. Ultratech Cement Siding (M/S Jaypee Balaji Cement Plant Mjcr) -UTCR	27-Jul-17	Rider Agt.dt.23-07-2021
SCR		National Thermal Power Corporation -NTPC	16-Apr-07	Rider Agt dt..17-09-2021
SCR		M/S.Kalburgi Cement Pvt. Ltd., (Vicat Sagar) -KBCT	1-Oct-15	Rider Agt.dt.17-09-2021
SCR		Hindustan Petroleum Corporation Ltd. -HPCG	12-Jun-98	…
SCR		Kesoram Cement Ltd. -KCCS	4-May-68	Rider Agt.dt.23-07-2021
SCR		Food Corporation Of India - CFS	23-Dec-60	…
SCR		Hindustan Petroleum Corporation Ltd. -HPCS	5-Jan-86	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
SCR	BZA	M/S. Adani Krishnapatanam Port Company Ltd. Yard.1 -AKPK	NAV	As the siding is in Jurisidiction of KRCL SPV line, S.C.Railway has an O & M Agreement with KRCL. In turn KRCL an agreement with AKPK
SCR		M/S. Kakinada Seaport -KSLK	19-Nov-04	Rider Agt.Dt.01-02-2022
SCR		M/S. Coromandel International Ltd., -PGFC	18-May-09	Rider Agt.dt.03-11-2021
SCR		Nagarjuna Fertilisers & Chemicals Ltd. -NGFS	18-May-09	Rider Agt.dt.27-01-2022
SCR		M/S. Tata Iron & Steel Co. Siding -TISM	12-May-09	…
SECR	BSP	In Plant Yard Of (Parsa Kante Mines) M/S Sarguja Rail Corridor Pvt. Ltd. -PSRS	20-Apr-18	…
SECR		New Kusumunda Colliery Sdg.,Korba -NKCR	26-Jul-07	…
SECR		Gevra Project (Junadih - I To Iv), Colliery -GPCK	27-Oct-18	…
SECR		Jindal Steel & Power Ltd., Kirodimal Nagar -JSLK	20-Nov-07	…
SECR		Belpahar Open Cast Mines No.6&7, (Bocm-6&7) -BOMB	20-Oct-16	…
SECR		Old Kusminda Colliery, Gevra, Road -OKSR	Not executed	…
SECR		Private Siding Junadih Rapid Loading,System Of Secl -JRGR	27-Oct-18	…
SECR		Kanika Siding Of Mcl, Himgir -MCLK	5-Jul-06	…
SECR		Belpahar Open Cast Mines I & Ii -BOCM	Not executed	…
SECR		Belpahar Open Cast Mines Iii -BOCB	Not executed	…
SECR		Sanjay Gandhi Thermal Power, House -SGTP	16-Apr-08	…
SECR		Kusmunda (Silo) Private Siding Of Secl -KMKA	NAV	…
SECR		Lajkura Open Cast Mines-Iii Sdg., Belpahar -LOCM	Not executed	…
SECR		Dipka Siding Of Secl -DSGR	8-Aug-07	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
SECR	R	Bhilai Steel Plant Construction, -BSPC	13-Jun-13	…
SECR		Ultra Tech Cement Ltd Sdg., Hathband (Rawan) -MGCH	10-Aug-10	…
SECR		Ambuja Cements Ltd. -MRLB	16-Apr-07	…
SECR		Kondey Siding (Dallirajhara) -KSDJ	22-Jul-13	…
SECR		Gmr Chhattisgarh Energy Ltd. (New Name M/S Raipur Energen Ltd.) -MGMT	30-Jun-16	…
SECR		Iot Infrastructure And Energy Services, Limited -IIEL	28-Aug-15	…
SECR		Fci Siding , Mandir Hasaud -FCMH	24-Jul-09	…
SECR	NGP	Adani Power Maharashtra Ltd.,(Phase-I) -PMAM	8-Nov-12	…
SECR		Mauda Super Thermal Power Project,(NTPC Ltd.) -MSPC	12-Sep-13	…
SECR		Koradih Thermal Power Station Sdg.,Kulamna -KRDS	28-Mar-14	…
SECR		Mseb Thermal Power Plant, (Kpkd) -MTPK	28-Mar-14	…
SER	ADRA	Bokaro Steel Plant Of M/S Sail -BSCS	27-Dec-18	Relevant clauses in the agreement for realising various siding related charges was conformed to prescribed rules/codal provisions
SER		M/S Iisco/Sail Taking Off From Damodar Station -IISD	30-Jan-14	…
SER		Food Corporation Of India -FCIP	10-Nov-17	Relevant clauses in the agreement for realising various siding related charges was conformed to prescribed rules/codal provisions

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
SER		Santaldih Thermal Power Station -STPS	5-Jul-17	Relevant clauses in the agreement for realising various siding related charges was conformed to prescribed rules/codal provisions
SER	CKP	Rope Way Of M/S Tisco -MTRN	19-Jan-89	…
SER		Joda East Direct Entry Of M/S Tata Steel At Banspani -JMTC	7-May-12	…
SER		M/S Mahanadi Coadfield At Sardega -MFSJ	NAV	…
SER		M/S Tisco'S Work Side - TWS	NAV	…
SER		Plant Yard Of M/S Jindal Steel & Power -PJPD	25-Mar-14	…
SER		Bolani Fine Ore M/S Bolani Ore Private Ltd -BYFS	15-Oct-92	…
SER		M/S Dalmia Cement (Bharat) Limited [Formerly M/S Ocl India Ltd.] -OCIG	1-Mar-04	…
SER		M/S Nuvoco Vistas Corporation Limited [Previously M/S Lafarge India Ltd. (Formerly Jojobera Cement Plant Siding) At Tatanagar] -JBCT	7-Aug-17	…
SER		M/S Banspani Iron Ltd -IOJB	8-Oct-12	…
SER		Lump Ore And Fine Ore M/S Iisco -ISCG	27-Oct-05	…
SER		M/S Hindustan Steel Plant Of M/S Sail -HSPG	NAV	…
SER		Meghataburu Iron Ore Desposit Of M/S Sail -SSMK	10-Jun-05	…
SER	KGP	M/S Kolaghat Thermal Power Station Of M/S Wbseb -KPPS	11-Oct-17	Relevant clauses in the agreement for realising various siding related charges was conformed to prescribed rules/codal provisions. However, agreement was renewed on 09.02.2022

