



INDIAN RAILWAYS
ANNUAL REPORT & ACCOUNTS
2020-21

(With highlights of the performance for 2021-22)

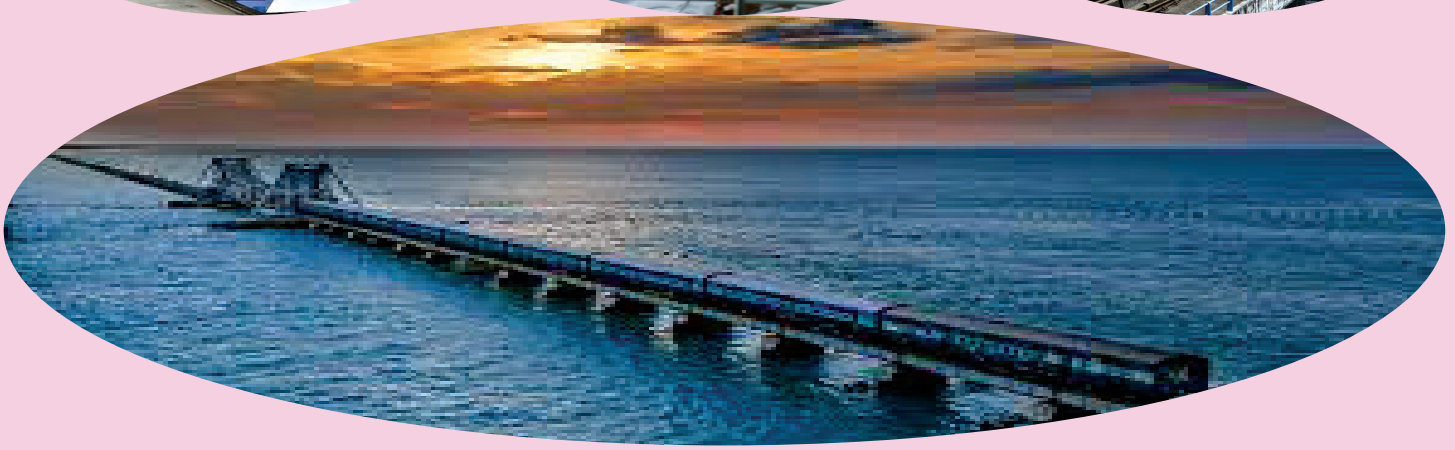












Azadi Ka Amrit Mahotsav

सत्यमेव जयते

Bharat Sarkar
Government of India
Rail Mantralaya
Ministry of Railways
(Railway Board)

INDIAN RAILWAYS

ANNUAL REPORT & ACCOUNTS
2020-21

(With highlights of the performance for 2021-22)



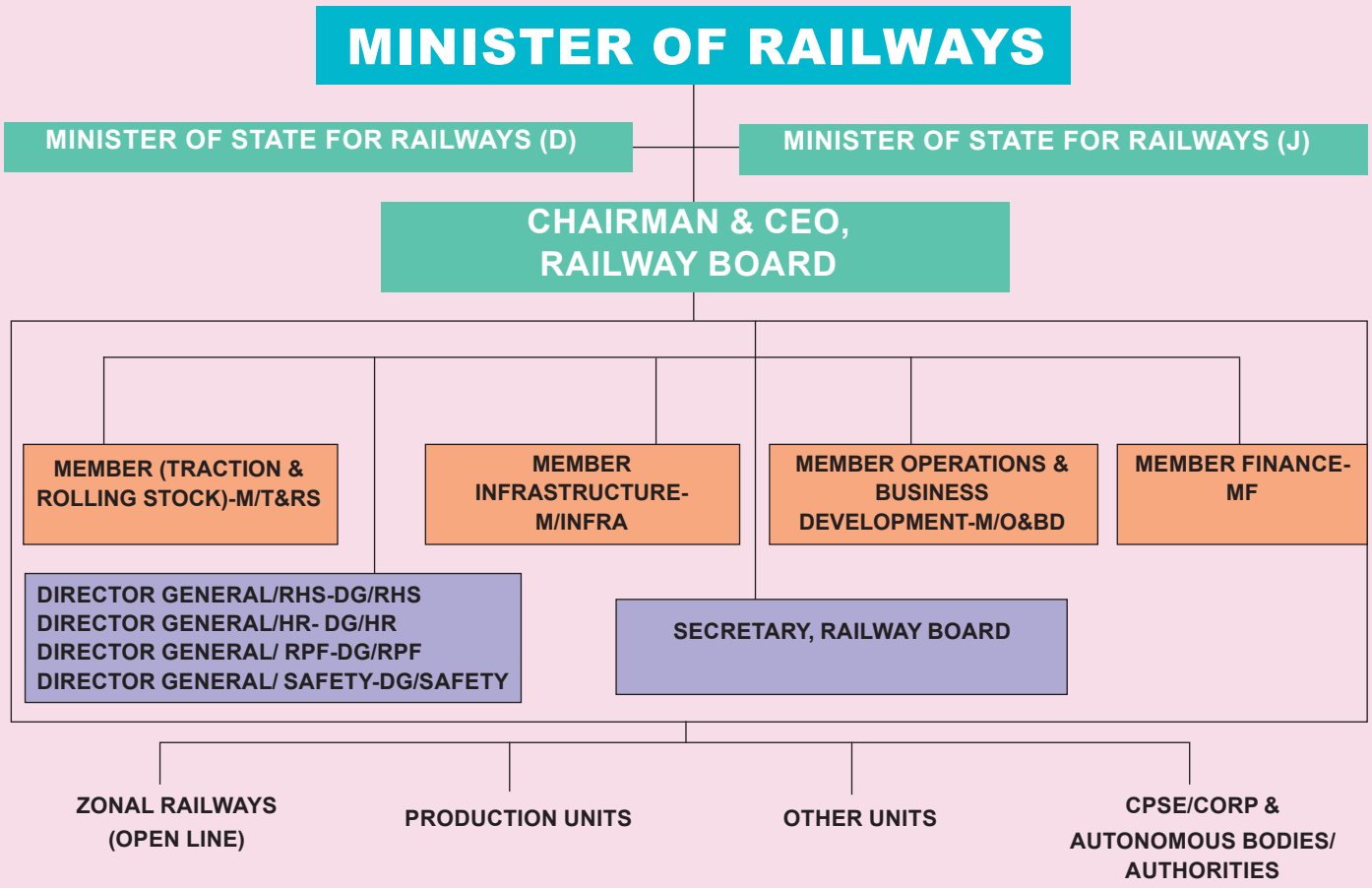


BHARAT SARKAR
GOVERNMENT OF INDIA
RAIL MANTRALAYA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

Contents

Organization Structure	2	Welfare, Development and Empowerment of Women	86
Apex Management	3		
Review–Prospects	5	Facilities to Divyangjan	87
Finance	8	Security	91
Freight Operation	14	Vigilance	95
Passenger Business	19	Promoting Hindi	97
Planning	35	North Eastern Region	99
Engineering	37	Public Relations	104
Railway Electrification	42	Railway Engineers Regiments (Territorial Army)	106
Signal and Telecom	47	Undertakings and other Organizations	109
Safety	52	Advisory Boards	141
Rolling Stock	58	Important Events	142
Material Management	66	Glossary	147
Research and Development	68	Summary of Audit Observations provided by C & AG and ATNs	149
Managing the Environment	76	Financial Statements and Operating Statistics	157
Personnel	79		

ORGANIZATION STRUCTURE OF INDIAN RAILWAYS



GENERAL MANAGERS	GENERAL MANAGERS	GENERAL MANAGERS	CPSE/CORP & AUTONOMOUS BODIES/ AUTHORITIES
1. CENTRAL	CHITTARANJAN LOCOMOTIVE WORKS, CHITTARANJAN	CENTRAL ORGANIZATION FOR RAILWAY ELECTRIFICATION, ALLAHABAD	BCL
2. EASTERN	BANARAS LOCOMOTIVE WORKS, VARANASI	NF RAILWAY (CONSTRUCTION), GUWAHATI	BSCL
3. EAST CENTRAL	INTEGRAL COACH FACTORY, PERAMBUR	CAO (R)*	BWEL
4. EAST COAST	RAIL COACH FACTORY, KAPURTHALA	CENTRAL ORGANIZATION FOR MODERNISATION OF WORKSHOPS (COFMOW)	CONCOR
5. NORTHERN	RAIL WHEEL FACTORY, YELAHANKA	DIRECTOR GENERAL	DFCCIL
6. NORTH CENTRAL	MODERN COACH FACTORY, RAE BARELI	NATIONAL ACADEMY OF INDIAN RAILWAYS, VADODARA	IRCON
7. NORTH EASTERN	CAO (R)*	DG & EX-OFFICIO GM RDSO, LUCKNOW	IRCTC
8. NORTHEAST FRONTIER	DIESEL LOCO MODERNIZATION WORKS,PATIALA		IRFC
9. NORTH WESTERN	RAIL WHEEL PLANT, BELA		KMRCL
10. SOUTHERN			KRCL
11. SOUTH CENTRAL			MRVC
12. SOUTH EASTERN			RCIL
13. SOUTH EAST CENTRAL			RITES
14. SOUTH WESTERN			RVNL
15. WESTERN			CRIS
16. WEST CENTRAL			RLDA
17. METRO			

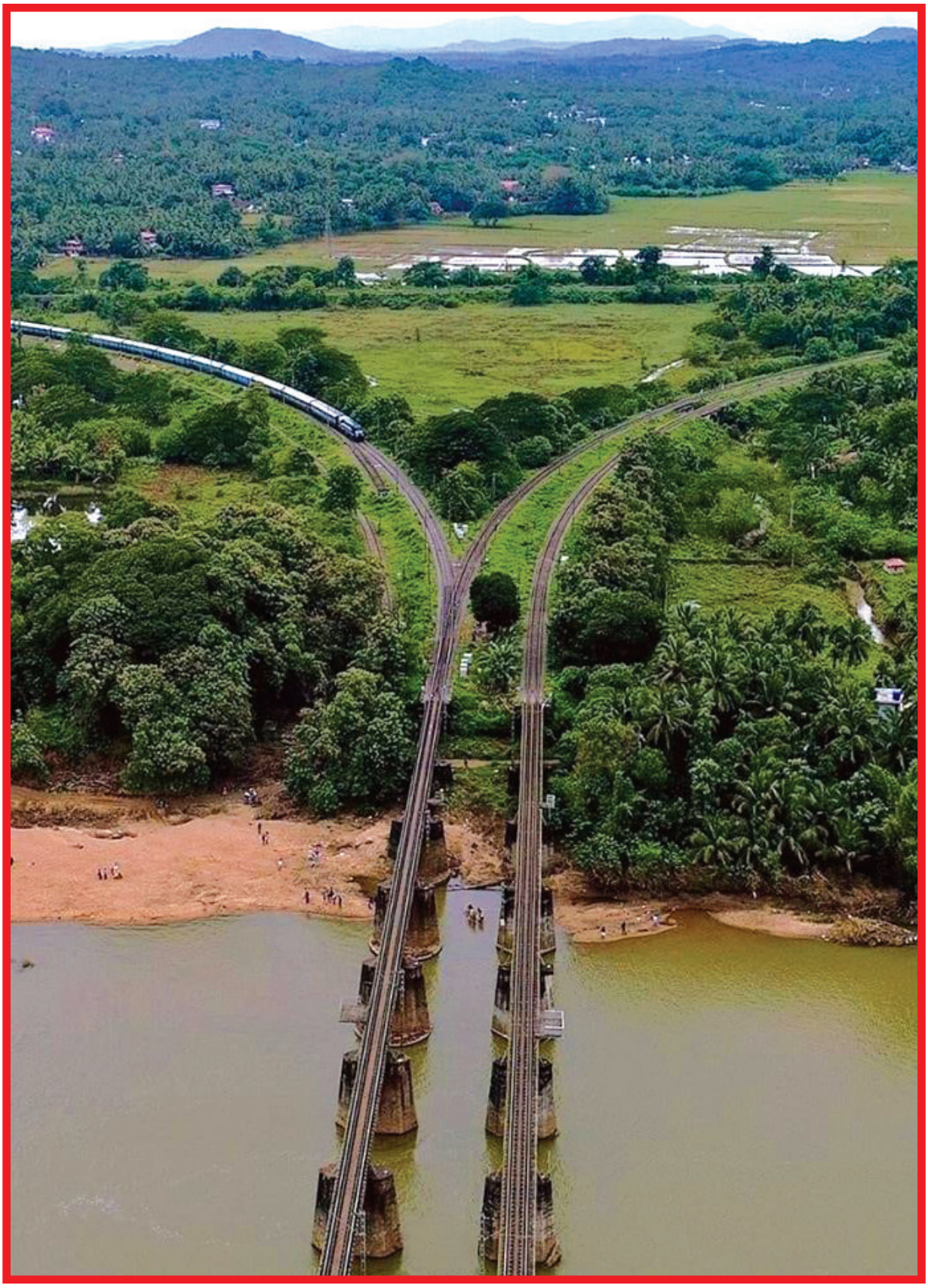
*CHIEF ADMINISTRATIVE OFFICER (RAILWAYS)

Apex Management

Minister of Railways	**Ashwini Vaishnaw**
Minister of State for Railways(J)	**Darshana Jardosh**
Minister of State for Railways(D)	**Raosaheb Patil Danve**
Members, Railway Board	
Chairman & Chief Executive officer (CEO)	V. K. Tripathi
Member (Finance)	Naresh Salecha
Member (Operation and Business Development)	Sanjay Kumar Mohanty
Member (Traction & Rolling Stock)	Sanjeev Mittal*
Member (Infrastructure)	Sanjeev Mittal
Secretary	R. N. Singh*
Directors-General	
DG/RPF	Sanjay Chander
DG/RHS	Vacant
DG/HR	Vacant
DG(Safety)	Ravinder Gupta
General Managers, Zonal Railways	
Central	Anil K. Lahoti
Eastern	Arun Arora
East Central	A. Sharma
East Coast	Archana Joshi (L/A)*
**Metro	Manoj Joshi
Northern	Ashutosh Gangal
North Central	Pramod Kumar
North Eastern	A. Sharma (L/A)*
Northeast Frontier	Anshul Gupta
North Western	Vijay Sharma
Southern	John Thomas
South Central	Sanjeev Kishore (L/A)*
South Eastern	Archana Joshi
South East Central	Alok Kumar
South Western	Sanjeev Kishore
Western	Alok Kansal
West Central	Sudhir Kumar Gupta
General Managers, Production Units	
Chittaranjan Locomotive Works	Satish K. Kashyap
Diesel Locomotive Works	Anjali Goyal
Integral Coach Factory	A. K. Agarwal
Rail Wheel Factory	Ajai Kumar Dubey
Rail Coach Factory, Kapurthala	Ashesh Agarwal
Modern Coach Factory, Rae Bareli	V. M. Srivastava
General Managers, Construction Units	
Northeast Frontier Railway (Construction)	Sunil Sharma
Central Organization for Railway Electrification	Y. P. Singh
Director-General	
National Academy of Indian Railways	S. P. S. Chauhan
Director-General and Ex-Officio General Manager	
Research, Designs and Standards Organization	Sanjiv Bhutani
Chief Administrative Officers (Railways)	
Central Organization for Modernization of Workshops	Vivek Kumar
Diesel Loco Modernization Works	S. N. Dubey
Rail Wheel Plant, Bela	Shubhranshu

*Looking after. ** Metro Railway, Kolkata.

(As on 3rd January, 2022)



Review-Prospects



New Building of Railway Hospital Perambur, SR

Results : 2020-21

Financial Performance

The year 2020-21 ended with an excess of earning over expenditure to the tune of ₹2,547.48 crore which was appropriated to Development Fund (₹1,547.45 crore) and Rashtriya Rail Sanraksha Kosh (RRSK) (₹1,000 crore)

Freight Operation

	2019-20	2020-21	Absolute Variation	% age Variation
Revenue Originating Tonnes (million)	1208.41	**1230.94**	**22.53**	**1.86**
Revenue Net Tonne Kms. (billion)	707.67	**719.76**	**12.09**	**1.71**
Goods Earnings @ (₹ in crore)	1,11,472.30	**1,15,738.38**	**4,266.08**	**3.83**

@Excludes 'other goods earnings' such as wharfage, demurrage etc.

Passenger Business

	2019-20	2020-21	Absolute Variation	% age Variation
Number of Passengers carried(million)	8,086	**1,250**	**-6,836**	**-84.54**
Passenger Kilometers (billion)	1,051	**231**	**-820**	**-78.02**
Passenger Earnings (₹in crore)	50,669.09	**15,248.49**	**-33,420.60**	**-65.96**



Magnificent Sout Eastern Railway Headquarters Building at Garden Reach Kolkata

Engineering Works

During the year 2020-21 the following Engineering Works were accomplished :

	2020-21 (in km.)
Construction of New Lines	**286.31**
Conversion to Broad Gauge	**469.93**
Track Renewal	**4,363**

Electrification

6,015 kms. of IR's route was electrified during 2020-21.