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
SER		M/S Indorma India Private Limited -TCLD	24-Aug-20	Relevant clauses in the agreement for realising various siding related charges was conformed to prescribed rules/codal provisions
SER		M/S Rashmi Metaliks -PMRN	15-Oct-07	Agreement was executed prior to circular no. 11 0f 2016. However, agreement was renewed on 20.06.2018
SR	MAS	Kamarajar Port Container Terminal Siding # Attipattu -KPCA	31-Mar-17	Agreement was executed after issue of circular no. 11 0f 2016 and provisions incorporated in the agreement
SR		Thermal Power Plant Siding # Attipattu -AIPS	20-Sep-89	…
SR		Ennore Coal Terminal Pvt Ltd Sdg, Attipattu -AIPO	31-Oct-18	Agreement was executed after issue of circular no. 11 0f 2016 and provisions incorporated in the agreement
SR		Fci Siding, Avadi -FCSA	3-Apr-08	…
SR		IOC Siding,Tondiarpet Marshalling Yard -TNPS	9-Jul-19	Agreement was executed after issue of circular no. 11 0f 2016
SR		MFL Tondiarpet Marshalling Yard -TNFS	29-Jun-18	Agreement was executed after issue of circular no. 11 0f 2016
SR		Tata Iron & Steel Siding, Tirunindravur -TISR	9-May-08	…
SR	TVC	Fact Siding, Irumpanam -ERNF	17-Feb-12	…
SR		Bpc Ltd Siding Irumpanam -BPCI	30-Jun-17	…
SR		Bpc Ltd – Kr Siding Irumpanam -BKRI	30-Jun-17	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
SR	PGT	Mangalore Chemicals & Fertilisers Siding, Panamburu -PNMC	5-Apr-07	…
SR		Udupi Power Corpn Ltd Sdg, Panamburu -PNMP	17-Jun-10	…
SR		Mangalore Coal Terminal Private Ltd Siding, Panamburu -MCTP	16-Jul-19	Agreement executed with provisions of FM circular 11 of 2016
SR	SA	Bpcl Sdg, Irugur -BPOI	8-Apr-19	…
SR		Jsw Steel Ltd Siding , Mecheri Road -MCSI	5-Jan-11	…
SR		Chettinad Cement Corpn Sdg, Palayam -PLMC	12-Jun-18	Agreement was executed after issue of circular no. 11 0f 2016 but provisions not incorporated in the agreement.
SR	TPJ	Dalmia Cement Sdg, Kallakudi Palanganatham -KKPS	3-May-16	…
SR		Karaikal Port Pvt Sdg , Nagore -KIKP	20-Jan-10	Rider agreement dt. 22-06-2017
SR		Taqa Neyveli Power Corp Sdg,Vadalur - VLX	25-Jan-16	…
SR	MDU	Spic Siding, Milavittan -MVNP	21-Feb-22	…
SWR	SBC	Birla Super Bulk Terminal , Doddaballapur -BSBD	22-Mar-99	…
SWR		Acc Limited Siding , Tondebhavi -MAPT	9-Aug-12	…
SWR		Food Corporation Of India Siding , Whitefield -WFCS	11-Feb-88	…
SWR		Oil Terminal For Bpcl Hpcl & Iocl , Devangonthi -DKNS	1-Feb-97	…
SWR	UBL	Food Corporation Of India Siding , Hubballi - FIH	1-Dec-06	…
SWR		Jsw Steel Limited Siding , Tornagallu -JSWT	16-Jan-07	…
SWR		M/S National Thermal Power Corporation Siding , Kudgi -KSNK	8-Mar-17	…
SWR		Bellari Thermal Power Siding , Kudatini -BTPK	25-Nov-08	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
SWR	UBL	Bmm Ispat Siding , Vyasankeri -MBIV	13-Nov-07	…
SWR		Zuari Industries Siding , Sankval - ZCS	30-Mar-07	…
SWR	MYS	M/S, Mineral Enterprises Ltd. , Chikjajur -MMEC	5-Feb-11	…
SWR		M/S Hindustan Petroleum Corporation Ltd. Siding , Hassan - HPCH	25-Mar-13	…
WCR	JBP	Reliance Cement Co. Pvt. Ltd. -CPB	6-Nov-19	…
WCR		Ultratech Cement Ltd. Unit Maihar -UCLM	10-Dec-19	…
WCR		Keymore Cement Siding Acc Ltd. -JQSG	29-Feb-16	…
WCR		Birla Corp. Ltd. Satna Cement Works -BCSW	8-Mar-16	…
WCR		Pol Siding M/S Bpcl Ltd. -PLBG	7-Mar-17	…
WCR		Lpg Bpcl Siding Bhitoni -LPBG	11-Feb-17	…
WCR		Ntpc Gadarwara Railway Siding -NTPB	18-Feb-21	…
WCR		Diamond Cement Siding Damoh -DDSG	2-Mar-16	…
WCR		Bokaro Steel Ltd. Siding. Khbj -BLSG	13-Jul-15	…
WCR		Nm Dubash Siding Jukehi -NMDJ	10-Jan-17	…
WCR	KOTA	Chambal Fertilisers Corp. Ltd. Siding -CFCS	13-Oct-10	…
WCR		Adani Power Rajasthan Limited Siding -APLS	6-Feb-13	…
WCR		Managlam Cement Limited Morak -MCTS	1-Aug-16	…
WCR		Chhabara Thermal Powers Siding -PCMC	25-Sep-09	…
WCR		Acc Limited Siding Lakheri -LKES	9-Jul-16	…
WCR		Dcm Shriram Ltd. Dadhdevi -DSLD	8-Jul-16	…

Annexure- 1.2 Statement showing Agreement details with private siding owners (Reference Paragraph- 1.8.1)				
ZR	**Division**	**Name/Code of Private sidings selected for review**	**Date of Agreement**	**Remarks**
1	**2**	**3**	**4**	**5**
WR	ADI	M/S. Iffco – Gandhidham -IFFG	6-Feb-14	…
WR	BCT	M/S. Fci- Kandivali -FCIV	11-Jul-12	…
WR	BRC	Geb Siding- Wanakbori -TSWS	3-Oct-07	…
WR		Gujarat State Fertilisers & Chemicals Ltd Siding Bajwa -GSFS	17-Jul-09	…
WR		Kribhco Siding -KBCS	Not executed	…
WR		Adani Petronet (Dahej) Port Ltd. -MAPD	14-Dec-18	…
WR		Gujarat Narmada Valley Fertiliser & Chemicals Siding -GNVS	23-Feb-10	…
WR	BVP	Pipavav Siding -PPSP	21-Aug-09	…
WR	RJT	Reliance Rail Terminal-Kanalus -PRTK	5-Dec-12	…
WR		Tata Chemical Ltd. Siding. -Bhimrana -TCLS	7-Dec-12	…
WR		Reliance Soild Cargo Siding- Kanalus -RPCK	5-Dec-12	…
WR		Nayara Energy Limited – Modpur -NELM	19-Sep-07	…
WR	RTM	Ultratech(Vikram) Cement Ltd. Siding Jawad Road -VCSN	19-Sep-17	…
WR		Ultratech Cement Ltd. Siding Shambhupura - ACS	19-Sep-17	…
WR		Wonder Cement Ltd. Siding -WCSG	27-Sep-13	…
WR		J.K. Cement Ltd. Siding Mangrol Gambhiriroad -JKCG	25-Oct-16	…

Annexure- 1.3
Statement showing the number of sidings and the range of delays in recovery of various charges
(Reference Paragraph- 1.8.4)

Component	No. of sidings where charges were recoverable	No. of sidings where delay noticed	Range of delays (in days)	No. of sidings
Land License Fee	193	178 (92.2 per cent)	Upto 1000	152 (Max. in NR-18)
			1001-1825	26 (Max. in SER-08)
Repair & Maintenance	114	100 (87.7 per cent)	Upto 1000	74 (Max. in CR-13)
				08 (Max. in SCR-04)
			1001-1825	26 (Max. in NR-07)
Staff Cost	175	171 (97.7 per cent)	Upto 1000	131 (Max. in SCR-13)
			1001-1825	40 (Max. in SCR-10)
Demurrage Charge	255	211 (82.7 per cent)	Upto 1000	206 (Max. in ECR and SECR-23 each)
			1001-1825	05 (NR-02, SECR-02, SR-01)
Inspection Charge	207	167 (80.7 per cent)	Upto 1000	59 (Max. in CR-13)
			1001-1825	108 (Max. in SECR-24)
Siding Charge	59	37 (62.7 per cent)	Upto 1000	36 (Max. in ECR-08)
			1001-1825	01 (NCR-01)
ART Charge	131	127 (96.9per cent)	Upto 1000	100 (Max. in SECR-22)
			1001-1825	27 (Max. in CR-15)
Damage & Deficiency	104	101 (97.1 per cent)	Upto 1000	68 (Max. in SECR and ECoR 09 each)
			1001-1825	33 (Max. in WCR-08)
Punitive Charge	92	16 (17.4 per cent)	Upto 1000	09 (Max. in SER-04)
			1001-1825	07 (Max. in SR-02)

Annexure- 1.3
Statement showing the number of sidings and the range of delays in recovery of various charges
(Reference Paragraph- 1.8.4)