Safety, Signal and Telecom

Details of consequential train accidents and train accidents per million train kilometres (an important index of Safety) during 2020-21 as compared to 2019-20 are given below :

	2019-20	2020-21
Consequential Train Accidents*	54	**21**
Train Accidents Per Million Train Kilometres	0.05	**0.03**

*excluding Konkan Railway



Bird's Eye view of MCF, Rae Bareli



CLW produces loco with aerodynamically design Tejas capable of 160 kmph, CLW

Following steps were taken for improving passenger amenities :

Provision	2020-21 (No. of Stations)
Public Address System	**4,752**
Train Display Board	**1,147**
Coach Guidance System	**652**

Operating Efficiency

Some important efficiency indices for 2020-21 compared to 2019-20 were as follows:

Efficiency Index	Broad Gauge		Metre Gauge	
	2019-20	**2020-21**	2019-20	**2020-21**
Net tonne kms. per wagon per day	7,057	**6,861**	-	-
Speed (kmph) of all goods trains (all traction)	23.6	**43.2**	-	-
Percentage of loaded to total wagon km	62.5	**62.4**	-	-
Net load per goods train (tonnes)	1763*	**1738**	-	-
Net tonne km per engine hour	14,287*	**13,881**	-	-
Passenger vehicle km per vehicle per day	534	**185**	113*	**114**

*Revised



A view of DMW Workshop

Materials Management

Materials Management on IR is being progressively revamped with a view to reduce costs, storage, handling, insurance and dividend charges. Turn Over Ratio in terms of value of inventories to value of materials consumed was 13% (without fuel) and 12% (with fuel) during 2020-21 as compared to 15% (without fuel) and 10% (with fuel) during last year. The disposal of condemned Rolling Stock and scrap arising was monitored closely.

Managing the Environment



Front view of Yognagri Rishikesh Station, NR

Efforts are steadily being made to make Railway operations environment friendly and to bring down the adverse effects through adaptation of cleaner technologies, energy conservation measures, afforestation on vacant railway land, etc. Railway is utilizing wasteland and rooftops for setting up solar power plants.

Human Resource Development

A number of initiatives were taken to improve the quality of training programmes for railway employees in order to improve productivity. In this direction, 'National Rail & Transportation Institute' (NRTI) has been set up as India's first University focused on transport related education, multi disciplinary research & training in Vadodara, Gujarat.

Industrial Relations and Personnel



Redevelopment of Habibganj Station WCR

As on 31st March,2021, IR had 12,52,347 regular employees as against 12,54,386* as on 31st March, 2020 a decrease by 2,039.

Industrial Realation remained cordial during 2020-21. Productivity Linked Bonus equivalent to 78 days' wages was paid to all non-gazetted employees (excluding RPF/RPSF personnel) for 2020-21. RPF/RPSF personnel belonging to Group C category were sanctioned an ad hoc bonus equivalent to 30 days' wages.

* revised

Staff Welfare

IR's welfare schemes cover a wide spectrum of activities, viz., educational facilities and financial assistance to the children of Railway employees, handicraft centres for augmenting family income, financial assistance in sickness, subsidized housing and canteen facilities at work places and medical cover for employees and their families during service and after retirement.



Rapid Antigen Test BLW

Performance: 2021-22 (1st January, 2021-31st December, 2021)

Passenger Business*

During January-December, 2021, the number of originating passengers in IR was 3,143.59 million vis-à-vis 2,276.31 million during the corresponding period of last year, registering an increase of 867.28 million (38.10%). The passenger earning during this period was ₹35,628.57 crore showing an increase by ₹17,750.11 crore (99.28%) compared to the earnings during the corresponding period of the last year.



Sharamik Special Train, ECR

Freight Operation**

Loading of revenue-earning traffic for the year 2021 (January-December, 2021) compared to the corresponding period of last year, was as under:

(Million tonnes)

Commodity	Jan. to Dec., 2020	**Jan. to Dec., 2021**
Coal	537.35	**634.55**
Raw material for steel plants Except Iron Ore	23.36	**28.88**
Pig iron and finished steel	55.86	**68.25**
Iron ore	151.92	**171.67**
Cement	111.20	**138.52**
Food grains	60.32	**65.45**
Fertilizers	55.52	**48.23**
P.O.L (Mineral Oil)	43.24	**44.94**
Balance other goods	151.43	**192.30**
Total revenue earning traffic	1,190.20	**1,392.79**

*Based on Statement of Gross Earning on originating basis.
**Based on Statement 7-A



Rail Soudha SWR Zonal Office Hubballi

Estimation for the period January-March 2022

Freight Operation

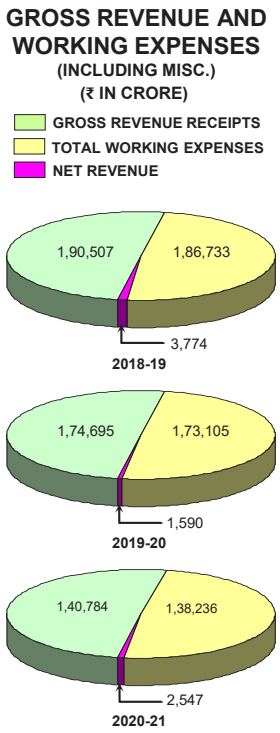
Anticipated freight volume likely to be carried by the Railways for the three months period from January to March 2022 is 371 million tonnes excluding KRCL and DFCCIL.

Passenger Business

The total no. of anticipated originating passengers for the three ensuing months from January to March, 2022 will be 1,315.27 million.



Isolation Coaches, ECR



Finance

Results for 2020-21

Gross Traffic Receipts of the Railways went down from ₹1,74,356.60 crore in 2019-20 to ₹1,40,570.52 crore in 2020-21. Total Working Expenses decreased from ₹1,71,319.21 crore in 2019-20 to ₹1,36,567.51 crore in 2020-21. After taking into account the miscellaneous transactions, the Net Revenue Receipts were ₹2,547.48 crore.

There was no dividend payment during 2020-21 as per RCC recommendations, therefore the year ended with an excess of ₹2,547.48 crore which was appropriated to Development Fund (₹1,547.48) crore and Rashtriya Rail Sanraksha Kosh (RRSK) (₹1,000 crore).

The Financial Results for 2020-21 compared to 2019-20 are summarized as below:

			(₹in crore)
	2019-20	**2020-21**	**Variation**
Capital Investment (excluding MTPs and Circular Railway, Udhampur-Baramula project and appropriation to SRSF)	3,21,141.96#	**3,34,239.78**	**13,097.82**
Investment from Capital Fund	53,449.91	**53,449.91**	**-**
Total	3,74,591.87#	**3,87,689.69**	**13,097.82**
Gross Traffic Receipts	1,74,356.60	**1,40,570.52**	**(-)33,786.08**
Total Working Expenses	1,71,319.21	**1,36,567.51**	**(-)34,751.70**
Net Traffic Receipts	3,037.39	**4,003.01**	**965.62**
Miscellaneous Transactions(Net)	(-)1,447.77	**(-)1,455.53**	**(-)7.76**
Net Revenue Receipts	1,589.62	**2,547.48**	**957.86**
Dividend Payable to General Revenues	-	**-**	**-**
Excess(+)/Shortfall(-)	1,589.62	**2,547.48**	**957.86**
Percentage of			
(a)Working Expenses to Gross Earnings	98.36%	**97.45%**	**(-)0.91**
(b)Net Revenue to Capital Investment from Capital Fund	0.42	**0.66**	**0.24**
Capital Investment*(in paise) per NTKM	479	**525**	**(+)46**
*Includes Investment from Capital Fund. #Revised			

Revenue

The Gross Traffic Receipts went down by ₹33,786.08 crore (19.38%) over the previous year. The break-up in terms of major sources is given in Statement IA of Financial Statements.

Working Expenses

The total Working Expenses during 2020-21 were ₹1,36,567.51 crore a decrease of ₹34,751.70 crore over 2019.20. Grant-wise distribution of

Working Expenses is given in Statements IB and IC of Financial Statements.

Balance Sheet:

A summary of the Balance Sheet as on March 31, 2021 and variation over 2019-20 is as follows:

(₹ in crore)

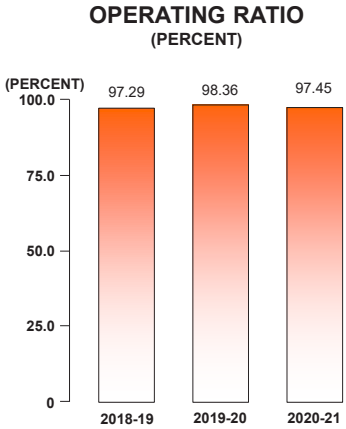
Assets		As on March 31,2021	Variation over Previous year
Block Assets		6,70,725.78	30,317.51
Funds with Central Government:			
(i) Reserve funds	6,893.93		
(ii) Banking accounts	62,324.04		
		69,217.97	25,784.45
Sundry Debtors, etc.		4,998.64	348.68
Cash in hand		703.98	99.20
Total		7,45,646.37	56,549.84
Liabilites			
Represented by:			
Capital Investment*	4,06,883.88		
Investment financed from internal sources, etc.	2,63,841.90		
Total		6,70,725.78	30,317.51
Reserve Funds		6,893.93	32,624.58
Banking Accounts:			
(i) Provident Fund	40,292.15		
(ii) Misc. Deposits	21,974.81		
(iii) F. Loans and Advances	57.08		
Total		62,324.04	-6,840.12
Sundry Creditors, etc.		5,702.62	447.89
Total		7,45,646.37	56,549.86

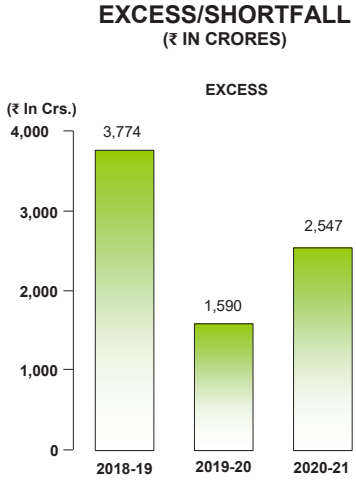
*Excludes ₹16,886.34 crore for MTPs, ₹1,911.10 crore for Circular Railways, ₹11,954.00 crore Appropriation to SRSF, ₹45,000.00 crore Appropriation to Rashtriya Rail Sanraksha Kosh (RRSK) and ₹22,357.03 crore Appropriation to Railway Safety Fund(RSF).
*Includes ₹56,617.40 crore of investment in DFCCIL and ₹16,026.70 crore of Udhampur-Srinagar-Baramula Project (National Project).
@ Excludes TWFA: ₹0.01 crore of DRF, ₹0.03 crore of DF, ₹0.00 crore of RSF and total ₹0.04 crore of TWFA.

*Deferred Dividend Liability

This is a Contingent Liability and does not appear in the balance sheet.

*Further, Railways has been exempted from payment of dividend since 2016-17. With merger of Railway Budget with Union Budget, the





capital-at-charge of the Railway has been written off and consequently dividend liability also.

Railway Capital Fund

In pursuance of the recommendations of Railway Convention Committee (1991), as contained in their Second Report, Railway Capital Fund has come into operation from 1992-93. Appropriation to the Fund is from Revenue Surplus and it intends to finance expenditure on assets of capital nature. Investment made from the Fund upto 2020-21 was ₹53,449.91 crore.

Reserve Fund Balances

As per recommendations of Railway Convention Committee (1991), contained in their Second Report, the two existing funds, viz. Accident Compensation, Safety & Passenger Amenities Fund and Revenue Reserve Fund, have been restructured to accommodate expenditure on Safety and Passenger Amenity Works. Balance of the abolished Funds has, therefore, been merged with Development Fund.

The position of the Funds as on March 31, 2021 compared to March 31, 2020 is as follows:

(₹in crore)

Name of the Fund	Balance as on 1.4.2020	Contribution to Fund during 2020-21	Withdrawls during 2020-21	Balance as on 31.3.2021
DRF*	833.55	**423.72**	**671.92**	**585.35**
DF*	519.29	**1,573.15**	**1,075.89**	**1,016.54**
CF*	400.35	**13.61**	**0**	**413.96**
Pension Fund*	(-)28,398.46	**80,100.92**	**48,434.96**	**3,267.49**
RSF*	509.19	**0**	**(-)2.90**	**512.09**
DSF*	214.73	**7.30**	**0**	**222.03**
RRSK	190.73	**1,000.00**	**314.25**	**876.48**
Total	(-)25,730.62	**83,118.68**	**50,494.12**	**6,893.95**

*Includes ₹3.94 crore under RCF, ₹-3.94 crore under RRSK due to TWFA for the year 2020-21 and also includes interest under DRF ₹23.72 cores, DF ₹25.67 corer, CF ₹13.61 crore, Pension Fund ₹-420.08 crore and DSF ₹7.30 crore.

The total balance in the Reserve Funds as on March 31, 2021 was ₹6,893.95 crore, representing a increase of ₹32,624.57 crore over the previous year.

Cash Flow

Finance generated through IR's internal resources provided ₹48,979.77 crore during the year 2020-21.

The details of internal resource generation and utilisation of funds for financing the Plan outlay are shown in Statement IV of Financial Statements.

During 2020-21, the total Plan investment was ₹48,979.77 crore, (including MTPs, Circular Railways & National Projects). This was financed from Budgetary Support to the extent of ₹14,296.04 crore (inclusive of capital invested on MTPs & Circular Railways and Dividend free project Udhampur-Srinagar-Baramulla. The corresponding position during 2018-19 was that out of a total Plan investment was ₹28,666.88 crore (excluding MTPs, Circular Railways and National Project). This was financed from Budgetary Support to the extent of ₹26,302.14 crore (exclusive of capital invested on MTPs & Circular Railways amounting to ₹2,364.74 crore and ₹0.00 crore invested on Dividend free project Udhampur-Srinagar-Baramulla). The balance of the Plan investment was met from internal and extra-budgetary resources. During the year 2020-21, a decrease of the fund balance was to the tune of ₹32,624.57 crore to finance the Plan expenditure.



Coal loading in Dhanbad Division, ECR

Audit Objections

IR had a total of 1,464 Audit Notes Part I, 759 Special Letters and 4,657 Audit Inspection Reports Part-I as on March 31, 2021 as compared to 1,370, 873 and 4,622 outstanding respectively at the end of March 31, 2020.

IR has a well-structured system of ensuring discussion and disposal of all audit objections, inspection reports, draft paras, etc. Tripartite meetings are held at various levels involving the Audit, Accounts and Executive Departments. The draft paras are also discussed at the highest levels between Railway Board and the Audit Department, and based on the replies given, many of them get closed.

Summary of Audit Observations on the working of Ministry of Railway, as provided by C&AG for the year, is at page 149.



First 12000HP WAG 12 Loco ECR

Financial arrangement between the Railways and the Government.

Like other Ministries/Departments of the Union, the Ministry of Railways is an integral part of the Union Finance/Budget. Broadly, the revenue expenditure of the Railway is expected to be met from the revenue receipts of the Railways. The excess of revenue receipts over the revenue expenditure is put into the Railway Reserve Funds like Development Fund, Capital Fund, Rashtriya Rail Sanraksha Kosh (RRSK) and Debt Service Fund mainly for being used as internal resources for Capex. The Capital expenditure of the Railways is met from the Gross Budgetary Support from the General Exchequer, Extra Budgetary Resources from the market and partnerships besides the internal resource generation.

Investment by IRFC

Since 1987-88, Indian Railway Finance Corporation Ltd. (IRFC), a PSU under the administrative control of the Ministry of Railways (MOR), has been mobilizing market borrowings to finance capital expenditure in the Railways. Market funds raised by IRFC constitute Extra- Budgetary Resources (EBR) for Railway Plan and are invested in rolling stock and projects which are leased by IRFC to MOR.

With the addition of new rolling stock financed in 2020-21, the fleet



Introduction of Advance Technology High Horse Power Diesel Locomotive WDG6G RDSO



HABD Hot Axle Box Detector systems NFR

of assets leased by IRFC represent over 70% of all rolling stock in operation on Indian Railways. Details of new rolling stock taken on lease from IRFC in 2020-21 and cumulative investment from this source are as under:

Category of assets	Rolling stock taken on lease in 2020-21		Rolling stock under lease at the end of 2020-21	
	Nos.	Value (₹ in crore)	Nos.	Value (₹ in crore)
Elec. Locos	899	11,512.04	6,998	66,449.14
Diesel Locos	110	2,146.83	4,682	47,689.85
Total Locos	**1,009**	**13,658.88**	**11,680**	**1,14,138.99**
Wagons	10,131	3,417.57	2,26,054	48,579.28
Coaches	4,697	11,484.64	67,548	89,331.77
Track Machines & Cranes	-	-	81	342.33
Other Misc. Items	-	-	-	1,034.38
Total		**28,561.09**		**2,53,426.75**

On the rolling stock assets taken on lease from IRFC, Railways pay lease rentals semi-annually in advance, to enable IRFC to service the debt. Quantum of lease rentals paid by MOR in 2020-21 was ₹23,088.52 crore, of which ₹11,373.73 crore constituted capital component and ₹11,714.79 crore interest component.