Component	No. of sidings where charges were recoverable	No. of sidings where delay noticed	Range of delays (in days)	No. of sidings
Shunting Charge	82	58 (70.7 per cent)	Upto 1000	56 (Max. in SECR-12)
			1001-1825	02(SER-01, ECR-01)
S&T Assets inspection charges	15	13 (86.7 per cent)	Upto 1000	05 (Max. in WR-03
			1001-1825	08(Max. in WR-05)
OHE Theft charges	04	04 (100 per cent)	Upto 1000	04 (Max. in WCR-02)
Stabling Charges	14	08 (57.1 per cent)	Upto 1000	08 (Max. in CR and NWR 02 each)
Detention Charges for test wagon	72	40 (55.6 per cent)	Upto 1000	39 (Max. in WR-07)
			1001-1825	01(NWR-01)

Annexure- 1 .4
Statement showing Land License Fees
(Reference Paragraph- 1.8.5)

(Fig in unit of ₹)

Zone	No. of Sidings	No. of Siding not utilising Rly Land	No. of Siding utilising Rly Land	No information Available	Outstanding as on 01-04-2018 (6A+6B)	By Railway Book	Assessed by Audit	Accrued during 2018-23 (7A+7B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 6 + Col. 7 - Col. 8)	Interest accrued due to delay payment	Total Outstanding including Interest (Col. 9 + Col. 10)
1	2	3	4	5	6	6A	6B	7	7A	7B	8	9	10	11
CR	19	2	17	0	13901378968	13901378968	0	6360041863	6348655249	11386614	99387568	20162033263	11362649797	31524683060
ECOR	20	9	11	0	528954	528954	0	395039848	395039848	0	394605822	962980	24305844	25268824
ECR	25	16	9	0	0	0	0	183080559	183080559	0	77110574	105969985	47045569	153015554
ER	15	7	8	0	9073307	9073307	0	42776365	42776365	0	39363392	12486280	10843877	23330157
NCR	10	5	5	0	25766212	25766212	0	123095204	123095204	0	92214388	56647028	49770707	106417735
NER	8	0	8	0	3372406	3372406	0	43267234	43267234	0	46591536	48104	4100948	4149052
NFR	10	2	8	0	0	0	0	46158886	46158886	0	38921853	7237033	5747748	12984781
NR	21	1	20	0	0	0	0	544321096	541880778	2440318	524545111	19775985	20777250	40553235
NWR	10	0	10	0	3204148	3204148	0	29583081	29583081	0	23603606	9183623	5452883	14636506
SCR	23	9	14	0	0	0	0	31614520	31614520	0	25060587	6553933	3284962	9838895
SECR	25	9	16	0	31746408	31746408	0	39272844	39272844	0	25948040	45071213	27722620	72793833
SER	19	0	17	2	214013605	214013605	0	660759416	254666971	406092445	135133211	739639810	196533033	936172843
SR	20	11	9	0	1134122	1134122	0	59855461	59855461	0	59292391	1697192	2407684	4104876
SWR	12	0	12	0	40632422	40632422	0	161394999	161394999	0	61451744	140575677	61841208	202416885

Annexure- 1.4
Statement showing Land License Fees
(Reference Paragraph- 1.8.5)

(Fig in unit of ₹)

Zone	No. of Sidings	No. of Siding not utilising Rly Land	No. of Siding utilising Rly Land	No information Available	Outstanding as on 01-04-2018 (6A+6B)	By Railway Book	Asse-ssed by Audit	Accrued during 2018-23 (7A+7B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 6 + Col. 7 - Col. 8)	Interest accrued due to delay payment	Total Oustanding including Interest (Col. 9 + Col. 10)
1	2	3	4	5	6	6A	6B	7	7A	7B	8	9	10	11
WCR	16	2	14	0	592499	592499	0	152287577	152287577	0	112209510	40670566	17809632	58480198
WR	16	1	15	0	0	0	0	446165601	445706305	459296	445706305	459296	24734095	25193392
Total	**269**	**74**	**193**	**2**	**14231443051**	**14231443051**	**0**	**9318714555**	**8898335882**	**420378673**	**2201145638**	**21349011968**	**11865027856**	**33214039824**

Annexure- 1.5
Statement showing Repair & Maintenance Charge
(Reference Paragraph- 1.8.6)

(Fig in unit of ₹)

Zone	No. of Sidings	R & M not done by Railway	R & M done by Railway	Bill raised by railway	Assessed by audit	Outstanding as on 01-04-2018 (7A+7B)	By Railway Book	Assessed by Audit	Accrued during 2018-23 (8A+8B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 7 + Col. 8 - Col. 9)	Interest accrued due to delay payment	Total Outstanding including Interest (Col.10 + Col. 11)
1	2	3	4	5	6	7	7A	7B	8	8A	8B	9	10	11	12
CR	19	4	15	15	0	184556	184556	0	902207609	902207609	0	450078590	452313575	95878066	548191641
ECOR	20	18	2	2	0	0	0	0	1316194273	1316194273	0	984996131	331198142	0	331198142
ECR	25	23	2	2	0	609016	609016	0	4438212	4438212	0	597896	4449332	1749300	6198632
ER	15	13	2	1	1	0	0	0	50559640	9151000	41408640	7498000	43061640	16660514	59722154
NCR	10	9	1	1	0	0	0	0	242365809	242365809	0	184165884	58199925	17354245	75554170
NER	8	7	1	1	0	9828000	9828000	0	5460000	5460000	0	0	15288000	2199240	17487240
NFR	10	0	10	8	2	2300000	2300000	0	806391186	774439696	31951490	663671533	145019653	110460464	255480117
NR	21	12	9	9	0	7612834	7612834	0	161470979	161470979	0	45350505	123733308	39838727	163572035
NWR	10	2	8	4	4	43981787	43981787	0	63528197	31261034	32267163	37215471	70294513	44438039	114732552
SCR	23	14	9	9	0	0	0	0	63025939	63025939	0	52561628	10464311	6252529	16716840
SECR	25	19	6	6	0	2078000	2078000	0	729000	729000	0	2807000	0	1244737	1244737
SER	19	14	5	1	4	40319813	40319813	0	281111589	0	281111589	0	321431402	107094753	428526155
SR	20	11	9	9	0	38690000	38690000	0	155658726	155658726	0	152698814	41649912	35509534	77159446
SWR	12	0	12	12	0	0	0	0	197834723	197834723	0	176576240	21258483	5712549	26971032
WCR	16	7	9	9	0	111492954	111492954	0	164785781	164785781	0	138123879	138154856	84635303	222790159
WR	16	2	14	14	0	5347487	5347487	0	180143835	180143835	0	159209596	26281726	15303047	41584773
Total	**269**	**155**	**114**	**103**	**11**	**262444447**	**262444447**	**0**	**4595905498**	**4209166616**	**386738882**	**3055551167**	**1802798778**	**584331047**	**2387129825**

Annexure- 1.6
Statement showing Inspection charges of Civil Engineering Asset
(Reference Paragraph- 1.8.6.1)

(Fig in unit of ₹)