AC EMU (Local Train)

IRFC also provided funding to the tune of ₹2,078.49 crore in 2011-12 to meet capital expenditure in 90 doubling and 32 electrification projects in that year. The project assets to the extent funded are on lease from IRFC to MOR. MOR paid an amount of ₹297.48 crore as lease rentals in 2020-21 (₹110.27 crore capital component and ₹187.21 crore interest component).

IRFC has also been providing market funds to Rail Vikas Nigam Limited (RVNL) to finance bankable railway projects under implementation by them. The amount of funds made available to RVNL till end of 2020-21 is ₹7,165.08 crore, including ₹1,429.69 crore in 2020-21. Funds are provided by MOR to RVNL to meet RVNL's debt servicing obligations to IRFC (₹443.88 crore in 2020-21).

A new source of funding viz. Extra-Budgetary Resources (Institutional Finance) or EBR-IF has been introduced from FY 2015-16. EBR-IF funds are long term funds which are being deployed to finance throughput enhancement projects of Railways like doubling and electrification projects, which are otherwise not adequately funded due to resource constraints. The cumulative EBR-IF funds made available by IRFC to Railways till end of 2020-21 is ₹1,23,073.67 crore, including ₹21,839.68 crore in 2020-21.



In NRCH New Delhi Hospital

In FY 2020-21, due to resource constraints expenditure which was previously charged to Capital/Railway Safety Fund works was financed through Extra Budgetary Resources (Special) as a one-time arrangement. An amount of ₹50,550.95 crore was provided by IRFC in FY 2020-21 for financing of various railway projects under EBR(Special).

Selected Financial Ratios

S. No.	Item	Unit	2019-20	2020-21
(A)	**Financial Ratios**			
1.	Operating ratio	% Age	98.36	**97.45**
2.	Rate of return on Capital	% Age	0.42	**0.66**
3.	Working ratio of IR	% Age	91.9	**88.5**
4.	Operating ratio with subsidy (Cost recovery)	% Age	74.22	**66.5**
5.	Operating ratio for Coaching (passenger) and Goods (Freight)			
i.	Goods	% Age	73.11	**83.20**
ii.	Coaching	% Age	207.84	**454.68**
6.	Debt Servicing as percentage of OWE and as a percentage of Gross receipts.			
i.	Debt servicing as percentage of OWE	% Age	13.9	**17.6**
ii.	Debt servicing as percentage of Gross Receipts	% Age	11.9	**17.0**
7.	Capex to Revenue ratio – Capex (from internal generation) / Revenue	% Age	1.0	**1.5**
(B)	**Earning/Yield Ratios (Based on Apportion Earning)**			
8.	Passenger yield/ PKMs	In Paise	48.22	**65.97**
9.	Fright yield/NTKMs	In Paise	157.52	**160.80**
	Productivity index			
i.	Employee Productivity		6,24,315	**5,90,282**
ii.	Infrastructure Productivity		61,93,414	**58,38,651**
(C)	**Asset Utilization**			
10.	Utilization of Assets			
i.	NTKMs per wagon per day -(BG)	KMs	7,057	**6,861**
ii.	Wagon KMs per Wagon day -(BG)	KMs	188.7	**181.5**
iii.	Wagon turn around - BG	In days	5.30	**5.43**
iv.	Average Load per Wagon - BG	Tonnes	61.30	**68.8**
(D)	**Operating Indices**			
11.	Average speed of Goods Train – (BG) – All traction	KM/hour	23.6	**43.2**
12.	Infective percentage of Rolling Stock – (BG)			
i.	Diesel Locos	% Age	8.19	**9.77**
ii.	Electric Locos	% Age	6.99	**7.35**
iii.	EMU Coaches	% Age	12.2	**10.0**
iv.	Passenger Carriages	% Age	6.14	**6.17**
v.	Other Coaching Vehicles	% Age	5.08	**5.22**
vi.	Wagons	% Age	3.07	**4.52**
13.	Specific Fuel Consumption (Consumption per 1000 GTKMs) – (BG)			
i.	Passenger service Diesel	KLs.	3.59	**3.31**
ii.	Goods services Diesel	KLs.	1.92	**1.92**
14.	Specific Energy Consumption (Consumption per 1000 GTKMs) – (BG)			
i.	Passenger service- Electricity	K.Wt. Hrs.	18.4	**15.6**
ii.	Goods services -Electricity	K.Wt. Hrs.	6.13	**7.09**
15.	Punctuality Index – Punctuality (M/Exp. Trains) –(BG)	%age	75.69	**94.17**
16.	Accident per Million train Kilometers		0.05	**0.03**

*Revised



A Picturesque view of Konkan Railway Route KRCL

Freight Operation

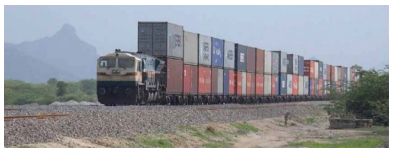
In 2020-21, IR loaded 1,233.85 million tonnes of freight traffic of which 1,230.94 million tonnes was revenue-earning and 2.91 million tonnes of non-revenue earning and achieved total net tonne kilometers (NTKMs) of 720 billion as against 708 billion in 2019-20. The freight earnings went up from ₹1,13,487.89 crore in 2019-20 to ₹1,17,231.82 crore in 2020-21, registering an increase of 3.30%.

Commodity wise loading of revenue-earning traffic in 2020-21 as compared to 2019-20 was as follows:

Commodity	Tonnes carried (in millions)	
	2019-20	2020-21
Coal		
(i) for Steel Plants	57.07	**52.95**
(ii) for Washeries	0.13	**0.34**
(iii) for Power House	252.92	**218.11**
(iv) for public use	276.75	**270.42**
Total	586.87	**541.82**
Raw material for steel plants except iron ore	25.57	**24.90**
Pig iron and finished steel		
(i) from steel plants	31.43	**32.92**
(ii) from other points	21.70	**27.14**
Total	53.13	**60.06**
Iron ore		
(i) for export	17.47	**25.18**
(ii) for steel plants	85.55	**84.67**
(iii) for other domestic users	50.35	**49.28**
Total	153.37	**159.13**
Cement	110.10	**120.40**
Foodgrains	37.53	**62.82**
Fertilizers	51.39	**53.79**
Mineral oil (POL)	44.68	**42.48**
Container Service		
i) Domestic containers	11.31	**12.61**
ii) EXIM containers	49.77	**50.55**
Total	61.08	**63.16**
Balance other goods	84.69	**102.38**
Total Revenue earning traffic	1,208.41	**1,230.94**

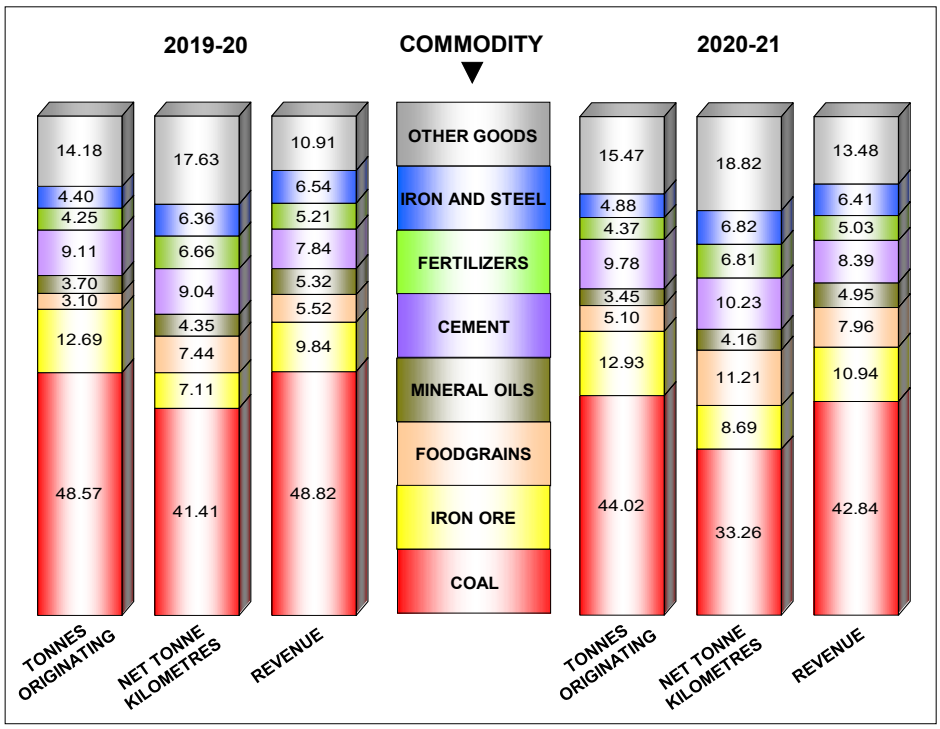


Freight trains loaded with iron ore and steel at Noamundi SER



Goods transportation in order to ensure hassle free supply of essential commodities and food grains in any part of the country during the lockdown, NFR

PATTERN OF REVENUE-EARNING FREIGHT TRAFFIC
(PERCENTAGE TO TOTAL)





Institutional Complex for ICAR Pusa, New Delhi, IRCON



Mini Kisan Rail carrying Milk, ECR

Revenue-earning freight traffic for major bulk commodities/ commodity groups in 2020-21 compared with 2019-20 was as follows :

S. No.	Commodity/ Commodity group	Tonnes originating (in million)		Net tonne kilometers (in million)		Earnings $ (₹ in crore)	
		2019-20	**2020-21**	2019-20	**2020-21**	2019-20	**2020-21**
1	Coal	586.87	**541.82**	2,93,051	**2,39,390**	54,426.68	**49,578.45**
2	Raw material for steel plants except iron ore	25.57	**24.90**	14,438	**13,663**	2,216.23	**1,978.82**
3	Pig Iron & finished steel	53.13	**60.06**	45,029	**49,123**	7,286.65	**7,416.78**
4	Iron ore	153.37	**159.13**	50,320	**62,524**	10,965.90	**12,661.43**
5	Cement	110.10	**120.40**	63,933	**73,605**	8,744.82	**9,713.67**
6	Foodgrains	37.53	**62.82**	52,641	**80,681**	6,153.66	**9,212.57**
7	Fertilizers	51.39	**53.79**	47,162	**49,011**	5,807.65	**5,826.02**
8	Mineral oil (POL)	44.68	**42.28**	30,774	**29,970**	5,928.06	**5,727.29**
9	Container Services	61.08	**63.16**	56,686	**55,331**	2,553.95	**5,113.60**
10	Balance other goods	84.69	**102.38**	53,631	**66,464**	7,388.70	**8,509.75**
11	**Total revenue earning traffic**	1,208.41	**1,230.94**	7,07,665	**7,19,762**	1,11,472.30	**1,15,738.38**

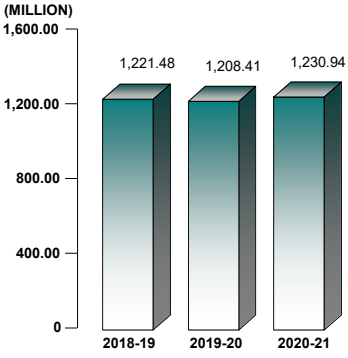
$ Excludes 'other goods earnings' such as wharfage, demurrage, etc.

Trend of revenue-earning freight traffic for the last 3 years is as follows:

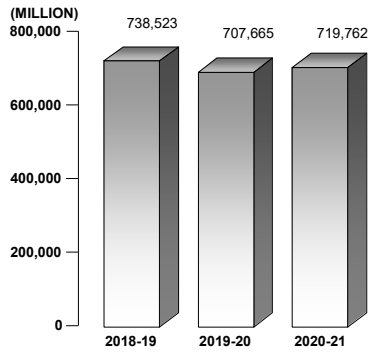
	2018-19	2019-20	**2020-21**
Tonnes originating (million)	1,221.48	1,208.41	**1,230.94**
Net tonne kms. (million)	7,38,523	7,07,665	**7,19,762**
Average lead (kms.)	605	586	**585**
Goods earnings $ (₹ in crore)	1,22,580.31	1,11,472.30	**1,15,738.38**

$ Excludes 'other goods earnings' such as wharfage, demurrage, etc.

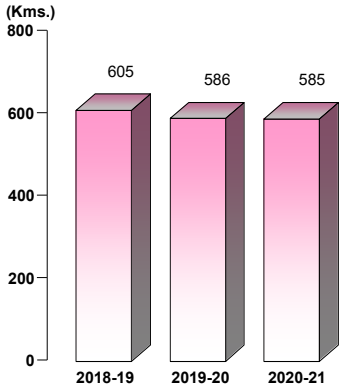
TONNES ORIGINATING
(REVENUE-EARNING)



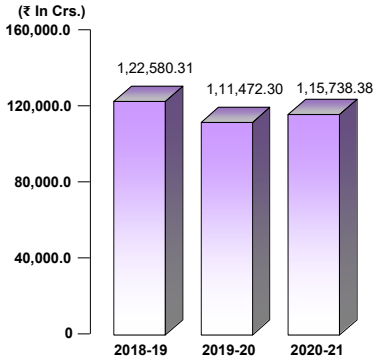
NET TONNE KILOMETRES
(REVENUE-EARNING)



AVERAGE LEAD
AVERAGE DISTANCE OF MOVEMENT OF A TONNE OF GOODS (REVENUE-EARNING TRAFFIC)



GOODS EARNINGS



Freight Services – Structure and Rates

There was no increase in freight in 2020-21. However, various initiatives were taken during this period which includes Short lead concession under which discount in freight at the rate of 50%, 25% and 10% is granted to the traffic booked upto 0-50 KM, 51-75 KM and 76-90 KM respectively except Coal & Coke and Iron ore traffic. Long lead concession for Coal & Coke traffic for distance >1400 KM @ 20%, for Iron & Steel for distance >1600 Km and >700 KM-1600 Km @ 20% and @ 15%, respectively; and for Iron Ore traffic for distance >1500 Km @ 20%. Distance based graded concession @20% to 25% for transportation of Clinker for lead of > 1000 km, Premium Indent Scheme, discount for transportation of fly ash, Round Trip Tariff policy, Reduction in permissible carrying capacity (PCC) for loading of Pet Coke, Relaxation in distance for operation of Mini Rake, 5% discount in haulage charges for loaded Containers and 25% discount in haulage charges of empty containers and empty flats, Roundtrip based charging for ultra short lead (≤ 50 Km) Container traffic etc.

In addition certain initiatives have also been taken to deal with situation arisen due to Covid-19 which includes exemption from levy of ancillary charges namely Demurrage, Wharfage, Stacking, Detention and Ground Usage Charges from 24.03.2020 to 17.05.2020, non-levy of haulage charge for movement of empty containers and empty flat from 24.03.2020 to 08.05.2020 & from 17.12.2020 to 31.12.2020 and exemption from levy of stabling charges in case of container traffic from 24.03.2020 to 31.03.2021.

Freight Marketing

1. **Development of Private Terminals (PFT) through private investment:** Private Freight Terminal (PFT) facilitates rapid development of a network of freight terminals with private investment. The focus of the policy is on providing efficient and cost effective logistics services with warehousing solution to end users.

2. **Procurement of rakes for freight traffic by inviting private investments:**

   i. **General Purpose Wagon Investment Scheme (GPWIS):** To allow investment for procurement of General Purpose Wagons by End users, Public Sector Undertaking (PSUs), Port Owner, Logistics Providers and Mines Owners. The scheme permits eligible investors to invest in minimum of one rake of general purpose wagon in any of the desired circuit(s) to carry any commodity in these rakes.

   ii. **Liberalized Special Freight Train Operators (LSFTO) Scheme:** Liberalized Special Freight Train Operators (LSFTO) Scheme has been started with effect from 16.03.2020 by amalgamating erstwhile two schemes viz. Liberalized Wagon Investment Scheme (LWIS) and Special Freight Train Operator (SFTO) Scheme. The objective of the policy is to increase Railways share in transportation of non conventional traffic in high capacity and special purpose wagons to increase the commodity

base of Rail Traffic. This policy provides an opportunity to logistics service providers or manufacturer to invest in wagons and use advantages of rail transport of selected commodity to create a win-win situation for railways and themselves. This also creates an avenue for end users to optimally utilize their rolling stock by transporting their commodities as well as commodities of third party.

iii. **Automobiles Freight Train Operator (AFTO) Scheme:** Automobile Freight Train Operator Scheme permits procurement and operation of special purpose rakes by private parties for transportation of automobiles sector.

iv. **Wagon Leasing Scheme (WLS):** The Scheme introduced the concept of leasing of railway wagons on Indian Railways. The scheme aims at induction of rakes of general purpose wagons, special purpose wagons and wagons for containers movements through PPP route. Wagon Leasing Companies can lease wagon under Automobiles Freight Train Operator (AFTO) scheme, General Purpose Wagon Investment Scheme (GPWIS), Liberalized Special Freight Train Operators (LSFTO) scheme, Automobiles Freight Train Operator (AFTO) scheme and also to Container Train Operators.