Zone	No. of Sidings	Inspection not done by Railway	Inspection done by Railway	Bill raised by railway	Assessed by audit	Outstanding as on 01-04-2018 (7A+7B)	By Railway Book	Assessed by Audit	Accrued during 2018-23 (8A+8B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 7 + Col. 8 - Col. 9)	Interest accrued due to delay payment	Total Outstanding including Interest (Col.10 + Col. 11)
1	2	4	3	5	6	7	7A	7B	8	8A	8B	9	10	11	12
CR	19	0	19	10	9	0	0	0	17492932	12902932	4590000	0	17492932	3569067	21061999
ECOR	20	0	20	16	4	4873594	4873594	0	38805963	22408216	16397747	2542825	41136732	16103620	57240352
ECR	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0
ER	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0
NCR	10	0	10	1	9	0	0	0	19203342	0	19203342	0	19203342	7187072	26390414
NER	8	0	8	5	3	250614	0	250614	1787364	569217	1218148	569217	1468763	479423	1948186
NFR	10	0	10	8	2	0	0	0	2022201	0	2022201	0	2022200	769155	2791355
NR	21	4	17	7	10	0	0	0	27487933	7624508	19863425	0	27487933	9893778	37381711
NWR	10	2	8	4	4	10457732	2811452	7646280	21200805	6361453	14839352	8174278	23484259	13258601	36742860
SCR	23	14	9	9	0	0	0	0	0	0	0	0	0	0	0
SECR	25	0	25	0	25	0	0	0	40082540	0	40082540	0	40082540	15054414	55136955
SER	19	2	17	5	12	0	0	0	67851737	18859570	48992167	7354938	60496799	24124509	84621308
SR	20	0	20	11	9	3730000	3730000	0	14137288	11188750	2948538	1538500	16328788	7269185	23597973
SWR	12	0	12	12	0	0	0	0	7193364	7193364	0	7158605	34759	84325	119084
WCR	16	0	16	15	1	187559	187559	0	17902680	17146164	756516	15940339	2149900	2576288	4726188
WR	16	0	16	12	4	5504023	4550384	953639	34527635	26863157	7664478	8370069	31661589	26096483	57758072
TOTAL	**269**	**62**	**207**	**115**	**92**	**25003522**	**16152989**	**8850533**	**309695784**	**131117331**	**178578454**	**51648771**	**283050536**	**126465919**	**409516455**

Annexure 1.7
Statement Showing Cost of commercial staff posted in the siding
(Reference Paragraph - 1.8.7)

(Fig in unit of ₹)

Zone	No. of Sidings	No. of Siding where staff cost not applicable	No of Sidings where bill raised	Bill not raised and assessed by Audit	No information Available	Outstanding as on 01-04-2018 (7A+7B)	By Railway Book	Assessed by Audit	Accrued during 2018-23 (8A+8B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 7 + Col. 8 - Col. 9)	Interest accrued due to delay payment	Total Outstanding including Interest (Col.10 + Col. 11)
1	2	3	4	5	6	7	7A	7B	8	8A	8B	9	10	11	12
CR	19	0	19	0	0	39107766	39107766	0	214284801	214284801	0	217642358	35750209	59057873	94808082
ECOR	20	5	13	0	2	1211333	1211333	0	228123619	228123619	0	107431227	121903725	55522437	177426162
ECR	25	11	10	0	4	29435043	29435043	0	104308166	104308166	0	54922468	78820741	43001158	121821899
ER	15	8	6	0	1	621042	621042	0	190100083	190100083	0	188640587	2080538	30484715	32565253
NCR	10	5	5	0	0	3349756	3349756	0	74471925	67463770	7008155	35079438	42742243	22446132	65188375
NER	8	1	0	7	0	185843602	0	185843602	136396812	0	136396812	1548528	320691886	171350150	492042036
NFR	10	1	8	1	0	836067	836067	0	95161293	90301785	4859508	59480062	36517298	21379497	57896795
NR	21	4	17	0	0	210597596	210597596	0	216036863	167294969	48741894	171424596	255209863	144044014	399253877
NWR	10	5	5	0	0	8723940	8723940	0	70264311	70264311	0	59211813	19776438	14027792	33804230
SCR	23	0	23	0	0	0	0	0	251942080	251942080	0	228876833	23065247	42145691	65210938
SECR	25	11	14	0	0	7224889	7224889	0	261330630	261330630	0	253404560	15150959	36014799	51165758
SER	19	11	8	0	0	19319727	19319727	0	106641526	106641526	0	107429954	18531299	14297099	32828398
SR	20	6	14	0	0	3449738	3449738	0	214122605	214122605	0	153430756	64141587	40020845	104162432
SWR	12	6	6	0	0	0	0	0	105963382	80012088	25951294	58408705	47554677	39316556	86871233
WCR	16	7	9	0	0	5606622	5606622	0	100254118	100254118	0	90169597	15691143	17675332	33366475
WR	16	5	11	0	0	6000000	6000000	0	198479088	198479088	0	193472023	11007065	23298855	34305920
Total	**269**	**87**	**167**	**8**	**7**	**521327121**	**335483519**	**185843602**	**2567881302**	**2344923639**	**222957663**	**1980573505**	**1108634918**	**774082946**	**1882717864**

Annexure- 1.8
Statement showing Demurrage Charges
(Reference Paragraph - 1.8.8)

(Fig in unit of ₹)

Zone	No. of Sidings	where charge not accrued	where charge accrued	Outstanding as on 01-04-2018 (5A+5B)	By Railway Book	Assessed by Audit	Accrued during 2018-23 (6A+6B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 5 + Col. 6 - Col. 7)	Interest accrued due to delay payment	Total Outstanding including Interest (Col. 8 + Col. 9)
1	2	3	4	5	5A	5B	6	6A	6B	7	8	9	10
CR	19	0	19	102320771	102320771	0	1963802921	1963802921	0	2033831118	32292574	122024000	154316574
ECOR	20	4	16	7317063	7317063	0	4529498541	4529498541	0	4532841147	3974457	71644321	75618778
ECR	25	0	25	132181088	132181088	0	938707100	938707100	0	789728049	281160139	256380266	537540405
ER	15	0	15	6614360	6614360	0	1339393434	1339393434	0	1321201477	24806317	31467265	56273582
NCR	10	1	9	1823198	1823198	0	390246823	390246823	0	381113643	10956378	9286401	20242779
NER	8	1	7	0	0	0	25764275	25764275	0	25755297	8978	138564	147542
NFR	10	0	10	2576072	2576072	0	212135710	212135710	0	213136242	1575540	6129290	7704830
NR	21	3	18	4046602	4046602	0	1167287872	1167287872	0	1042226217	129108257	80779207	209887464
NWR	10	0	10	5891400	5891400	0	432205246	432205246	0	386373321	51723325	7903506	59626831
SCR	23	1	22	5117933	5117933	0	785863879	785863879	0	765369406	25612406	3094158	28706564
SECR	25	0	25	217740294	217740294	0	3542060305	3542060305	0	3455399755	304400844	240893584	545294428
SER	19	0	19	74135495	74135495	0	3638250318	3638250318	0	3698842301	13543512	87644440	101187952
SR	20	1	19	6785807	6785807	0	209267730	209267730	0	215474371	579166	5468633	6047799
SWR	12	2	10	21450	21450	0	2515790168	2515790168	0	2515781618	30000	350	30350
WCR	16	1	15	0	0	0	686125099	686125099	0	682978692	3146407	289711	3436118
WR	16	0	16	313651	313651	0	613376769	613376769	0	613690420	0	684209	684209
TOTAL	**269**	**14**	**255**	**566885184**	**566885184**	**0**	**22989776190**	**22989776190**	**0**	**22673743074**	**882918300**	**923827905**	**1806746205**

Annexure -1.9
Statement showing Siding Charge
(Reference Paragraph - 1.8.9)

(Fig in unit of ₹)

Zone	No. of Sidings	Siding charge not applicable	Siding charge applicable	No. of siding in which siding charge is being raised by Railway	No. of siding in which siding charge is not being raised by Railway but assessed by audit	Outstanding as on 01-04-2018 (7A+7B)	By Railway Book	Assessed by Audit	Accrued during 2018-23 (8A+8B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 7 + Col. 8 - Col. 9)	Interest accrued due to delay payment	Total Outstanding including Interest (Col.10 + Col. 11)
1	2	3	4	5	6	7	7A	7B	8	8A	8B	9	10	11	12
CR	19	12	7	7	0	959280	959280	0	162902947	162902947	0	162435687	1426540	3166495	4593035
ECoR	20	19	1	1	0	190356	190356	0	6563154	6563154	0	6753510	0	0	0
ECR	25	15	10	10	0	2553275	2553275	0	497311470	497311470	0	466369510	33495235	7750340	41245575
ER	15	13	2	2	0	0	0	0	359865921	359865921	0	359865921	0	4723058	4723058
NCR	10	7	3	2	1	479529	479529	0	98517429	90589269	7928160	89913852	9083106	2556526	11639632
NER	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0
NFR	10	2	8	8	0	1506837	1506837	0	239340604	217359634	21980970	217506307	23341134	6320610	29661744
NR	21	15	6	6	0	62705292	62705292	0	1006532515	1006532515	0	775919512	293318295	106629609	399947904
NWR	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0
SCR	23	20	3	3	0	0	0	0	205674852	205674852	0	205674852	0	204396	204396
SECR	25	24	1	1	0	0	0	0	47432418	47432418	0	47432418	0	430852	430852
SER	19	18	1	1	0	0	0	0	80723511	80723511	0	80723511	0	928718	928718
SR	20	11	9	9	0	4472244	4472244	0	713379432	651328180	62051252	652516209	65335467	34700	65370167
SWR	12	8	4	4	0	0	0	0	628291473	628291473	0	628291473	0	354405	354405
WCR	16	14	2	2	0	0	0	0	89612875	89612875	0	89612875	0	0	0
WR	16	14	2	2	0	0	0	0	184723636	184723636	0	184723636	0	18120	18120
Total	**269**	**210**	**59**	**58**	**1**	**72866813**	**72866813**	**0**	**4320872237**	**4228911855**	**91960382**	**3967739273**	**425999777**	**133117829**	**559117606**

Annexure -1.10
Statement showing Accident Relief Train Charge
(Reference Paragraph 1.8.10)

(Fig in unit of ₹)

Zone	No. of Sidings	where charge not accrued	where charge accrued	Outstanding as on 01-04-2018 (5A+5B)	By Railway Book	Assessed by Audit	Accrued during 2018-23 (6A+6B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 5 + Col. 6 - Col. 7)	Interest accrued due to delay payment	Total Outstanding including Interest (Col. 8 + Col. 9)
1	2	3	4	5	5A	5B	6	6A	6B	7	8	9	10
CR	19	4	15	9976925	9976925	0	35993009	35993009	0	6102994	39866940	16900820	56767760
ECOR	20	12	8	0	0	0	39929319	39929319	0	33619163	6310156	1309778	7619934
ECR	25	12	13	0	0	0	33848449	33848449	0	10469218	23379231	5285977	28665208
ER	15	6	9	0		0	23412079	23412079	0	22805701	606378	1250428	1856806
NCR	10	6	4	0	0	0	8525656	8525656	0	8525656	0	428050	428050
NER	8	6	2	0	0	0	347316	347316	0	0	347316	83589	430905
NFR	10	10	0	0		0	0	0	0	0	0	0	0
NR	21	17	4	0	0	0	6367644	6367644	0	2169575	4198068	462286	4660354
NWR	10	10	0	0	0	0	0	0	0	0	0	0	0
SCR	23	8	15	3524327	3524327	0	29813276	29813276	0	24936098	8401505	6725433	15126938
SECR	25	2	23	406346	406346	0	105648485	105648485	0	74157103	31897728	10412731	42310459
SER	19	5	14	990877	990877	0	33777577	33777577	0	33202126	1566328	4002699	5569027
SR	20	11	9	0	0	0	6938186	6938186	0	3118715	3819471	1679370	5498841
SWR	12	12	0	0	0	0	0	0	0	0	0	0	0
WCR	16	9	7	0	0	0	16422182	16422182	0	3620100	12802083	3186474	15988557
WR	16	8	8	430557	430557	0	9540335	9540335	0	8881287	1089605	766287	1855892
TOTAL	**269**	**138**	**131**	**15329032**	**15329032**	**0**	**350563513**	**350563513**	**0**	**231607736**	**134284809**	**52493921**	**186778730**

Annexure -1.11
Statement showing Damage & Deficiency Charge
(Reference Paragraph 1.8.11)

(Fig in unit of ₹)

Zone	No. of Sidings	where charge not accrued	where charge accrued	Outstanding as on 01.04.2018 (5A+5B)	By Railway Book	Assessed by Audit	Accrued during 2018-23 (6A+6B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 5 + Col. 6 - Col. 7)	Interest accrued due to delay payment	Total Outstanding including Interest (Col. 8 + Col. 9)
1	2	3	4	5	5A	5B	6	6A	6B	7	8	9	10
CR	19	8	11	15121681	15121681	0	10485428	10485428	0	9496314	16110795	7982429	24093224
ECOR	20	11	9	0	0	0	160777783	160777783	0	154931724	5846059	7102377	12948436
ECR	25	21	4	285000	285000	0	2437823	2437823	0	341121	2381702	1090203	3471905
ER	15	10	5	186260	186260	0	45400117	45400117	0	37943764	7642613	3487939	11130552
NCR	10	6	4	0	0	0	19750959	0	19750959	1122258	18628701	2630453	21259154
NER	8	7	1	0	0	0	1051585	0	1051585	738260	313325	82387	395712
NFR	10	10	0	0	0	0	0	0	0	0	0	0	0
NR	21	12	9	0	0	0	14613938	14613938	0	2682491	11931447	1849044	13780491
NWR	10	3	7	9325125	0	9325125	8532667	0	8532667	2773176	15084616	7790542	22875158
SCR	23	14	9	0	0	0	13038491	13038491	0	6763259	6275232	923438	7198670
SECR	25	16	9	2667849	2667849	0	85078084	85078084	0	83437719	4308214	1612592	5920806
SER	19	11	8	863216	863216	0	120679689	120679689	0	117322240	4220665	7097628	11318293
SR	20	13	7	743430	743430	0	1515681	1515681	0	1154457	1104654	719016	1823670
SWR	12	9	3	2649052	2649052	0	5218611	5218611	0	4667744	3199918	895463	4095381
WCR	16	4	12	9918096	9918096	0	33213005	33213005	0	26156005	16975096	14417645	31392741
WR	16	10	6	0	0	0	11618954	11618954	0	546211	11072743	57922	11130665
TOTAL	**269**	**165**	**104**	**41759709**	**32434584**	**9325125**	**533412815**	**504077604**	**29335211**	**450076743**	**125095781**	**57739078**	**182834859**

Annexure- 1.12
Statement showing Punitive Charge
(Reference Paragraph - 1.8.12)

(Fig in unit of ₹)

Zone	No. of Sidings	where charge accrued	where charge not accrued	Outstanding as on 01-04-2018 (5A+5B)	By Railway Book	Assessed by Audit	Accrued during 2018-23 (6A+6B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 5 + Col. 6 - Col. 7)	Interest accrued due to delay payment	Total Outstanding including Interest (Col. 8 + Col. 9)
1	2	3	4	5	5A	5B	6	6A	6B	7	8	9	10
CR	19	6	13	52847247	52847247	0	479559324	479559324	0	479559324	52847247	34799912	87647159
ECOR	20	15	5	0	0	0	332279229	332279229	0	332279229	0	0	0
ECR	25	0	25	0	0	0	0	0	0	0	0	0	0
ER	15	1	14	610213	610213	0	126127	126127	0	736340	0	335826	335826
NCR	10	2	8	0	0	0	4038738	4038738	0	1264	4037474	94399	4131873
NER	8	0	8	0	0	0	0	0	0	0	0	0	0
NFR	10	2	8	0	0	0	1945904	1945904	0	1146680	799224	35499	834723
NR	21	1	20	133427	133427	0	0	0	0	0	133427	87863	221290
NWR	10	4	6	2889769	2889769	0	3826839	3826839	0	5077150	1639458	1370077	3009535
SCR	23	17	6	0	0	0	139069689	139069689	0	139069689	0	0	0
SECR	25	16	9	0	0	0	47413100	47413100	0	47413100	0	0	0
SER	19	7	12	6237688	6237688	0	28158312	28158312	0	28193082	6202918	1140949	7343867
SR	20	2	18	7131486	7131486	0	0	0	0	3390896	3740590	2453931	6194521
SWR	12	3	9	0	0	0	2804957	2804957	0	2804957	0	0	0
WCR	16	10	6	0	0	0	93761914	93761914	0	89863588	3898326	33510	3931836
WR	16	5	11	976605	976605	0	1179384	1179384	0	2155989	0	426321	426321
TOTAL	**269**	**92**	**177**	**70826435**	**70826435**	**0**	**1134163516**	**1134163516**	**0**	**1131691287**	**73298664**	**40778288**	**114076952**