Parcel Loading NR

Claims

(A) Claim (2020-21)

The number of claims registered by Railways was 7,391 during the year 2017-18, 5,991 during 2018-19, 5,760 in 2019-20 and 3,845 in 2020-21.



Improvement in Kuberpur Goods Shed Agra Division NCR

(B) Claim (April-September, 2021)

The number of claims registered by Railways was 3,086 during the period of April-September 2018, 3,281 during the period of April-September 2019, 1,403 during the period of April-September, 2020 and 1,683 during the period of April-September, 2021.

Measures initiated by Railways to prevent arising of claims are as under:-

1. Monitoring of sick & detached wagons for proper connection and dispatch to its booked destination/rightful consignee. Wagon attachment/detachment details are recorded in FOIS module for this purpose.
2. Booking/loading/unloading/delivery details of parcels/luggage are fed into the PMS for tracking of parcels to facilitate the status of booked consignments to the customers.
3. At the time of booking, remarks on forwarding notes are obtained from the consignor or his authorized agent regarding defective packing conditions wherever necessary such as, "Internal/external packing conditions not complied with. Liable for damage during transit etc". and the same remarks are reproduced on RR/PWB also.



Drone Camera Surveillence, ECoR



Newly inaugurated Sankrail Goods Terminal Yard SER

4. Sending copy of ORRS/PRRs to the destination station before arrival of the consignments, to facilitate connection and delivery of the consignments.
5. Weighment of rakes through electronic in-motion-weighbridges and weighment of parcels at destination before delivery.
6. Escorting of rakes.
7. Instructions regarding Monsoon Precautions are issued to all concerned in advance every year in order to prevent damage of the consignment by wet.
8. Proper closing, bolting and securing the doors of wagons.
9. Use of dunnage to prevent pilferage of contents from bagged consignments. Use of Gunny Strips/Plastic sheets at door crevices to prevent seepage of water; and use of tarpaulins on open wagons.
10. Arranging sufficient CCTVs in all major Parcel Offices.
11. Adequate lighting facility with high mast at Goods Sheds.
12. Regular counselling and training given to all staff and officers regarding latest rules, circulars and new technologies in respect of Claims matters.



LED fittings at Station, KRCL

Passenger Business

The profile of passenger traffic in 2020-21 as compared to 2019-20 is outlined below:

	Suburban		Non-suburban	
	2019-20	**2020-21**	2019-20	**2020-21**
Passengers originating (millions)	4,597	**917**	3,489	**333**
Passenger kilometers (millions)	1,37,130	**30,075**	9,13,608	**2,01,051**
Average lead (kilometres)	29.8	**32.8**	261.9	**603.5**
Earnings (₹ in crore)	2,843.09	**589.31**	47,826.01	**14,659.18**
Average rate per passenger kilometer (paise)	20.7	**19.6**	52.4	**72.91**

The overall trend of passenger traffic in the last three years was as follows:

	Total suburban and Non-suburban		
	2018-19	2019-20	**2020-21**
Passenger earnings (₹in crore)	51,066.65	50,669.09	**15,248.49**
Passenger journeys (millions)	8,439	8,086	**1,250**
Passenger kilometres (millions)	11,57,174	10,50,738	**2,31,126**
Average lead (kilometres)	137.1	129.9	**184.8**

Fare Structure

Indian Railways has revised the basic passenger fare w.e.f. 01.01.2020 with following features:-

- 01 paisa per kilometer increased in ordinary non-AC classes in Non-suburban.
- 02 paisa per kilometer increased in Mail/Express Non-AC classes in Non-Suburban.
- 04 paisa per kilometer increased in AC classes in Non-suburban.
- No increase in passenger fare of Suburban.
- No increase in season tickets (both suburban & Non-Suburban)

Ticketless Travel

During 2020-21, 0.95 lakh checks were conducted against ticketless/ irregular travel (including carriage of unbooked luggage). About 32.56 lakh cases of ticketless/irregular travel/unbooked luggage were detected and ₹152.25 crore were realized on this account.

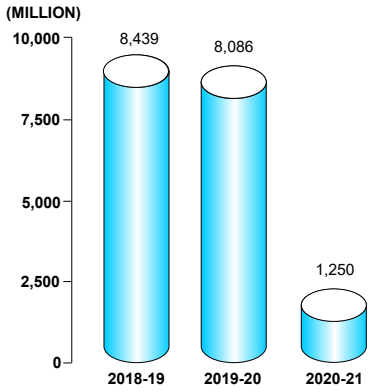
Punctuality

The cumulative punctuality for financial year 2020-21 over IR is 94.17%. This is an improvement of 18.48% as compared to corresponding period of last year.

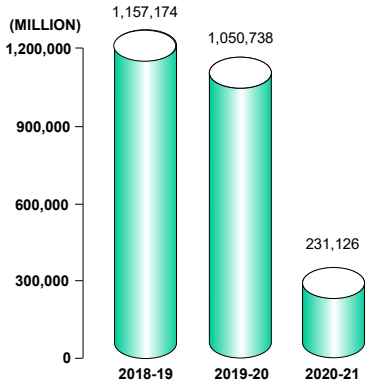
Unit Revenue

The average rate per passenger kilometer was 66 paise in 2020-21

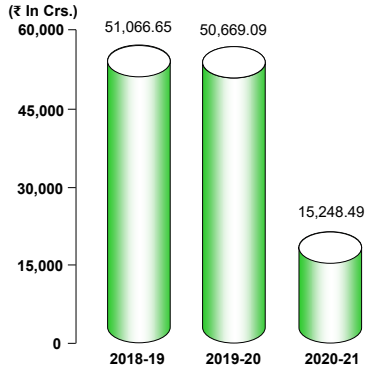
PASSENGER JOURNEYS
(NUMBER)



PASSENGER KILOMETRES



PASSENGER EARNINGS





Escalator with enhanced safety features Kolkata Metro

as against 48.2 paise in 2019-20. Average revenue for different classes, was as follows:

	Earnings per passenger kilometer (paise)		Earnings per passenger journey (in ₹)	
	2019-20	**2020-21**	2019-20	**2020-21**
Suburban (all classes)	20.7	**19.6**	6.2	**6.4**
Non-Suburban:				
AC Ist Class	273.6	**350.9**	1,612.6	**2,449.1**
AC Sleeper	166.0	**193.5**	1,266.7	**1,751.1**
AC 3-Tier	129.4	**147.7**	1,090.3	**1,464.2**
Ist class	83.7	**354.5**	66.7	**189.5**
AC Chair Car	164.4	**181.4**	512.4	**586.6**
Sleeper Class:				
(i) Mail/Express	50.6	**55.2**	395.4	**527.4**
(ii)Ordinary	48.4	**108.3**	32.4	**-2.0**
Second Class:				
(i) Mail/Express	32.7	**38.4**	116.2	**188.4**
(ii)Ordinary	23.8	**48.7**	16.5	**35.9**
Total Non-suburban	52.3	**72.9**	137.1	**440.0**

During the year 2020-21, Indian Railways introduced new trains, extended the runs and increased the frequency of existing trains, as given below:

	Trains introduced	Train Runs extended	Frequency of trains increased	Total
Non-suburban	50	34	06	90
Suburban	04	-	-	04
Total	**54**	**34**	**06**	**94**

(Trains in singles)

Catering Services

Catering services are provided to the travelling passengers in trains and at stations. Catering Policy-2017 mandates the service of meals in trains from the Base Kitchens owned, operated and managed by IRCTC. However, after COVID-19 pandemic, it was decided by Ministry of Railways to introduce the service of branded pre-cooked "Ready to Eat" (RTE) meals, in place of cooked food, to ensure quality and hygiene of on-board catering services. RTE meals are procured from reputed empanelled firms shortlisted on the basis of technical qualifications. These meals are provided through Pantry Cars (in 281 pairs of trains) and Train Side Vending (in pairs of 164 trains). Passengers travelling in the trains also have the facility to order food of their choice through e-Catering services which are available at 224 stations and an average of 9,697 meals are being served per day. Passengers can also purchase food items from Static Catering Units which include 583 Major Static Units (Food Plaza, Fast Food Units, Jan Ahaar, Refreshment Rooms and Automatic Vending Machines) and 9,129 Minor Static Units (all stalls and trolleys). In addition, there are 1,127 Water Vending Machines,



Automatic coach washing plant installed in washing line Agra NCR

928 Multi Purpose Stalls, 702 Bookstalls, 44 Miscellaneous/ Curio Stalls, 03 exclusive Chemist Stalls and 01 Bookstall cum Chemist Corner to ensure availability of items of travelling needs of passengers.

In view of the pandemic, a number of measures/ initiatives have been taken to ensure the quality and hygiene of food being served to the passengers, which are as under:-

- In order to meet the basic needs of travelling passengers in Shramik Special trains, 1.96 crore meals and 2.19 crore Packaged Drinking Water bottles were provided.
- About 35 lakh free meals were distributed jointly by Commercial Deptt. and IRCTC to the needy people at various locations across country during the nationwide lockdown.
- Service of only RTE Meals in trains.
- Sale of disposable bedroll kits/ items, protective gears and hygiene items such as masks, sanitizers, gloves, etc. has been permitted through Multi Purpose Stalls.



Exterior of the Vista dome tourist coach of Ahmedabad Kevadiya Janshatabdi Express SWR

Rail Tourism

Indian Railway through Indian Railway Catering and Tourism Corporation Ltd (IRCTC) has been working towards promotion of Rail based Tourism through Rail Tour Packages, Budgeted tourist trains, Charter Business, etc. Now the horizon of tourism activities has been expanded to include Rail based tourism activities as well as Non-Rail based tourism products to succeed in the competitive market and to better synergies and offer better tourism products to people. The rail connectivity helps in reaching and promoting tourist destinations on pan India basis.

IRCTC provides various types of tourism products ranging from budget to luxury class passengers. In addition, it is also engaged in construction of budget hotels at prime locations, providing information about various tourist destinations as well as tour packages being provided by IRCTC through its Tourism Information & Facilitation Centres, Executive Lounges at railway stations etc.

The Financial Year 2020-21 was very tough for Tourism and Hospitality industry due to COVID- 19 pandemic spread and restrictions imposed by Government of India. International & Domestic Travel was restricted to contain the COVID-19 spread. Hence, the travel and tourism sector got a set-back during the period. With the easing of restrictions, IRCTC has restarted the Rail tourism and has issued SOP for tourist trains to observe COVID-19 protocol in line with Govt. of India guidelines.

The important train/coach services and various package tours are (i) Luxury Tourist Trains- Maharajas' Express & Golden Chariot, Palace on wheels, Deccan Odyssey, (ii)Deluxe Trains- Buddhist Circuit Special Train & AC Deluxe Tourist Train, (iii) Budget Tourist Trains- Bharat Darshan/ Aastha Circuit Tourist Trains & Pilgrim Special Tourist Train, (iv) Rail tour Packages, (v) and Online Charter Train/ Coach/ Saloon Car.

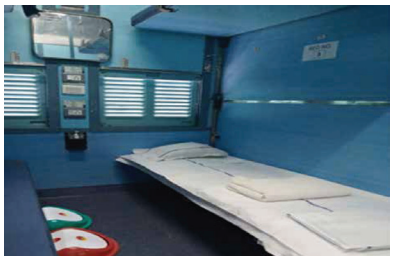


Covid_19 vaccination centres are being operated in Railway hospitals at Prayagraj Kanpur Tundla Jhansi and Agra NCR

1. Luxury Tourist Trains

a. Maharajas' Express

IRCTC is managing and operating the Maharajas' Express



Covid Care Coach SECR

independently and successfully with the world recognition. Maharajas' Express has been awarded as world's leading Luxury Tourist Train for seven consecutive years i.e. 2012 to 2018 as announced in World Travel Award ceremony. Awarded as "Luxury Hospitality and Life Style Awards" for consecutive two years i.e. 2015 & 2016 as announced in Seven Star Luxury Award.

The 23-carriage-long train houses four different types of accommodation viz. Deluxe Cabins, Junior Suite Cabins, Suites and Presidential Suite. All cabins come with en-suite bathrooms. The cabins are provided with adequate wardrobe space and luggage holds.

The train houses a full kitchen onboard which serves a mix of International and Indian cuisines. The menus change daily and guests can make special dietary requests before commencement of the journey. The train offers on-board and off-board service providers at substantially lower rates for same quality/level of services.

Three packages of 6 Nights/7 Days and one of 3 Nights/ 4 Days package have been designed to visit places like Udaipur, Jodhpur, Bikaner, Jaipur, Ranthambore, Agra, Khajuraho and Varanasi. The itineraries have been uploaded with departure dates on the website of the train i.e. www.the-maharajas.com.

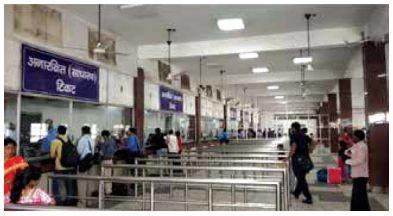
In 2020- 21, IRCTC had cancelled all trips of Maharajas' Express due to restriction of Government of India on Group movement & flight restrictions to contain the spread of COVID-19 pandemic in India.

b. Golden Chariot

The Karnataka State Tourism Development Corporation (KSTDC) signed a memorandum of understanding with the Indian Railway Catering and Tourism Corporation (IRCTC) to market and operate the Golden Chariot train. The train was taken over during January 2020 and first phase of up-gradation of coach interiors and amenity coaches have been completed.

It is proposed to operate around 15 departures with earnings of around ₹ 7 crores during the year 2021-22 seasons but due to ongoing pandemic affecting inbound travel as well as restrictions on group travel, the trips of Golden Chariot has been cancelled up till January 2021. Further domestic tourists are being targeted by aggressive marketing as well as competitive pricing, due to which IRCTC was able to operate two (02) trips of Golden Chariot with 55 passengers. The details of package tour & destination covered as well as online booking facility are available at website "https://www.goldenchariot.org".

c. Palace of Wheels



UTS centre at Patna SER

The Palace on Wheels, a luxury train being operated by Indian Railways through Rajasthan Tourism Development Corporation, takes you on a scintillating journey into the royal land of sand dunes and regal palaces. Voted as the 4th best luxury train in the world, the Palace on Wheels carries with it an intrinsic ambience that goes perfectly well with the majestic charm and beauty spread so lavishly across the Indian terrain.

The Palace on Wheels trains provides the most luxurious travel experience of its kind in Indian Railway. Guest cabins provide a calm, personal space where guests may read, relax, or simply watch the landscape

spool by through the panoramic windows.

A passionate team of chefs takes care of the gourmet meals that are served in the 2 dining cars on board. For an authentic dining experience of Royal Rajputana, the accent is on fresh local ingredients and traditional dishes.

The Spa Car, Lounge Car and a Bar Car in Palace on Wheels ensure that you rediscover the finer aspect of travelling for the entire duration of your itinerary. So be prepared to step back into a more refined era n unhurried pace of life.

In 2020- 21, RTDC had also cancelled all trips of Palace of Wheels trains due to restriction of Government of India on Group movement & flight restrictions to contain the spread of COVID-19 pandemic in India.



ATVM at Ranchi station, SER

d. Deccan Odyssey

The huge success of the first Indian luxury train 'Deccan Odyssey' paved the way to the birth of another deluxe rail journey in the south western part of the country. A brainchild of Maharashtra Tourism Development Corporation (MTDC), Deccan Odyssey is the fruitful result of the relentless efforts offer the most luxurious travel experience of its kind to passengers.

Aligned with the best royal trains of the world such as Blue Train of South Africa or Orient Express of Europe, Deccan Odyssey was suffused with every modern facility that contributes towards making each luxury train tour to Maharashtra comfy and deluxe.

The Deccan Odyssey train covers Forts & Palaces of India, Taj Mahal, Tiger & Lion forest reserves and UNESCO World Heritage Sites of Ajanta Ellora Caves & Hampi etc. Deccan Odyssey has the most variety of itineraries on offer as compared to any other luxury train in India.

The Deccan Odyssey Train has been voted as the best luxury train in Asia at the 'World Luxury Travel Awards' 3 times in a row. On the Deccan Odyssey luxury train journey, you travel overnight in comfort of richly furnished A/C cabins with ensuite bathrooms. In the daytime you enjoy pre-arranged sightseeing tours in diverse tourist destinations. The decoration of the train reflects a particular era of the Deccan milieu and each cabin is creatively outfitted with facilities like small wardrobe, personal safe, telephone, attached bathroom with toiletries, air-conditioning and a personal attendant on the round the clock service of the guests.