Annexure- 1.13
Statement showing Shunting Charge
(Reference Paragraph 1.8.13)

(Fig in unit of ₹)

Zone	No. of Sidings	where charge accrued	where charge not accrued	Outstanding as on 01.04.2018 (5A+5B)	By Railway Book	Assessed by Audit	Accrued during 2018-23 (6A+6B)	By Railway Book	Assessed by Audit	Realised during 2018-23	Outstanding as on 31.03.2023 (Col. 5 + Col. 6 - Col. 7)	Interest accrued due to delay payment	Total Outstanding including Interest (Col. 8 + Col. 9)
1	2	3	4	5	5A	5B	6	6A	6B	7	8	9	10
CR	19	6	13	0	0	0	133259745	133259745	0	133259547	198	1388849	1389047
ECOR	20	3	17	0	0	0	92389605	92389605	0	86831205	5558400	1309837	6868237
ECR	25	7	18	88740	88740	0	254722979	254722979	0	250722509	4089210	10946814	15036024
ER	15	3	12	-733610	-733610	0	288306222	288306222	0	284741278	2831334	1624959	4456293
NCR	10	1	9	43800	43800	0	36154200	36154200	0	36198000	0	304049	304049
NER	8	1	7	277830	277830	0	18104154	18104154	0	18112827	269157	13865	283022
NFR	10	4	6	0	0	0	8142865	8142865	0	8128302	14563	800873	815436
NR	21	3	18	0	0	0	44228827	44228827	0	44228827	0	5092	5092
NWR	10	5	5	0	0	0	33366432	33366432	0	31281129	2085303	564916	2650219
SCR	23	10	13	7859433	7859433	0	1151936927	1151936927	0	1154825412	4970948	7457130	12428078
SECR	25	13	12	272686	272686	0	576813677	576813677	0	548127109	28959254	23075795	52035049
SER	19	4	15	861989	861989	0	51363362	51363362	0	50969361	1255990	500543	1756533
SR	20	3	17	515590	515590	0	24150670	24150670	0	22195860	2470400	93783	2564183
SWR	12	1	11	0	0	0	145242450	145242450	0	145242450	0	0	0
WCR	16	9	7	0	0	0	179933997	179933997	0	178473222	1460775	45799	1506574
WR	16	8	8	0	0	0	269700832	269669332	31500	269193612	507220	600337	1107557
TOTAL	**269**	**82**	**187**	**9186458**	**9186458**	**0**	**3307816944**	**3307785444**	**31500**	**3262530650**	**54472752**	**48732643**	**103205395**

Annexure- 2.1 Role and functions of Signaling Equipments (Reference Paragraph- 2.1)	
Equipments	**Description**
Block instrument equipment	A device used by the Station Master to ensure Absolute Block Section by giving signal to the train and indicating the status of the line i.e. Line Closed, Line Clear and Train on Line.
Multi Aspect Colour Light (MACL)	A fixed signal in which the 'INDICATIONS' are given by the colour of a light only. The red, green and yellow lights give indications to Stop Clear to go and Caution.
Block Proving Axle Counter	It is an electrical device provided at two given points on the track, proves whether the section of the track between the said two points is clear or occupied, by counting axles moves in and out.
Redundant Block Proving Axle Counter	Additional Axle Counter provided along with the existing device to act as back up.
Single Section Digital Axle Counter (SSDAC)	Single Section Digital Axle Counter is generally used to monitor single track section.
High Availability-SSDAC (HASSDAC)	It is an advanced version of SSDAC. Redundancy features provided in HASSDAC ensures higher availability of systems.
Multi Section Digital Axle Counter(MSDAC)	Multi Section Digital Axle Counter is a Digital Axle Counter used to monitor more than a single track section either at Stations or in Block sections.
Electronic Interlocking	Advanced interlocking system operated through computer-based systems and electronic equipment to control signals, points and level-crossing gates

Annexure- 2.1 Role and functions of Signaling Equipments (Reference Paragraph- 2.1)	
Equipments	**Description**
Centralized Traffic Control (CTC)	A system of working of trains over a route, remotely controlled from a designated place.
Train Collision Avoidance System (TCAS)	TCAS helps in preventing head on and rear end collisions. It is an automatic train protection system (ATP) that uses Radio Frequency identification tags and equipment in the locomotive to prevent collisions. (It is called 'Kavach' in Indian Railways)
Train Actuated Warning System (TAWS)	It is a highly customised solution that detects incoming trains automatically and switches on audio-visual warning devices like the Yellow/Red Warning Lights
Mobile Train Radio Communication System (MTRCS)	It is an advanced communication system which facilitates constant communication between the train Crew and Control Office to reduce delay in operations and prevent accidents.
Data Logger	It monitors signalling equipments and records the changes in the status of control and interlocking relays. It generates automatic reports for fault rectification and aids in preventive/ predictive maintenance.

Annexure- 2.2 List of non-interlocked Level Crossings of SWR (Reference Paragraph- 2.9.10)								
Sl No.	**Division**	**LC No.**	**Location**	**Eng/ Traffic****	**Section**	**Manned (M)/ Unmanned (UM)**	**Inter-locked**	**TVUs**
1	SBC	4	6/800-900	E	YNK-DHL	M	NO	26110
2	SBC	10	12/400-500	E	YNK-DHL	M	NO	23610
3	SBC	20	23/000-100	E	YNK-RNN	M	NO	64204
4	SBC	42	49/800-900	E	RMGM-CPT	M	NO	29156
5	SBC	48	81/500-600	E	MLSA-GBB	M	NO	27858
6	SBC	50	85/700-800	E	MLSA-GBB	M	NO	23958
7	SBC	56	92/600-700	E	GBB -NTR	M	NO	26558
8	SBC	60	98/600-700	E	NTR-SPGR	M	NO	22101
9	SBC	61	100-300-400	E	NTR-SPGR	M	NO	22658
10	SBC	62	101/600-700	E	NTR-SPGR	M	NO	22472
11	SBC	64	105/400-500	E	NTR-SPGR	M	NO	22974
12	SBC	77	98/100-200	E	MYA-Y	M	NO	23340
13	UBL	4	4/200-300	E	TNGL - BNHT	M	NO	57750
14	UBL	24	93/000-94/100	E	MJO-CSM	M	NO	56250
15	UBL	59	137/0-100	E	LMT -WDL	M	NO	61820
16	UBL	76	133/800-900	E	GIN-MRB	M	NO	25448
17	UBL	86	146/400-500	E	HPT - KGW	M	NO	21318