Cost of daily three meals, sightseeing tours, travel & onboard stay is included in package cost. Onboard Deccan Odyssey train there are 21 luxurious coaches, which are comprised of 12 passengers saloons, two dining cars, one bar lounge, conference saloon with business centre, mini gym & ayurvedic spa facility. The entire train is interconnected with common passageway & dining cars are in the centre of the train with six passenger saloons on either side. Each of the 21 coaches of Deccan Odyssey is celestially decorated that give an insight view of the elegant travelling style of the Maharajas of the bygone era.

All the destinations covered in a weeklong Maharashtra tour is sumptuously selected so that the tourists can witness the vividness of the state along with traversing through the diverse landscapes. It is certainly a surprise tour on the rolling wheels of Deccan Odyssey that transport the


Tractor Automobiles Loaded from Mandideep for the 1st time on, WCR

travellers to a world where everything is regal, elegant and brainstorming.

Due to restriction of Government of India on Group movement & flight restrictions to contain the spread of COVID-19 pandemic in India, MTDC had cancelled all trips of Deccan Odyssey trains in 2020- 21,

2. Deluxe Train:

a. Buddhist Special Trains:

Buddhist Circuit is a niche product of 7 Night/8 Days itinerary which covers all major Buddhist Pilgrim locations in India and Lumbini in Nepal. The major destinations covered follow the life span of Lord Gautam Buddha like Bodhgaya, Rajgir, Nalanda, Varanasi, Sarnath, Kushinagar, Lumbini (Nepal), Shravasti and Agra. The tour is mostly patronised by International clients and has been able to attract domestic clients too. The details of package tour & destination covered as well as online booking facility are available at Buddhist train micro-site "www.irctcbuddhisttrain.com".

In 2020-21, IRCTC had to cancel the trips of Buddhist Circuit Special Train due to Lockdown imposed by Government of India as a result of COVID- 19 pandemic situation.

b. AC Deluxe Tourist Trains:

IRCTC launched AC Deluxe Tourist train from North India using new modified LHB Buddhist rake in 2020-21. These tours are meant for mid-income domestic tourists to meet their demand who cannot afford the luxury train and also do not want to travel on the budget tourists trains like Bharat Darshan/Pilgrim Special Tourist Trains.

In 2020-21, IRCTC has operated 01 trip of Deluxe Tourist Train and provided service to 84 passengers.

3. Budget Segment Tourist Trains:

a. Bharat Darshan/ Aastha Circuit Tourist Trains:

Bharat Darshan/Aastha Circuit is one of the most popular tourism products, are tourist trains for the budget segment tourists. These Trains cover major pilgrim and tourist destinations of India on different itineraries. This product is attractively priced at ₹900/- per day per person + GST for non-AC sleeper class passengers and ₹1100/- per day per person + GST for 3AC class passengers. The price is inclusive of rail & road travel, all meals, sightseeing, accommodation and accidental insurance upto a sum assured of ₹10 lakhs. Further details regarding itinerary and booking of Bharat Darshan/Aastha Circuit Tourist is available at tourism portal "www.irctctourism.com" or by visiting nearest Tourism Information & Facilitation Centres of IRCTC.

In 2020- 21, IRCTC has operated 21 trips and provided service to 13,312 passengers. Due to impacts of COVID-19 pandemic, trips of Bharat Darshan trains were operated from Nov 2020 onwards.

b. Pilgrim Special Tourist Trains:

Pilgrim Special Tourist Train has been launched in 2020- 21 (i.e. Jan, 21), which is having composition of sleeper class – 05 and 3AC coaches – 05. These trains cover major pilgrim and tourist destinations of India on different itineraries. This product is attractively priced at ₹1,100/- per day

per person + GST for non-AC sleeper class passenger and ₹1,500/- per day per person + GST for 3AC class passenger. The price is inclusive of rail & road travel, all meals, sightseeing, accommodation and accidental insurance of upto ₹10 lakhs.

In 2020- 21, IRCTC operated 04 trips and provided service to 2,426 passengers.



Luxury Traveler Lounge at Prayagraj Jn., NCR

4. Rail Tour Packages:

These packages are offered with USP of confirmed berths of train journey along with all inclusive package services like road transfers, accommodation, meals and sightseeing at reasonable rates on the basis of itinerary.

However, Due to COVID-19 pandemic and restriction in group travel during the 2020-21, Rail Tour Packages were just operated on limited destinations like Vaishno Devi, Kevadia (Statue of Unity), etc. The details and booking of these packages can be done at tourism portal "www.irctctourism.com" or by visiting nearest Tourism Facilitation Centres (TFC) of IRCTC.

5. Online Chartering of Trains and coaches:

In 2017- 18, IRCTC has been nominated as Single window agency for booking of Full Tariff Rate (FTR) Train/ Coach & Saloon Cars. Online website and service of FTR booking was launched on 18.05.2018 for public, wherein public can register their demand for Charter Trains/ Coaches/ Saloon Cars.

The Saloon Car has a living room, two air-conditioned bedrooms – one twin bedroom and the other facilities similar to AC First Class coupe with attached baths, dining area and a kitchen. The additional service of one AC attendant and one saloon attendant was also provided for ensuring hassle free travel. Saloon Cars can be booked through IRCTC.

During the 2020-21, IRCTC has operated 69 charter coaches/saloon cars and 25 charter trains.

Passenger Amenities

The allocation under the Plan Head-53 "Passenger Amenities" in 2020-21 was ₹2,725.63 crore (Budget Estimate) and the same was revised to ₹2,615.3 crore (Revised Estimate).

1,253 stations were identified for development under the Adarsh Station Scheme, out of which 1,208 stations have since been developed under the said scheme.

During the Year 2020-21, 219 Foot over Bridges were constructed over Indian Railways. 95 stations were provided with water coolers, 54 stations were electrified and 156 passenger lifts and 120 escalators were provided at Railway Stations.

Customer Care

Indian Railways is imparting training to frontline staff with a view to improve their inter-personal skills and to equip them to deal with the rail customers in a better manner. This training is being imparted at New Delhi, Howrah, Mumbai and Secunderabad in a decentralized manner.

Accordingly, concerned Zonal Railways conduct the Customer Care Training at these locations for their nominated railways. The training aims at increasing the performance level of employees by sensitizing them to the needs of the customers. This also helps in improving the customer interface of the Indian Railways.

a) Passenger Reservation System(PRS)

Passenger Reservation System (PRS) is running at about 3,274 locations, and is handling more than 3,000 trains. Computerised reservation terminals have been expanded to remote corners through India Post PRS centers as well as non -railhead PRS facilities have been extended through State Government and local bodies. In addition, the facility of e-ticket has been made available for all Mail and Express trains through www.irctc.co.in website. The progress of proliferation of PRS locations over the years is as indicated below:

No. of location with PRS facility										
10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	**20-21**
2,355	2,829	3,019	3,146	3,201	3,350	3,422	3,384	3,443	3,445	**3,274**

b. Unreserved Ticketing System (UTS)

A pilot project was sanctioned for Unreserved Ticketing System (UTS) in 2002-03 and a nationwide project in 2003-04, UTS is now functioning at about 4,518 locations (working) on Indian Railways. This covers most of the important stations of IR. The details of proliferation of locations over the previous years is as indicated below:

No. of locations with UTS facility										
10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	**20-21**
4,739	5,256	5,619	5,778	5,835	5,860	5,979	6,000	6,382	6,242	**4,512***

*This shows working Locations of UTS. Some locations were closed temporarily because of Covid.

c. Automatic Ticket Vending Machines (ATVMs)/Coin-cum-Card Operated Automatic Ticket Vending Machines (CoTVMs).

So far more than 1,532 ATVMs and CoTVMs have been installed over Indian Railways. The ATVMs facilitate purchase of unreserved tickets, platform and recharging of season tickets by the passengers by way of touch screen facility. Thus queuing at the counters is significantly reduced during the rush hours.

d) Online and Mobile Ticketing on Indian Railways

Indian Railway catering and tourism corporation (IRCTC) manages the website www.irctc.co.in for online booking of reserved tickets. The website was launched in 2002. Now it has emerged as one of the largest e-commerce website in the country and Asia Pacific.

The IRCTC e-Ticketing System was replaced with Next Generation

E-Ticketing (NGeT) system in 2014. The system is being upgraded regularly and is supported by high capacity servers which have a capacity to book more than 26,000 tickets in a minute.

E-tickets can also be booked on IRCTC Rail Connect Mobile Apps (Android & iOS platforms). IRCTC had launched a new Android App on its NGeT system in 2017. In 2020-21, on an average about 2.21 lakh tickets were booked daily. More than 46% of online tickets were booked through IRCTC Rail Connect Mobile App.

IRCTC has a robust system of payment gateways with various payment options viz., net Banking/Credit & Debit Card/Wallets/Bhim/UPI. Even foreign users can book tickets using international credit Card (issued outside India).

Some Special Features of Ticket Booking on Indian Railways

a) E-Ticketing system

E-ticketing has been one of the most passenger-friendly initiatives of Indian Railways, as it obviates the need to come to Railway reservation counters. Passengers who have booked e-tickets can either take a print-out of the Electronic Reservation Slip (ERS) or can display the Short Message Service (SMS) sent by IRCTC containing all vital details to the on-board ticket checking staff for undertaking travel in reserved classes subject to appearance of passengers' name in the reservation chart and carrying of any one of prescribed proofs of identity in original. Owing to convenience offered by e-ticketing, the share of e-ticketing has consistently increased over the years and accounted for approximately 79.81% of the total reserved tickets booked during 2020-21.

b) Unreserved ticket booking through mobile phone

The UTSONMOBILE APP has been launched to promote cashless transaction, Contactless ticketing and enhanced customer convenience. It aims to obviate the need for passengers to wait in queues at the ticket booking counters for purchasing the unreserved tickets and thereby facilitate seamless booking of unreserved tickets -journey, season tickets & platform tickets. Payment can be made through either Railway wallet (R-Wallet) (created with zero balance upon successful registration & linked with the mobile number) or through other digital modes like debit card, credit card, net banking, UPI through payment aggregator vis Paytm, Mobikwik and Freecharge.

c) Rationalisation of fare of Humsafar train :

Fare of Humsafar trains have been rationalised and decided to withdraw the variable fare scheme from Humsafar train. It has also been decided to attach Sleeper class coaches in addition to only 3rd AC coaches in Humsafar trains.

d) Introduction of discounted scheme in CC and EC class:

Power has been delegated to Zonal Railways to grant discount in the fare of AC Chair Car and executive class over part of the section, last/first leg, end to end, weekends etc., in trains whose occupancy is below 50%. The element of discount can be decided between 10% and 25% based on the fare of alternative mode of transport.

e) Information on Status of Booking

First reservation chart is finalized automatically at least 4 hours before the scheduled departure of the train so that the waitlisted passengers can come to know about the final status of their bookings. Thereafter, the available accommodation, if any, can be booked across any computerized PRS counter or through internet. Second reservation chart is prepared between 30 minutes to 5 minutes before the scheduled/rescheduled train departure. Remaining berths, if any, are transferred to the next remote location.

The passenger gets SMS on his registered mobile number indicating the coach and berth number allotted.

f) Alternate Train Accommodation Scheme - Vikalp

With a view to provide confirmed accommodation to waitlisted passengers and also to ensure optimal utilization of available accommodation, a scheme called Alternate Train Accommodation Scheme- VIKALP has been implemented. Under this scheme, Waiting list passengers can give choice, at the time of booking ticket, to opt to travel by alternate train in case the berth is not confirmed after preparation of the chart.

g) Station Ticket Booking Agent (STBA)

The STBA scheme was initially launched on the erstwhile E-category stations with a view to offloading Station Master/Assistant Station Master of the ticketing activity in order to concentrate better on train operations. STBA were, thus, engaged to issue unreserved tickets at E-category stations. However, the STBA scheme has now been revised and instructions have been issued to engage STBA to issue unreserved tickets at NSG-5 and NSG-6 category stations.

During 2019-20, approximately 2,55,270 tickets per day were sold by STBA. During 2020-21, approximately 10,780 tickets per day were sold by STBA. Since there was a lull in unreserved ticketing during 2020-21 owing to COVID-19 pandemic, the number of tickets issued during 2020-21 was much lower than that in 2019-20.

h) Yatri Ticket Suvidha Kendra (YTSK)

With a view to expanding the facilities for issuing of tickets (both reserved and unreserved), public private partnership was allowed in establishment and operation of computerized PRS-cum-UTS terminals at centers called YTSK.

i) Online concessional ticket booking facility to Divyangjan

The scope of internet ticketing has been expanded to provide online concessional ticket booking facility to Divyangjan.

j) Booking of Foreign Tourists through Internet upto 365 Days in Advance

With a view to provide confirmed reservation to foreign tourists through internet (e-ticketing), they are allowed to book accommodation in Executive Class/1st AC, 2nd AC Class in all trains upto 365 days in advance The facility is available upto the time of opening of reservation in the train as per Advance Reservation Period. Thereafter, the Foreign Tourists can

book ticket against Foreign Tourist Quota which has been earmarked in certain mail/express trains based on demand pattern.

k) Facility of Online Change of Boarding Point

For the convenience of passengers, the online facility of change of boarding point upto the time of preparation of first reservation charts has been extended both for the tickets booked through internet as well those booked through computerized Passenger Reservation System(PRS) counters. This facility is also available through 139 and across PRS counters (during working hours of PRS centers). In case of change of boarding point short of 24 hours, no refund is permissible in normal circumstances.

Coaching Vehicle

Induction of Smart Coaches

In view of the latest development in rolling stock technology and increased level of passenger's comfort. Indian Railways has introduced 88 smart coaches with ultra modern features like Smart Public address and passenger information system, Smart HVAC (Heating, Ventilation and Air Conditioning system), Smart security and surveillance system etc. in train service. In 2020-21, 64 Smart coaches were introduced.

2. Induction of semi-high speed Train-sets

Semi High Speed Self Propelled Train-set was manufactured by Integral Coach Factory/Chennai with indigenous efforts, termed Train-18/ Vande Bharat Express. Vande Bharat Express State-of-the-art Train-set Vande Bharat services have been introduced between New Delhi -Varanasi and New Delhi- Shri Mata Vaishno Devi Katra in 2019-20. These trains have ultra modem features like quick acceleration, Substantial reduction in travel time, having maximum speed of 160kmph, on board infotainment and GPS based passenger information system, automatic sliding doors, retractable footsteps and Zero discharge vacuum bio toilets etc. The Train-18 has contemporary features as per global standards.

1st train started from 17th February 2019 between Delhi-Varanasi.

2nd train started on 5th Oct, 2019 between New Delhi-Shri Mata Vaishno Devi Katra.

3. Complete switchover to LHB

Ministry of Railways has decided for large scale proliferation of LHB coaches which are technologically superior with features like Anti climbing arrangement, Air suspension (Secondary) with failure indication system and less corrosive shell. These coaches have better riding and aesthetics as compared to the conventional ICF coaches. The Production units of Indian Railways are now producing only LHB coaches from April 2018 onwards. The production of LHB coaches are continually increased during the years: 1,469 LHB coaches in 2016-17, 2,480 LHB coaches in 2017-18, 4,429 LHB coaches in 2018-19, 6,277 LHB coaches in 2019-20 and 4,323 LHB coaches in 2020-21.

4. Focus on amenities for unreserved passengers

a. Antyodaya Train Service

These are long distance fully unreserved train comprising of LHB

general second class coaches with vestibules. These have additional facilities like cushioned luggage racks, additional hand hold in doorway area for the comfort of standing passengers, provision of J hooks near longitudinal luggage racks for hanging carry bags, enhanced number of mobile charging points, Fire extinguishers with anti-theft arrangement, more pleasing colour scheme for interior and exteriors, provision of MU cable in each coach for running train service with loco at both ends. At present 16 Antyodaya trains are running in service.

b. Deen Dayalu coaches

General second class coaches for unreserved passengers with additional facilities like Cushioned luggage racks, Additional hand hold in doorway area, provision of J hooks for hanging carry bags, Bio-toilets, Enhanced mobile charging facility, Water level indicator, Pleasing Interiors, Improved exterior colour scheme and polymerized floor coating in toilets. So far, around 2,800 Deen Dayalu coaches turned out by Production Units during 2016-17, 2017-18, 2018-19, 2019-20 and are in service. Of these 585 Deen Dayalu coaches turned out in 2020-21.

5. Focus on improving amenities for reserved passengers

a. Humsafar Trains

Humsafar trains having additional amenities in the coaches have been introduced for providing comfortable Air-Conditioned III Tier travel. Following major features have been introduced:- GPS based Passenger information system, Passenger announcement system, Dust bins in each bay, 4 lane coffee vending machine, improved aesthetics and pleasing colour scheme, Closed-Circuit Television (CCTV) based surveillance system, Integrated Braille displays etc. 38 Humsafar trains have been introduced in service till date.

b. TEJAS trains

Indian Railways has introduced Ultra modem TEJAS trains with speed potential of 200 KMPH have been introduced which runs on LHB platform with non-executive and executive chairs Car. At present, 4 Tejas trains have been introduced in service over Indian Railways out of which 02 were introduced in 2019 -20.

These ultra modern trains have following major distinguished features: Automatic entrance doors, Infotainment system (LCD Screens), Passengers Information display system (Electronic Reservation chart System), GPS based Passenger information system, Fire and Smoke detection system, Superior toilet fittings, Sealed vestibules, LED lights, CCTV, Aesthetically pleasing colour scheme etc.

c. TEJAS Rajdhani Trains

Indian Railways has introduced Ultra modern TEJAS trains with speed potential of 200 KMPH have been introduced which runs on LHB platform with sleeper coaches. RAJDHANI trains coaches are planned to be replaced with TEJAS Sleeper coaches. At present, One Tejas sleeper rake of Agartala - Anand Vihar Rajdhani Express has been introduced in 2020-21 (since February, 2021).

These ultra modern trains have following major distinguished

features: Automatic entrance doors, Electro-pneumatic assisted brakes, Improved Inter-car Gangway, Automatic Coupler, Improved lavatory -vacuum assisted flushing with bio-toilets, Infotainment system & PIS and digital destination board, Smart windows with automatic venetian blinds, Sensorised taps, touch free Soap dispenser, flushing system, hand driers, tissue paper dispenser – touch free – COVID, Provision of Wi-Fi facility , Infotainment system (LCD Screens), Passengers Information display system (Electronic Reservation chart System), GPS based Passenger information system, Fire and Smoke detection system, Superior toilet fittings, Sealed vestibules, LED lights, CCTV, Aesthetically pleasing colour scheme etc.

d. Uday trains

Utkrisht Double Decker Air-conditioned Yatri (UDAY) trains have been conceptualized as double-decker rakes with improved amenities such as, a dedicated vending machine with dining facilities in each of the four coaches in the rake, Decorative vinyl wrapping on both exterior and interior of the coach, Water borne solar reflective coating on the roof and PU painting on the end walls, High quality and high aesthetic passenger friendly fittings in the toilets, Defused LED lighting, Powder coated seat frames and snack tables, Aesthetically designed seat covers, All luggage racks are spray painted for aesthetic look, All foot steps are buffed and powder coated, Vynatile floor provided with clear coat, All stainless steel items like passage door, vestibule door, moldings etc., are buffed, PIS and infotainment system with Wi-Fi, 7 dedicated LCD screens provided in coach and Dining table and chairs in middle deck etc.

Two Uday rakes are running in service between Bangalore City – Coimbatore (Train No.22665/56) and between VSKP-BZA.

e. Vistadome coaches

Vistadome coaches provide panoramic view, through wider body side windows as well as through transparent sections in the roof, thus enabling the passengers to enjoy the scenic beauty of the places through which they travel. Presently, 36 Vistadome coaches are available over various sections of Indian Railways.

Seven LHB type BG Vistadome coaches were have been manufactured in 2020-21 by ICF/Chennai. One of these coaches was introduced in January 2021 in Train No. 09247/48/49/50 Ahmedabad-Kewadiya Jan Shatabdi.

6. Focus on improving safety in new manufacture coaches

Instructions have been issued for provision of following items in coaches during manufacturing at Production Units to improve the safety features of these coaches:

1. Fire detection and suppression system in all newly manufactured Power Cars and Pantry Cars.
2. Fire and Smoke detection system in all newly manufactured AC coaches.
3. Double Acting AC compartment doors in all newly manufactured AC coaches.
4. Fire extinguishers in all newly manufactured coaches.

5. Automatic plug type doors in all newly manufactured Humsafar and Uday train coaches.

7. Improving interiors of Coaches - Up-gradation / modernization of rakes

(i) Project Swarn: Project Swarn was started to upgrade the condition of Rajdhani and Shatabdi Express Trains, with the objective of significantly improving the passenger experience across the nine dimensions which include coach interiors, toilets, onboard cleanliness, staff behavior, catering, linen, punctuality, security, on-board entertainment. Real time feedback is also a part of Project Swarn. Under this scheme total 29 trains were targeted and have been covered. Later, under Project Swarn, all Rajdhani and all Shatabdi have been covered. Presently, all rakes of Rajdhani and Shatabdi Express Trains in services have been upgraded.

(ii) Project Utkrisht: IR has also launched Project Utkrisht in order to improve the condition of ICF type coaches running in Mail / Express trains. Up gradation of 640 rakes of Mail / Express trains has been taken up under Project Utkrisht for improvement in patronized train services. Work in 463 rakes has already been completed under Project Utkrisht. Work has been completed in 81 rakes in 2020-21.

8. Other facilities to improve train facilities

a. Quick Watering Facilities

Quick watering facilities are being provided for quick watering in trains within stipulated halt of the train. These facilities are essential to ensure availability of adequate water in coaches throughout the journey. At present, 66 stations have been provided with Quick Watering Facilities. Out of these, 30 stations have been provided with Quick Watering Facilities in 2020-21.

b. Automatic Coach Washing Plants

Automatic Coach Washing Plants have been installed over Zonal Railways to clean exterior of coaches more effectively and efficiently. In addition to excellent cleaning the direct water consumption also gets reduced avoiding wastage and recycling the water through water recycling plant integrated with this plant. 127 locations have been identified for provision of ACWP. Instructions have already been issued to General Managers of Zonal Railways to provide automatic coach washing plants in all coaching depots. Now, Automatic Coach Washing Plants are available at 27 locations. Work has been completed in 11 locations in 2020-21.

c. Proliferation of Bio- Toilets

As a part of "Swachh Bharat Mission", Indian Railway is proliferating bio-toilets on all its coaching stock so that no human waste is discharged from coaches on to the track. Indian Railways has completed fitment of Bio Toilets in all its coaches running on line. 73,110 coaches (2,58,990 Bio Toilet) have been fitted with Bio-toilet. Of these, 4,420 has been fitted in

2020-21. Details of provision of Bio-toilets are as follows:

Years	Bio-Toilets	Coaches
2004-2014	9,587	3,647
2014-2017	59,735	16,123
2017-2018	57,429	15,017
2018-2019	69,166	19,137
2019-2020	46,988	14,766
2020-2021	16,085	4,420
Total	**2,58,990**	**73,110**

Further, IR has planned to supplement the existing Bio-Toilet system with Vacuum flushing system toilet (Bio-Vacuum Toilets), which substantially reduces the requirement of water for flushing, while ensuring effective / proper flushing of fecal matter from the pans. Indian Railways have provided Bio Vacuum Toilet in total 1,250 LHB coaches and it has been decided to provide Bio Vacuum Toilets in newly manufactured AC LHB Coaches of premium rakes. Sanctions for 8,500 coaches are also given.

9. AC-III Tier Economy Coach

IR has planned to introduce AC –III Economy class to cater the needs of general masses and fulfilling their expectation of travel in AC class. These coaches are planned to replace normal general sleeper class coaches in trains. One prototype coach was turned out in 2020-21. Manufacturing of 806 such coaches is included in Production Plan 2021-22.

10. COVID-19 preparedness

All Zonal Railways was advised for COVID-19 preparedness. It was advised in the video conference held on 25.03.2020 that a few rakes may be converted into quarantine/isolation coaches in consultation with the Medical department, so as to augment the quarantine facilities being created. In this connection consultations were held with Armed Forces Medical Services, Medical Department of various zonal Railways, and Ayushman Bharat. Indian Railway may be required to convert up to 20,000 such coaches, with 5,000 coaches to be converted initially into quarantine/isolation coaches.

As per requirement, 5,601 Non-AC ICF sleeper coaches, hybrid sleeper and General coaches had been converted into isolation coaches.

Cleanliness and Hygiene

Cleanliness on Trains

- Intensive mechanized cleaning of coaches
- Mechanised cleaning of coaches is being carried out in the coaching depots through professional agencies. Heavy duty machines such as high pressure jet cleaners, floor scrubbers, vacuum suction cleaners etc. are deployed for the purpose.
- Clean Train Stations (CTS) scheme
- 'Clean Train Station' Scheme is provided for limited mechanized cleaning attention to passing through trains during their halts at selected stations enroute.

- On Board House Keeping Service (OBHS)
- On Board House Keeping Service has been prescribed in all Rajdhani, Shatabdi, Duronto and other important long distance Mail/Express trains for cleaning of coach toilets, doorways, aisles & passenger compartments during the run of the trains. This scheme had been implemented in more than 1000 pairs of trains. The Scheme is further planned to be extended to cover all long distance Mail/Express vestibuled trains excluding purely overnight trains.
- 'Clean My Coach' / 'Coach Mitra' service
- "Clean My Coach' service has been upgraded to provide 'Coach Mitra' service in about 1000 pairs of train for providing single window assistance to train passengers regarding cleanliness, linen, disinfestation, watering and petty repair.
- Provision of dustbins in AC and non AC coaches.
- Mechanized cleaning of coaches at both ends is being carried out through professional agencies in around 155 coaching depots. Machines like high pressure jet cleaners, floor scrubbers, wet & dry vacuum cleaners, hand held buffing machines etc. are deployed for the purpose.
- Instructions have been issued for proper sanitization of coaches with regular and frequent sanitation of common use areas like door handles, railings, taps, washrooms etc and availability of water.

Cleanliness at Stations :

- Provision of Integrated Housekeeping Contracts at major stations, award of rag picking / garbage disposal contracts at stations. Mechanized cleaning being done at 950 stations. Rag picking contracts at 1,310 stations.
- Concrete washable aprons on platform tracks are provided to facilitate clearing of night soil on platform lines by washing with water jets.
- Provision of clean and hygienic toilets including pay and use toilets at around 900 stations and deluxe Pay & use toilets at 77 stations.
- Enforcement of Indian Railways (Penalties for activities affecting cleanliness at railway premises) Rules, 2012 has been intensified.4.11 lakh persons penalized and a fine of ₹6.66 crore realized during 2019-20. Data for 2020-21 not available.
- Use of CCTVs is being extended for monitoring cleanliness work at 700 Stations.
- Social / Charitable Organisations / NGOs have also been associated in periodic cleanliness / awareness drives at 70 railway stations.
- Railways have taken up a pilot project for disposal of Municipal Solid Waste (MSW) being generated at major railway terminals in an environment friendly manner including segregation of waste and conversion of bio-degradable waste to energy (bio-methanation).

Planning

In the year 2020-21 the following assets were acquired:-

S. No.	Heads	In Numbers
1.	Wagons (BLC+ Private Wagons)	10,062
2.	Locomotives including Trade	754
3.	Coaches including Trade	6,277
	EMUs	312
	MEMUs	638
	DMUs	54

In addition, the following works were accomplished:-

S. No.	Heads	In Kms.
1.	New lines	286.31
2.	Gauge Conversion to BG from MG/NG	469.93
3.	Double/Multiple lines	1,614.18
4.	Route Electrification	6,015
5.	Track renewals (both primary & secondary renewal)	4,363

The Plan allocation (Revised Estimates) and Actual Net Expenditure for 2020-21 compared with 2019-20, were as follows:

S. No.	Plan Head	2019-20		2020-21 (₹in crore)	
		Allocation (R.E.)	Actual Net Expenditure	**Allocation (R.E.)**	**Actual Net Expenditure**
CIVIL ENGINEERING					
1	New Lines (Construction)	@@22,974.27	µ12,683.17	**@26,772.22**	**14,901.34**
2	Gauge Conversion	##3,129.27	4,140.15	**#3,430.12**	**3,980.30**
3	Doubling	$$23,777.58	22,385.67	**$22,213.57**	**24,226.15**
4	Traffic Facilities- Yard Remodeling and Others	%%1,941.71	1,626.22	**%2,531.70**	**1,241.13**
5	Road Safety Works - Level Crossings	546.44	570.54	**⊗799.83**	**543.53**
6	Road Safety Works - Road Over/Under Bridges	&&4,718.88	3,520.92	**&6,329.56**	**4,137.44**
7	Track Renewals	7,068.87	7,802.63	**α9,201.16**	**11,657.52**
8	Bridge Works, Tunnel works & approaches	751.83	777.50	**©877.88**	**769.67**
9	Staff Welfare	ØØ 516.84	480.92	**≥504.83**	**470.10**
10	New Lines (const.)– Dividend free Projects	ββ 3,300.00	-	**-**	**-**
	TOTAL	68,725.69	53,987.72	**72,660.87**	**61,927.18**
MECHANICAL					
1	Rolling Stock	^ ^42,670.58	37,101.78	**^43,362.08**	**32,213.16**
2	Leased Assets– Payment of Capital Component	10,557.53	10,462.21	**11,966.72**	**11,948.24**
3	Machinery and Plant	430.92	448.11	**++757.16**	**672.76**
4	Workshops including Production Units	££2,121.02	2,119.12	**£2,176.30**	**2,330.42**
	TOTAL	55,780.05	50,131.22	**58,262.26**	**47,164.58**
ELECTRICAL ENGINEERING					
1	Electrification Projects	??7,593.55	7,124.63	**?6,590.75**	**6,141.02**
2	Other Electrical Works including Traction Distribution Works.	**603.61	¥481.30	***739.69**	**652.23**
	TOTAL	8,197.16	7,605.93	**7,330.44**	**6,793.25**

SIGNAL AND TELECOMMUNICATION					
1	S and T Works	1,374.70	1,620.69	**<1,858.35**	**1,900.84**
	TOTAL	1,374.70	1,620.69	**1,858.35**	**1,900.84**
OTHERS					
1	Computerization	423.45	282.81	**Δ563.00**	**390.01**
2	Railway Research	43.58	26.80	**■50.10**	**57.26**
3	User's Amenities	Ω Ω 2,583.39	1,902.90	**Ω 2675.90**	**2,583.45**
4	Investment in Non-Govt. undertaking including JVs/SPVs	16,634.98	16,924.88	**15,620.00**	**15,629.65**
5	Other Specified Works	708.94	455.73	**●830.62**	**482.85**
6	Training/HRD	102.55	85.73	**☒150.00**	**86.93**
7	Inventories	200.00	915.50	**0.00**	**686.09**
8	M.T.Ps.	1,577.50	1,515.18	**☑1,690.46**	**1,543.90**
	TOTAL	22,274.39	22,109.54	**21,580.08**	**21,480.14**
	GRAND TOTAL	1,56,351.99	!!1,35,455.10	**1,61,692.00**	**∑1,39,245.99**

Revised Estimates

@ Includes ₹542 crore under EBR(IF), ₹11,769 crore under EBR(Partnership) and ₹13,539 crore under EBR(Special). It also include ₹7,535 crore for National Project & Projects of National importance.

@@ Includes ₹2,900.50 crore for National Project and ₹544 crore for project of National Importance. It also include ₹599.26 crore under EBR(IF) and ₹14,506 crore under EBR(IF).

Includes ₹644 crore under EBR (IF), ₹2,846 crore under EBR(S) and ₹122 crore for national Project.

Includes ₹6 crore for National Projects. It also includes ₹849.10 crore under EBR (IF)

$ Includes ₹1,429.69 crore under EBR (IRFC), ₹1,000.00 crore under EBR(S) and ₹19,705 crore under EBR (IF))

$$ Includes ₹1,407 crore under EBR(IRFC) and ₹21,746.14 crore under EBR(IF).

% Includes ₹500 crore under EBR (IF) and ₹792 crore EBR (Partnership).

%% Includes ₹618.57 crore under EBR (IF) and ₹254.82 crore under EBR(PPP).

⊗ Includes ₹800 crore under EBR (Special).

& Includes ₹880 crore under EBR (Partnership), and ₹5,448.00 crore under EBR(S).

&& Includes ₹1,022.51 crore under EBR (PPP).

α Includes ₹10,500 crore under EBR (Special).

© Includes ₹862 crore under EBR (Special).

≥ Includes ₹200 crore under EBR (Special).

β β Provision for Udhampur Srinagar- Baramulla National Project.

^ Includes ₹33,137.31 crore under EBR (IRFC), ₹1,559 crore under EBR (Partnership) and ₹6,739.98 crore under EBR(S).

^ ^ Includes ₹141 crore under EBR (Special)and ₹1,074 crore under EBR

++ Includes ₹408.85 crore under EBR (Special)

£ Includes ₹10 crore under EBR (IF) and ₹1,942.45 crore EBR (Special).

££ Includes ₹24.50 crore under EBR(IF) and ₹1942 crore under EBR(Special).

? Includes ₹6,599 crore under EBR(IF).

? ? Includes ₹7,602.55 crore under EBR (IF).

* Includes ₹647.94 crore under EBR (Special).

** Includes ₹120 crore under EBR (PPP).

< Includes ₹1,857.08 crore under EBR (Special).

Δ Includes ₹250 crore under EBR (Special).