Annexure- 2.2 List of non-interlocked Level Crossings of SWR (Reference Paragraph- 2.9.10)								
Sl No.	**Division**	**LC No.**	**Location**	**Eng/ Traffic****	**Section**	**Manned (M)/ Unmanned (UM)**	**Inter-locked**	**TVUs**
18	UBL	94	173/300-400	E	GNR - TNGL	M	NO	85540
19	UBL	244	401/700-800	E	KJG-SVNR	M	NO	34732
20	UBL	276	454/000-100	E	KNO-SUBL	M	NO	128934
21	UBL	315	516/900-517/0	E	KBI-KHST	M	NO	25301
22	UBL	399	621/0-100	E	SXB-SBH	M	NO	42378
23	UBL	420	653/800-900	E	PCH-GKK	M	NO	33279
24	UBL	463	743/000-100	E	VJR-MRJ	M	NO	20453
25	UBL	19A	82/300-400	E	CNR-MAO	M	NO	29000
26	MYS	124	206/600-700	E	ASK-HRR	M	NO	27160
27	MYS	203	329/400-500	E	ASK-HRR	M	NO	25880
28	MYS	214	349/400-500	E	HRR-UBL	M	NO	23634
29	MYS	229	382/500-600	E	HRR-UBL	M	NO	29679
30	MYS	47	52/900-53/000	E	MYS-ASK	M	NO	81147
31	MYS	57	62/100-200	E	MYS-ASK	M	NO	22935
32	MYS	8	14/800-900	E	JRU-RDG	M	NO	34689
33	MYS	58	86/400-500	E	JRU-RDG	M	NO	24167

Annexure- 2.2 List of non-interlocked Level Crossings of SWR (Reference Paragraph- 2.9.10)								
Sl No.	**Division**	**LC No.**	**Location**	**Eng/ Traffic****	**Section**	**Manned (M)/ Unmanned (UM)**	**Inter-locked**	**TVUs**
34	MYS	12	13/500-600	E	RRB-SMET	M	NO	30016
35	MYS	24	36/700-800	E	RRB-SMET	M	NO	30408
36	MYS	25	37/900-38/000	E	RRB-SMET	M	NO	30167
37	MYS	35	48/700-800	E	RRB-SMET	M	NO	31575
38	MYS	38A	53/900-400	E	RRB-SMET	M	NO	32672
39	MYS	42	57/000-100	E	RRB-SMET	M	NO	30091
40	MYS	56	69/100-200	E	SMET-TLGP	M	NO	20102
41	MYS	67	81/000-100	E	SMET-TLGP	M	NO	51480
42	MYS	104	115/500-600	E	SMET-TLGP	M	NO	50964
43	MYS	126	138/000-100	E	SMET-TLGP	M	NO	20218
44	MYS	129	142/400-500	E	SMET-TLGP	M	NO	69756
45	MYS	134	145/600-700	E	SMET-TLGP	M	NO	26174
46	MYS	145	153/500-600	E	SMET-TLGP	M	NO	20252
47	MYS	147	155/000-100	E	SMET-TLGP	M	NO	20056
48	MYS	8	8/500-600	E	MYS-CMNR	M	NO	77448
49	MYS	35	40/900-41/000	E	MYS-CMNR	M	NO	20082
50	MYS	43	45/900-46/00	E	MYS-CMNR	M	NO	20070

Annexure- 2.2 List of non-interlocked Level Crossings of SWR (Reference Paragraph- 2.9.10)								
Sl No.	**Division**	**LC No.**	**Location**	**Eng/ Traffic****	**Section**	**Manned (M)/ Unmanned (UM)**	**Inter-locked**	**TVUs**
51	MYS	60	79/200-300	E	AVC-KTY	M	NO	27664
52	MYS	61	85/000-100	E	AVC-KTY	M	NO	21296
53	MYS	62	88/400-500	E	AVC-KTY	M	NO	25208
54	MYS	63	112/300-200	E	AVC-KTY	M	NO	21264
55	MYS	64	126/500-600	E	AVC-KTY	M	NO	22512
56	MYS	65	128/400-600	E	AVC-KTY	M	NO	29960
57	MYS	81	102/200-300	E	MYS-Y	M	NO	50977

Annexure- 2.3 Statement of Completed Projects (Reference Paragraph- 2.9.15)						
Sl. No	**Name of the Work Completed**	**Year of Sanction**	**Target Dated of Completion**	**Date of Completion**	**Sanctioned Cost (₹ in crore)**	**Completed Cost (₹ in crore)**
1	Upgradation of Existing centralised electronic interlocking	2020-21	14.02.2022	06.06.2023	2.21	2.82
2	Replacement of SSDAC with HASSDAC - ASK-JRU Section	2019-20	07.09.2019	10.01.2022	3.99	4.12
3	Provision of smoke & fire detection and fire extinguisher system (107 stations)	2018-19	04.11.2019	22.02.2023	6.42	5.20
4	Replacement of defective signalling cables over Hubballi Division	2019-20	21.05.2019	31.03.2022	1.78	1.82
5	Replacement of worn-out Control cum Indication Panel and Data Logger	2021-22	31.12.2021	30.06.2022	0.50	0.20
6	Replacement of SSDAC with HASSDAC in SBC-MYS Double line -Bangalore Division	2019-20	16.09.2021	04.04.2022	4.48	3.75

Annexure- 2.4 Details of Ongoing Projects (Reference Paragraph- 2.9.15)					
Sl No.	**Name of the Work**	**Year of Sanction**	**Current cost (₹ in crore)**	**Financial Progress (%)**	**Physical Progress (%)**
1	Provision of Automatic smoke, Fire detection & alarm system for Signal & Telecommunication installations at 25 stations – MYS	2021-22	2.50	47.58	90
2	Replacement of conventional domino panel with VDU at SK, RRB, NHY, PANP, BDRL, JRU, SHV, HSD, HLK & RGI –MYS	2022-23	1.03	0	0
3	Replacement of overaged signalling gears at STE, KRNR, HAH, AKK, MGF, HLN & MVC stations- MYS Division	2021-22	55.17	59.99	0
4	Provision of MSDAC as redundancy to conventional track circuit at Dudhsagar, Caranzol & Sonalim Stations- UBL	2021-22	6.25	50	50
5	Reliability improvement work for signalling installation-UBL	2021-22	1.82	55	60
6	Provision of smoke, fire detection, Alarm and Suppression system (Relay room, power/ Equipment room and panel room) @ 7 stations- SBC	2019-20	1.89	49.44	98
7	Replacement of overaged Track circuits and IPS batteries (YNK, HUP, BWT, BYPL, SBC, YPR, MYA, KPN sections)- SBC	2021-22	1.83	24.98	90
8	Predictive maintenance system for SBC-WFD Auto-Section & 10 stations-SBC	2021-22	2.39	14.01	0
9	Replacement of overaged interlocking (KMLM, PRNT, RYC, MZU, PCV, TPP and KVLR stations) with EI-SBC	2022-23	44.91	3.08	0

Annexure- 2.5
Details of works identified in Vision 2024
(Reference Paragraph- 2.9.16)

Sl. No.	Year of Sanction	Name of Work	Current Cost (₹ in crore)	Status as on March 2024
1	2018-2019	Penukonda -Dharmavaram - 2nd distant signal arrangements on B route incl. level crossings gates via Nagasamudram 6 Sri Satya Sai Prasanthi Nilayam	8	Work Completed
2	2012-2013	Hubli Division - Block proving by axle counters (28 block sections)	16	Work Completed
3	2018-2019	Hubli Division - Provision of BPAC (5 sections) & dual detection (22 blocks)	10	Work Completed
4	2018-2019	Mysore Division - Block proving axle counter high availability single section digital axle counter (7 sections)	5	Work Completed
5	2020-2021	South Western Railway - Reliability improvement, selective repl of signalling items and safety enhancement through signalling system (Umbrella Work 2019-20)	11	Work Completed
6	2020-2021	South Western Railway - Provision of long term evolution system on low density railway network in connection with train collision avoidance system (1563 rkm) (Umbrella Work 2020-21)	313	Work in progress
7	2018-2019	Castle Rock-Kulem - Tunnel radio system	8	Work in progress
8	2020-2021	Upgradation of signalling gears on South Western Railway (Umbrella Work 2020-21)	219	Work in progress
9	2018-2019	Hubli - Smoke 6 fire detection and fire extinguisher system (107stations) & provision of smoke, fire suppression system at Hubli West cabin	5	Work Completed
10	2018-2019	Hubli Division - Earth leakage detector (70 stations) & fuse auto changeover system (114 stations/cabins)	5	Work Completed
11	2016-2017	Mysore-Provision of IPS for Mysore jn.-Arsikere jn., Birur jn.-Talaguppa, Chikjajur jn.-Rayadurga section	13	Work Completed