■ Includes ₹0.10 crore under EBR (Special).

Ω Includes ₹900.60 crore under EBR (Special) .

Ω Ω Includes ₹702 crore under EBR(PPP).

● Includes ₹410 crore under EBR(Special).

☒ Includes ₹141 crore under EBR(Special).

☑ Includes ₹1,415 crore under EBR(Special).

Actual Net Expenditure

∑ Excluding actual expenditure of ₹15,935.02 crores under EBR(PPP) during 2020-21.

!! Excluding actual expenditure of ₹12,609.38 crores under EBR(PPP) during 2019-20.

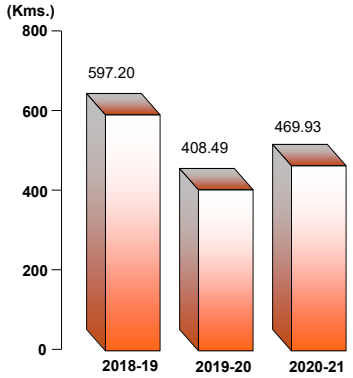
ØØ Staff Quarters and Amenities for Staff merged & reclassified as staff welfare.

¥ Reclassified as other Electrical works including TRD

μ Includes ₹ 3,098.42 crore reported by Railways under new lines (const.) dividend free projects now merged with new lines (const.)

Engineering

GAUGE CONVERSIONS



During 2020-21, 286.31 Kms of new lines were constructed, track of 469.93 Km was converted from MG/NG to BG and 1,614.18 Kms of double/multi-tracking line commissioned. The details of the same are given below:

Gauge Conversion

During 2020-21, 469.93 Kms of track was converted from MG/NG to BG as detailed below:

SN	Railway	Section	Km.
1	ECR	Jhanjharpur - Tamuria	9.00
2	ECR-N	Saraigarh-Raghopur	11.00
3	NER	Pilibhit – Shahbaz Nagar	42.00
4	SCR	Akola-Akot	44.40
5	SECR	Bhandarkund – Bhimal gondi	23.00
6	SECR	Chiraidongri – Mandla fort	24.00
7	SECR	Lamta – Samnapur GC	25.00
8	SECR	Nainpur - Bhoma	55.62
9	SECR	Chhindwara - Chourai	32.75
10	SR	Usilampatti - Andipatti	21.00
11	SR	Singaperumal Koil-Chengalpattu	8.50
12	SR	Guduvancheri-Singaperumal Koil	11.00
13	WR	Vadnagar-Varetha	21.04
14	WR	Dungarpur-Raigadh Road	70.73
15	WR	Dabhoi-Chandod	18.66
16	WR	Fatehabad Chandravati Ganj-Ujjain	21.54
17	WR	Kalol-Dangarwa	18.19
18	WR	Nimar Kheri-Sanawad	12.50
		Total	469.93



Repair Work Near Godavari Bridge, SCR

Doubling

During 2020-21, 1,614.18 Kms of double/multiple lines track was completed.

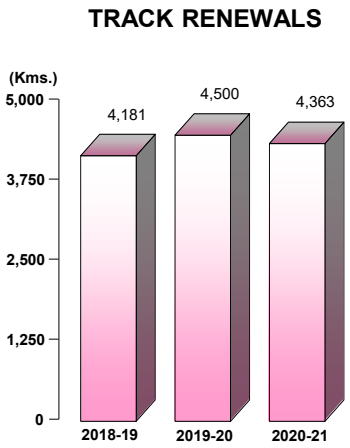
New Lines

During 2020-21, 286.31 Km of new lines have been completed on the following sections:

SN	Railway	Section	Km.
1	ER	Poreyahat-Godda	16.50
2	ECR/N	Saraiagarh-Asanpurkupha	13.00
3	ECoR	Kendrapara (KDRP)-Paradeep	39.54
4	NR	Rohtak Elevated track	4.85
5	NWR	Gangapur City-Piplai	24.72
6	SCR	Manoharabad-Gajwel	31.00
7	SCR	Jaklair-Makthal	11.50



LHB Coaches IR



8	SECR	Keoti-Antagarh	16.95
9	SECR	Korichhapar-Dharamjaigarh Road	30.00
10	SECR	Katangi-Tirodi	14.93
11	SWR	Gangavathi-Karatagi	28.00
12	WCR	Jhalrapatan-Junakheda	13.70
13	WR	Alirajpur-Khandala	9.72
14	WR	Chandod-Kevadiya	31.90
		Total	286.32

Track Renewal

During 2020-21, 4,363 kms of Complete Track Renewal (CTR) units of track renewal was carried out. Year-wise details of Track Renewals carried out and expenditure incurred thereon are as under:

Year	Gross expenditure (₹in crore)	Track Renewal carried out (in kms)
2019-20	9,390.55	4,500
2020-21	13,522.64	4,363

One Complete Track Renewal (CTR) units comprises of one km of Through Rail Renewal (0.5 CTR units) and one km of Through Sleeper Renewal (0.5 CTR units).



Digital laboratory, IRICEN

Track Upgradation

The track constitutes the basic infrastructure of a railway system and bears the burden of coping with ever increasing traffic. Higher speed and heavy axle load operation of IR has necessitated up-gradation of the track structure. Several policy initiatives have been taken in order to modernize the track.

Track structure is upgraded at the time of renewals. Sleepers are being upgraded from wooden, steel and CST-9 to PSC (Normal/Wider Base) sleepers. Heavier section and high tensile strength 60kg 90UTS/R260 rails are used in place of 90R/52kg 72/90 UTS rails. Similarly, long rail panels or welded rails are predominantly used in place of earlier fish plated joints. The sturdier turnouts using thick web switches are being provided on trunk routes and high density routes. As on 31-03-2021, on BG main lines of IR, about 89.61% of the length is covered by long welded rails, 99.36% with PSC sleepers and 98.28% with 52kg/60kg 90 or higher UTS rails.



Kosi Rail Mega Bridge, ECR

Welded Rails

On most of BG track, rails have been converted into long Welded Rails. Short- welded Rails of 39m length and Single Rails are limited to locations, where welded rails are not permitted on technical grounds. As on 31.3.2021, total length of welded tracks on main lines of Indian Railways was 93,248.7 km out of which 84,019.7 km was long welded rails and 9,229 km was short-welded rails.

(A) Track Modernization

Indian Railways is working towards progressive mechanization of maintenance, laying, inspection and monitoring of track. Some of the major steps taken during 2020-21 are as below:-

(i) **Rail Grinding Machines (RGM):** Rail grinding is a regular rail maintenance practice over world Railways for enhancing the life of the rails as well as to reduce the rail fractures, to improve the worn profile of rail head, rail wheel contact band, its location, to remove fatigued material having micro cracks and other surface defects on the rail head and to remove corrugations. IR has started rail grinding with deployment of 2 nos. 72-stone RGMs in the year 2011-12, one each in NCR and SCR. 96-stone high productivity rail grinding machines (30-40% more productivity than the available RGMs) are being introduced to cover IR network.

(ii) **Switch Rail Grinding Machine (SRGM):** Besides the grinding of plain track, grinding of Turnouts is also very important activity for enhancing the life of assets and reducing the failures. Presently, grinding of mainline rails is done, but turnout switches, LC gates, sharp curves with check rails etc. are left without grinding. SRGMs are being introduced to grind the turnouts of all Zonal Railways.

(B) **Track Recording Cars (TR)** are deployed for recording of track parameters at periodic intervals to enable planning of track maintenance. During 2020-21, a total of 1,76,205 km track recording was done.

During 2021-22 (Upto Sep., 2021) 92 nos. of track machines were added to the fleet of Track Maintenance Machines of IR taking the total to 1,178 nos. This was done despite the restrictions in manufacturing due to COVID-19 pandemic.

Bridges

As on 01.04.2021, Indian Railways has a total number of 1,55,278 Bridges out of which 729 bridges are important, 12,493 bridges are major and 1,42,056 bridges are minor.

During the year 2020-21, 1,114 bridges were strengthened/ rehabilitated/rebuilt to enhance safety of train operation.

Level Crossing

Level crossings are meant to facilitate the smooth running of traffic in a regulated manner governed by specific rules and conditions. Status of level crossings on IR as on 01.04.2021 is as under:

Total number of level crossings	:	20,395
Number of manned level crossings	:	19,532 (95.8%)
Number of unmanned level crossings	:	863 (4.2%)

Indian Railways has decided to progressively eliminate the level crossings for the safety of Road users and train passengers. During the year 2020-21, 961 nos. of manned level crossings have been eliminated. All unmanned level crossings on Broad Gauge have already been eliminated on 31.01.2019.

Road Over/Under Bridges

To improve safety of train operation and reduce inconvenience to road users, level crossings are being replaced by Road Over/Under Bridges/ Subways (ROBs/RUBs) in a phased manner based on the quantum of traffic.

During the year 2020-21, 174 ROBs and 959 RUBs/subways have been constructed under cost sharing, railway cost/accommodation works, Deposit/BOT term and by NHAI over IR.

Bridge inspection and management System

Modern Bridge Inspection techniques have been adopted, which includes inspection by drones, under water inspections, monitoring the water level with the help of water level system, 3D scanning of river bed etc.

Land Management

As on 31.03.2021, Indian Railways (IR) owns about 4.84 lac hectares of land. About 90% of this land is under Railways' operational and allied usages such as laying of new lines, doubling, gauge conversion, track, stations, workshops, staff colonies, etc.

The break-up of the land is as under:

S. No.	Description	Area (in lac hectares)
1.	Track and structures including Stations, colonies, etc.	3.60
2.	Afforestation	0.43
3.	'Grow More Food' scheme	0.02
4.	Commercial licensing	0.04
5.	Other uses like pisciculture	0.12
6.	Encroachment	0.01
7.	Vacant land	0.62
	Total	**4.84**

Creation of various infrastructure facilities for development of future rail network largely depends on the availability of land. Therefore, preservation and meaningful interim use of railway land is the main objective of IR's land-use policy.

During 2020-21, Railway did mass plantation of 93 lac trees. Railways have already finalized a model agreement with Ministry of Environment & Forests to be entered by Zonal Railways with State Forest Departments. Moreover, now instructions have been issued to all Zonal Railways to make provision of 1% in all estimates to environment related matter. This will help in meeting the cost of plantation. As such, Railways are making all efforts to plant more and more trees.

Besides, railway land is also licensed to railway employees belonging to Group 'C' and 'D' category under 'Grow More Food' scheme, for growing vegetables, crops etc.

Licensing of railway land is permitted for purposes directly connected with railway working. Plots of railway land at stations, goods sheds and sidings are licensed to other parties for stacking/storing of goods either

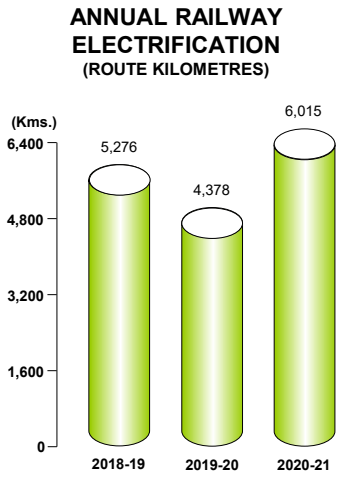
received or to be dispatched by rail. Railway land is also leased to Kendriya Vidyalaya Sangathan to open Kendriya Vidyalayas. A part of this land is also leased to Central/State Governments/ Public Sector Undertakings on long term basis for public utility purposes like ROB/RUB, construction/ widening of roads, etc.

Railways have also taken up commercial use of such land which may not be required by the Railways for its immediate future use. Through an amendment to Railways Act, 1989, Rail Land Development Authority (RLDA), under the Ministry of Railways was constituted on 1st November, 2006 to undertake all tasks related to commercial development on railway land/air-space under the control of Ministry of Railways. 87 sites measuring 266.68 hectares (approx.) were entrusted to RLDA for commercial development upto 31.03.2021. Necessary action for development of these sites is under process by RLDA. Besides commercial development of vacant Railway land, RLDA has also been assigned the task of development of Multi Functional Complexes (MFCs).



Byappanahalli Railway station

Railway Electrification



With a view to reduce the Nation's dependence on imported petroleum based energy and to enhance energy security to the Country as well as to make the Railway System more eco-friendly and to modernize the system, Indian Railways have been progressively electrifying its rail routes.

In pre-independence period, electrification remained confined to 388 Route kilometers (RKMs) and it is only in the post-independence period that further electrification was taken up. Since then, there has been no looking back and the Indian Railways have slowly but steadily electrified its routes.

By March, 2021, electrification on Indian Railways has been extended to 44,802 RKMs out of the total Broad Gauge (BG) rail network of 68,103 RKMs including Konkan Railway. This constitutes 65.79% of the total BG Railway Network. On this electrified route, 67.3% of freight traffic & 59.6% of Passenger traffic is hauled with fuel cost on electric traction being merely 38% of the total traction fuel cost on Indian Railways. Further, Indian Railways has planned to electrify remaining BG rail routes expeditiously in mission mode.

With the progressive electrification, metro cities of Delhi, Mumbai, Kolkata and Chennai have already been interconnected with electric traction. Mumbai-Chennai route is also electrified except Mohol-Hotgi - Dudhani, on which electrification work is in progress and targeted for completion during 2021-22.

II Progress of Railway Electrification

(a) The progress of Electrification since independence is tabulated below:

Year	Cumulative Electrified (RKM)
1951	388
1961	748
1971	3,706
1981	5,345
1991	9,968
2001	14,856
2011	19,607
2018	29,228
2019	34,319
2020	39,329
2021	**44,802**

(b) During year 2020-21, 6,015 RKM has been electrified.



Electrification work in Tatanagar Badampahar section SER

III Sections Electrified in (2020-21)

S. No.	Section	Railway	State	RKM
1.	Taj-sultanpur-Gulbarga-Dudhani	CR	Karnataka	64
2.	Dhalgaon-Kurduvadi- Mohol & Kurduvadi-Bhigvan	CR	Maharashtra	254
3.	Shindaane-Jejuri	CR	Maharashtra	27
4.	Miraj-Shenoli	CR	Maharashtra	63
5.	Banka-Bhagalpur-Shivanarayanpur	ER	Bihar	93
6.	Madhupur-Giridih	ER	Jharkhand	42
7.	Rampurhat-Harinsing-Dumka	ER	Jharkhand	64
8.	Manigram - New Farakka	ER	West Bengal	56
9.	Muzaffarpur-Sitamarhi-Darbhanga	ECR	Bihar	130
10.	Karaila Road- Shaktinagar	ECR	Uttar Pradesh	33
11.	Dildar Nagar Jn.-Tarighat	ECR	Bihar	20
12.	Natesar-Islampur	ECR	Bihar	21
13.	Kendrapara Road-Paradeep	ECOR	Odisha	36
14.	Khurda Road-Nayagarh	ECOR	Odisha	66
15.	Jakhal-Duhri-Lehra Mahabbat	NR	Punjab	132
16.	Prayag-Prayag ghat	NR	Uttar Pradesh	2
17.	Aonla-Bareilly	NR	Uttar Pradesh	28
18.	Phaphamau-Pratapgarh	NR	Uttar Pradesh	46
19.	Sultanpur-Chilbila	NR	Uttar Pradesh	36
20.	Janghai - Zafrabad	NR	Uttar Pradesh	48
21.	Delhi cantt-Patel Nagar Cantt.	NR	Delhi	4
22.	Virbhadra-Yog Nagari Rishikesh	NR	Uttarakhand	6
23.	Rohtak Elevated Track	NR	Haryana	5
24.	Unnao-Balamau-Sitapur	NR	Uttar Pradesh	160
25.	Noli-Shamli	NR	Uttar Pradesh	79
26.	Garhi Harsaru-Farrukhnagar	NR	Haryana	11
27.	Raebareli-Unchhahar & Daryapur-Dalmau	NR	Uttar Pradesh	59
28.	Batala Qudian & Amritsar-Chheharta	NR	Punjab	27
29.	Amb-Andaura-Daulatpur	NR	Himachal Pradesh	16
30.	Gohana- Pandu Pindara	NR	Haryana	37
31.	Etawah-Bhandai	NCR	Uttar Pradesh	126
32.	Bhatni-Aunrihar	NER	Uttar Pradesh	126
33.	Kasganj-Bareilly-Pilibhit- Majhola Pakariya	NER	Uttar Pradesh	185
34.	Majhola Pakariya-Tanakpur	NER	Uttarakhand	37