Annexure- 2.5 Details of works identified in Vision 2024 (Reference Paragraph- 2.9.16)				
Sl. No.	**Year of Sanction**	**Name of Work**	**Current Cost (₹ in crore)**	**Status as on March 2024**
12	2020-2021	South Western Railway - Provision of indigenous train collision avoidance system on low density railway network (1563 rkm) (Umbrella Work 2020-21)	469	Work in progress
13	2012-2013	Gadag-Tadval - Optic fibre cable (200 km)	12	Work Completed
14	2016-2017	Mysore- Provision of OFC, STM & 6 PD-Mux in SMET-TLGP (Length is 97.28 Km) & DRU-CMGR (Length is 45.125 Km) section in Mysore Division	15	Work Completed
15	2020-2021	South Western Railway - Replacement of 6-quad cable (Umbrella Work 2019-20)	7	Work Completed
16	2020-2021	Replacement/provision of telecom assets with multiprotocol level switching / internet protocol based technology over South Western Railway (Umbrella Work 2020-21)	13	Work in progress

Annexure- 2.6
Status of sub-itemised works (of Umbrella works) in progress (as on March 2024)
(Reference Paragraph- 2.9.16)

Sl. No.	Name of the itemised work	Financial Progress (%)	Physical Progress (%)	Status
1	Replacement of over aged interlocking of whitefield, Devangonti, Malur, Tykal station with Electronic interlocking (2020-21- ₹ 490834)	62	NA	Tykal and Devangonthi stations were commissioned in March-2023 & May-2023. Work is in progress in other stations
2	Predictive maintenance system for SBC-WFD Section &10 stations over Bangalore division	14	0	Draft MoU between SWR & IITM is under approval
3	Replacement of overaged Track circuits and IPS batteries over SBC Division (YNK, HUP, BWT, BYPL, SBC, YPR, MYA , KPN).	7	100	Physically completed but financial adjustments are pending.
4	Replacement of conventional type block instrument with SSBPAC (D) over UBL Division (Total 36 Block sections)	89	NA	20 Block sections commissioned. Remaining 16 are in progress.
5	Provision of MSDAC as redundancy to conventional track circuit at Dudhsagar, Caranzol & Sonalim Stations over UBl Division	51	NA	Work is in progress. TDC: June 2024.
6	Hubballi Division : Reliability improvement work for signalling installation.	77	NA	Work is in progress. TDC June.2024.
7	Strengthening of Electrical Supply for S&T gears in Ghat Section (CLR-QLM Section) of Hubballi Division.	5	70	Work terminated and retendered. Tender under finalisation
8	Replacement of overaged Signalling gears at STE, KRNR, HAH, AKK, MGF, HLN &MVC stations in MYS-HAS section over MYS division.	78	NA	Out of 7 stations, 5 stations commissioned, as on March-2024. Work at AKK and KRNR are in progress.
9	Provision of automatic smoke, fire detection & alarm system for Signal & Telecommunication installations at- 25 stations	47	90	90% of work completed and variation is under process.

Abbreviations

Abbreviations

Abbreviation	Full Form
ABS	Automatic Block Signalling
AFDAS	Automatic Fire Detection and Alarm System
ASK	Arsikere
ASTE	Assistant Signalling and Telecom Engineer
ATP	Automatic Train Protection
BAY	Bellary
BGM	Belagavi
BJP	Bijapur
BKRI	BPC Ltd – Kr Siding, Irumpanam
BPAC	Block Proving Axle Counter
BPCI	BPC Ltd Siding, Irumpanam
BRPN	Bongaigaon R & Petro Chemical Ltd.
BSCS	Bokaro Steel Plant of M/s SAIL
BWT	Bangarapet
BYD	Byadgi
BYK	Baiyyappanahalli
C&AG	Comptroller and Auditor General
CN	Construction
CORE	Central Organization for Railway Electrification
CR	Central Railway
CRIS	Centre for Railway Information System
CSE	Chief Signalling Engineer
CSP	Corporate Safety Plan
CTC	Centralised Traffic Control
CTE	Chief Telecom Engineer
CTSR	Computerised Train Signal Register
DBL	Dodbele
DLMC	Data Logger Management Centre
ECoR	East Coast Railway
ECR	East Central Railway
EI	Electronic Interlocking
EMC	Electro Magnetic Compatibility
EOL	Engine on Load Scheme
ER	Eastern Railway
ERNF	Fact Siding, Irumpanam
ESB	Emergency Sliding Booms
ESM	Electric Signal Maintainer
ETCS	European Train Control System
FGSG	Food Corporation of India, Siding Agra Cant

Abbreviation	Full Form
FOIS	Freight Operations Information System
GDG	Gadag
HAS	Hassan
HPT	Hosapete
HSPG	M/S Hindustan Steel Plant of M/s SAIL
HUP	Hindupur
HQ	Headquarters
IBH	Intermediate Block Hut
IPS	Integrated Power Supply
IR	Indian Railways
IRPSM	Indian Railways Projects Sanctions & Management
IRSEM	Indian Railway Signal Engineering Manual
JE	Junior Engineer
JPO	Joint Procedure Order
JRU	Chikjajur Jn.
KDN	Kudatini
KJM	Krishnarajapuram
KPN	Kuppam
KRIDE	Rail Infrastructure Development Company (Karnataka) Limited
LC	Level Crossing
LCTS	Laxmi Cement Siding
LD	Londa
LLF	Land License Fee
MACLS	Multi Aspect Colour Light Signalling
MLC	Manned Level Crossings
MMIS	Material Management Information System
MoR	Ministry of Railways
MSDAC	Multi Section Digital Axle Counter
MT	Metric Tonne
MTRCS	Mobile Train Radio Communication Systems
MYS	Mysuru
NCR	North Central Railway
NER	North Eastern Railway
NFR	North Frontier Railway
NMGA	Nelamangala
NR	Northern Railway
NTW	Nanjangud Town
NWR	North Western Railway
OFC	Optical Fibre Cable
OHE	Over Head Equipment

Abbreviation	Full Form
PCSTE	Principal Chief Signalling and Telecom Engineer
PI	Panel Interlocking
PLCT	Paper Line Clear Ticket
PMS	Predictive Maintenance System
R & M	Repair & Maintenance
RB	Railway Board
RCIL	Rail Tel Corporation of India Ltd.
RDSO	Research, Design and Standards Organization
RE	Railway Electrification
RRI	Route Relay Interlocking
S&T	Signal and Telecommunication
SBC	Bengaluru
SCR	South Central Railway
SECR	Southeast Central Railway
SER	South Eastern Railway
SM	Station Master
SMET	Shivamogga Town
SMMS	Signalling Maintenance Management System
SPAD	Signal Passing at Danger
SR	Southern Railway
Sr. DSTE	Senior Divisional Signalling and Telecom Engineer
SSE	Senior Section Engineer
SSI	Solid State Interlocking
STPB	Suratgarh Thermal Power Siding, BDWL
SWR	South Western Railway
TAWD	Train Actuated Warning Device
TAWS	Train Actuated Warning System
TCAS	Train Collision Avoidance Systems
TDC	Targeted Date of Completion
THKU	Talaku
TNFS	MFL Siding,Tondiarpet
TNGL	Toranagallu
TNPS	IOC Siding,Tondiarpet
TPWS	Train Protection & Warning System
TVU	Train Vehicle Unit
UBL	Hubballi
UNCK	Ultra Tech Nathdwara Cement Limited, KVJN
VDU	Visual Display Unit
VHF	Very High Frequency
WCR	West Central Railway

Abbreviation	Full Form
WR	Western Railway
YNK	Yelahanka
YPR	Yeshvantpur
ZRs	Zonal Railways

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