Electrification work on North Western Railway

35.	Sitapur-Lakhimpur	NER	Uttar Pradesh	45
36.	Duraundha-Mashrakh	NER	Bihar	42
37.	Salempur-Barhaj Bazar	NER	Uttar Pradesh	20
38.	Indara-Phephna	NER	Uttar Pradesh	50
39.	Mandhana-Brahmavart	NER	Uttar Pradesh	9
40.	Gorakhpur-Anandnagar	NER	Uttar Pradesh	41
41.	Gonda-Subhagpur	NER	Uttar Pradesh	6
42.	New Jalpaiguri- New cooch behar-Jorai	NFR	West Bengal	171
43.	Jorai-Srirampur Assam	NFR	Assam	11
44.	Bongaigaon-Rangiya-Kamakhya	NFR	Assam	151
45.	Bassi-Jaipur-Kanakpura	NWR	Rajasthan	42
46.	Swarupganj -Maval	NWR	Rajasthan	38
47.	Bhiwani By pass line New line	NWR	Haryana	1
48.	Ringas-Jaipur- Sheodaspura-Padampura	NWR	Rajasthan	82
49.	Churu-Sadulpur-Gogameri-Nohar	NWR	Rajasthan	164
50.	Madar-Bangurgram-Beawar	NWR	Rajasthan	58
51.	Thiruvarur-Nagore	SR	Tamil Nadu	31
52.	Nagore-Karaikal	SR	Puducherry	11
53.	Mayiladuturai-Thanjavur	SR	Tamil Nadu	68
54.	Cuddalore port-Vriddhachalam	SR	Tamil Nadu	57
55.	Nidamangalam-Mannargudi	SR	Karnataka	13
56.	Jokatte-Panambur	SR	Tamil Nadu	9
57.	Medchal-Manoharabad	SCR	Telangana	13
58.	Vijayawada-Bhimavaram	SCR	Andhra Pradesh	107
59.	Gudivada-Machilipatnam	SCR	Andhra Pradesh	36
60.	Lingampet Jagityal-Mortad	SCR	Telangana	51
61.	Dharmavaram-Kadiri	SCR	Andhra Pradesh	67
62.	Vikarabad-Kohir deccan	SCR	Telangana	45
63.	Akola-Lohagad	SCR	Maharashtra	35
64.	Falaknuma-Umdanagar	SCR	Telangana	14
65.	Tenali-Repalle	SCR	Andhra Pradesh	33
66.	Bankura-Masagram	SER	West Bengal	117
67.	Ramkanali-Chourashi	SER	West Bengal	6
68.	Rupsa-Bhanjpur	SER	Odisha	56
69.	Tatanagar-Bahalda Road	SER	Jharkhand	42
70.	Bahalda Road-Gorumahisani	SER	Odisha	23

71.	Bhimalgondi-Bhandarkund	SECR	Madhya Pradesh	18
72.	Nainpur- Lamta-Samnapur	SECR	Madhya Pradesh	58
73.	Chiraidongri-Mandla Fort	SECR	Madhya Pradesh	23
74.	Tumsar Road-Dongri Buzurg	SECR	Maharashtra	26
75.	Dongri Buzurg-Tirodi	SECR	Madhya Pradesh	20
76.	Marauda -Balod	SECR	Chhattisgarh	52
77.	Padnur -Kalgurki	SWR	Karnataka	95
78.	Rayadurg-Molakalmuru	SWR	Andhra Pradesh	16
79.	Molakalmuru-Chitradurga	SWR	Karnataka	83
80.	Karignuru-Harlapur-Hulkoti	SWR	Karnataka	103
81.	Hubballi-Alnavar	SWR	Karnataka	65
82.	Anekal -Palakkodu	SWR	Tamil Nadu	85
83.	Hotgi-Padnur	SWR	Maharashtra	30
84.	Mathela-Nimarkheri- Sanawad & Nimar kheri- NTPC siding	WR	Madhya Pradesh	99
85.	Vadnagar-Varetha	WR	Gujarat	20
86.	Dhola-Savarkundla-Pipavav	WR	Gujarat	146
87.	Q-Track(Nimach-Chittaurgarh)	WR	Rajasthan	4
88.	Vishwamitri-Dabhoi-Chandod-Kevadiya & Dabohi-Bodeli	WR	Gujarat	118
89.	Ujjain-Fatehabad Chandrawati Ganj	WR	Madhya Pradesh	22
90.	Hapa-Bhatiya & Jamnagar-Windmill	WR	Gujarat	109
91.	Rau-Tihi	WR	Madhya Pradesh	8
92.	Anand-Khambhat	WR	Gujarat	52
93.	Pachor Road-Maksi	WCR	Madhya Pradesh	88
94.	Katni-Satna & Jhukahi-Kymore	WCR	Madhya Pradesh	116
95.	Mahdeiya Majhauli	WCR	Madhya Pradesh	21
96.	Shivpuri-Gwalior	WCR	Madhya Pradesh	122
97	Jhalawar city-Juna Khera	WCR	Rajasthan	21
98	Chanderia-Gurla	WCR	Rajasthan	157
99	Bijoor-Karwar	KRCL	Karnataka	132
100	Roha-Ratnagiri	KRCL	Maharashtra	202
	Total			**6,015**

IV Important Railway Electrification Projects Completed during 2020-21:

S. No.	Section	Railway	State	RKM
1	Amla-Chhindwara-Kalumna	CR & SECR	Madhya Pradesh & Maharashtra	257
2	Bonidanga Link Cabin / Bonidanga - Barharwa - Sahibganj - Kiul incl. Tinpahar - Rajmahal	ER	Bihar & Jharkhand	247
3	Katwa-Azimganj-Nalhati & Azimganj-Tildanga/New Farakka incl. Nalhati & Azimganj bypass line	ER	West Bengal	200
4	Garhwa Road - Chopan - Singrauli	ECR	Jharkhand, Madhya Pradesh & Uttar Pradesh	257
5	Giridih-Nawadih-Koderma Jn.	ECR	Jharkhand	114
6	Muzaffarpur - Sitamarhi	ECR	Bihar	64
7	Jakhal - Dhuri - Ludhiana	NR	Punjab	123
8	Janghai-Zafrabad	NR	Uttar Pradesh	47
9	Phaphamau-Partapgarh	NR	Uttar Pradesh	46
10	Raebareli-Unchahar incl. Dalmau-Daryapur	NR	Uttar Pradesh	63
11	Rajpura - Dhuri - Lehra Muhabhat	NR	Punjab	151
12	Unnao-Balamau-Sitapur	NR	Uttar Pradesh	162
13	Bhandai-Udi	NCR	Uttar Pradesh	113
14	Sawai Madhopur-Jaipur-Ringas	NWR	Rajasthan	188
15	Shoranur-Mangaluru-Panambur	SR	Karnataka & Kerala	328
16	Villupuram-Cuddalore Port-Mayiladuturai- Thanjavur & Mayiladuturai-Thiruvarur	SR	Tamil Nadu	228
17	Bankura-Mashagram	SER	West Bengal	118
18	Tumsar Road - Tirodi	SECR	Madhya Pradesh & Maharashtra	47
19	Gondia-Nainpur-Jabalpur	SECR	Madhya Pradesh & Maharashtra	229
20	Guna-Gwalior	WCR	Madhya Pradesh	227
21	Singrauli-Katni	WCR	Madhya Pradesh	260
22	Vijaipur-Maksi	WCR	Madhya Pradesh	188
23	Itarsi - Katni - Manikpur incl Satna - Rewa and Manikpur - Chheoki	WCR & NCR	Madhya Pradesh & Uttar Pradesh	653

Signal and Telecom

Signalling

To enhance safety in train operations and make it efficient, Modern Signaling Systems comprising of Panel Interlocking/Route Relay interlocking /Electronic Interlocking (PI/RRI/EI) with Multi Aspect Colour Light Signals (MACLS) are being progressively provided. So far 6,200 stations (covering about 99% of interlocked Broad Gauge stations) on Indian Railways have been provided with such systems, replacing the obsolete Multi Cabin Mechanical Signaling System, thus optimizing operational cost involved in its operation as well as enhancing safety by reducing human intervention. During the financial year 2020-21, 12 Stations namely, Pune (Goods Cabin 3 & 4) and Muzaffarpur have been provided with Major Route relay interlocking (RRI), Kiul, Ajmer, Nallapadu, Rajahmundry, Rajkharsawan, Jolarpettai (A, B,&C, Cabin), Tambaram, Hosapete Junction, Baiyyppanahlli and Hubbali with Electronic Interlocking (EI). Panel Interlocking (PI) and Electronic Interlocking (EI) have been provided at 34 stations and 311 stations respectively.

Complete Track Circuiting: To ensure track occupation verification, Track Circuiting has been completed at about 34,572 locations up to 31.03.2021 covering 'A', 'B', 'C', 'D' Special and 'E' Special routes. Total 6,203 stations (99%) have been provided with complete track circuiting over Indian railways.

Block Proving by Axle Counter (BPAC): To enhance safety and improved mobility, automatic verification of complete arrival of train at a station, Block Proving by Axle Counter (BPAC) is being provided at stations having centralized operation of points and signals. As on 31.03.2021, Block Proving by Axle Counters (BPAC) has been provided on 5,805 block sections.

Intermediate Block Signaling: Provision of Intermediate Block Signaling (IBS) has proved very useful in enhancing line capacity without extra recurring revenue expenditure in form of operating manpower and amenities required while developing and operating a block station. As on 31.03.2021, Intermediate Block Signaling has been provided in 628 block sections on Indian Railways.

Automatic Block Signaling: For augmenting Line Capacity and reducing headway on existing High Density Routes on Indian Railways, Signaling provides a low cost solution by provision of Automatic Block Signaling. As on 31.03.2021, Automatic Block Signaling has been provided on 3,447 Route Km.

Advance Train Protection System: Provision of Advance Train Protection (ATP) System is a desirable Signalling requirement to run a train above 140 Kmph of speed. Presently Gatiman Express is running at 160 Kmph on New Delhi – Agra section of 200 Route Km where European Train



Display of Signals in TCAS DMI, SCR

Control System Level-1 ATP System has been provided by the Railway.

RDSO with three Indian OEMs has developed India's own ATP System name KAVACH (Train Collision Avoidance System). The system has been provided on 571 Route Km of Indian Railway. Further work of KAVACH at 879 Route Km is in progress.

KAVACH has also been sanctioned as part of Mission Raftar to upgrade the speed on New Delhi – Mumbai and New Delhi – Howrah section up to 160 Kmph.

Further, KAVACH (TCAS) works have been included in works programme covering High Density Network (HDN), Highly Utilized Network (HUN) and other routes of Indian Railways.

Centralized Traffic Control (CTC): It is a computer based system which facilitates direct control and management of multiple Signalling installations covering a number of stations from a single location. It also provides a real time simulation of railway traffic centrally helping in real time traffic planning for punctual train operations.

Centralized Traffic Control (CTC) covering 250 Route km of Double line section with 29 stations on Aligarh - Kanpur Route has been operationalzed.

Further works of CTCs on about 14,660 Route Km including all entire HDN Routes have been approved.

Train Management System: TMS provides real-time status of train positions, all train movements and a complete view of the section covered on a giant screen provided in the divisional control centre. Punctuality reports, rake and crew links, train graphs, and unusual occurrence reports are generated in the control office.

The overall display panel, known as the 'Mimic Indication Panel', is designed to present detailed status of the system at a glance. It is expected that with commissioning of TMS/CTC projects, our controllers shall be able to efficiently manage train operations. Besides providing real time train running information in the control offices, passengers shall also be provided with accurate arrival/departure information at stations through automatic working of the Passenger information System at Stations

Interlocking of Level Crossing Gates: Indian Railways have provided interlocking with Signals at 11,710 Level Crossing Gates as on 31.03.2021 to enhance the safety at Level Crossings.



Maintenace Activity at Record Level SCR

Sliding Boom at LC Gate: Provision of Interlocked Sliding Boom has become very effective in minimizing disruption to train services when Level Crossing Gates get damaged by road vehicles especially in suburban areas. With provision of Sliding Boom Interlocking, Signalling System continues to function normally with minimum effect on train operation. 5,897 Nos. of busy interlocked gates have been provided with Sliding Booms as on 31.03.2021 in addition to lifting barriers and further busy gates are also being progressively covered.

Growth of deployment of Signaling on Indian Railways (As on 31.03.2021)

Item	Mar'17	Mar'18	Mar'19	Mar'20	Mar'21
Panel Interlocking (Stations)	4,155	4,130	4,052	3,863	**3,747**
Route Relay Interlocking (Stations)	281	282	228	228	**247**
Electronic Interlocking (Stations)	1,148	1,358	1,606	1,927	**2,206**
PI/RRI/EI (Stations)	5,584	5,770	5,886	6,018	**6,200**
Block Proving by Axle Counter (Block sections)	4,976	5,058	5,363	5,663	**5,805**
Automatic Signaling (Route Km)	2,866	2,901	3,039	3,309	**3,447**
Intermediate Block Signaling (Block sections)	501	532	574	602	**628**
Interlocked level Crossing Gates (Nos.)	10,826	11,006	11,375	11,639	**11,710**

Self-Sufficiency: Signaling Workshop: Railway signaling installations use a number of specialized equipment for smooth & safe running of trains. With upgradation in technology and shift towards electrical/ electronic system of signalling, the demand for these equipments has gone up. To attain self-sufficiency in meeting this increased demand, IR's Signal Workshops have been manufacturing items like Electric Point Machines, Tokenless Block Instrument, Double Line Block Instruments, Axle Counters, various types of Relays etc.

Telecommunication

Telecommunication plays an important role in train control, operation and safety on IR. Indian Railways has set up a state of the art, nationwide telecom network for meeting its communication needs. RailTel, a Railways Central Public Sector Enterprise formed in September, 2000 is successfully exploiting surplus capacity of IR Telecom network commercially.

As on March 2021, Indian Railways has about 61,526 Route Kilometers of Optical Fibre Cable (OFC) that is carrying Gigabits of traffic. Railways Control Communication which is quintessential for train operation and control is also being run on OFC system. This OFC network is also contributing significantly in building National Knowledge Network through RailTel. It is also planning to provide Broadband connectivity to Panchayats through this OFC network.

Railways have planned Wi-Fi facility to be provided at all stations excluding Halt Stations for internet facility to passengers which will aid in "Digital India" initiatives of Govt. of India. Wi-Fi internet facility at 6,060 stations has been provided till 30.09.2021. Work is in progress at remaining feasible stations by M/s Tata Trust without incurring any expenditure by Ministry of Railways. Wi-Fi system has also been provided at Railway Offices & 80 Divisional & Zonal Hospitals over IR.

To enhance the security of passengers & premises and to work as a strong deterrent to crime in station premises particularly those against

women and children, Indian Railway has planned to provide Video Surveillance System at all stations except halt stations on Indian Railways. Video Surveillance (CCTV) System has been provided at 829 stations till 31.08.2021. In addition, CCTV also provided at Railway Offices & 80 Divisional & Zonal Hospitals over Indian Railways.

Indian Railways has also rolled out Global System of Mobile Communication – Railways (GSM-R) based Mobile Train Radio Communication (MTRC). MTRC has already been provided on 3,445 Route Kms. Now Railways have decided to go for Long Term Evolution (LTE) System based MTRC to fulfill the data, voice and video needs. 5 MHz spectrum in 700 MHz band has recently been allotted by Cabinet for rolling out LTE.

Indian Railways has its own satellite hub that is being utilized for connecting remote locations for Freight Operation Information System (FOIS), Unreserved Ticketing System (UTS)and Disaster Management System as well as for other critical communication needs. Beside IR network uses 17,254 data circuits that power its various data and voice networks across the country.

Railways have also established their Multi-Protocol Level Switching (MPLS) based Network for voice traffic. This Network has been used to interconnect exchanges of Railways, carrying the administrative voice traffic. Common User Group (CUG) mobile phones have also been hired to enable communication while on move to enhance safety, reliability and productivity. IR is also utlizing more than 1.6 lakh VHF walkie-talkies sets to ensure safety and enhance reliability.

Internet has changed the way organizations work today. It is impacting almost all the activities of daily life today. Broadband penetration is also taken as an indication of growth. Indian Railways has also embraced this technology and is using it effectively. It has recently provided broadband in all its major colonies in zonal and divisional headquarters.

Telecom also plays a major role in ensuring passenger comfort. For the convenience of passengers, Train Information Boards have been provided at 1,147 Stations, Public Address (PA) Systems at 4,752 stations and Coach Guidance System at 652.

Indian Railway has installed a SIP server & commissioned SIP Phones on PAN India basis across Indian Railways. Indian Railways are extensively utilizing Video Conferencing services (both Codec based and web based) for conducting various Meetings, Training, Conferences and Seminars thereby duly following social distancing measures.

Implementation of e-Office application over Indian Railways as a part of digital initiative & to go paperless in the office working which would ultimately improve transparency and efficiency in the system, is also under implementation over Indian Railways. Till 30.09.2021, 216 locations including all zonal & divisional headquarters have been connected through e-Office & approx. 1.35 Lakhs user accounts have also been created over Indian Railways. Indian Railways have also enabled access of E-Office through Internet with the help of SSL-VPNs. A Secure Sockets Layer Virtual Private Network (SSL VPN) is a virtual private network (VPN) created using

the Secure Sockets Layer (SSL) protocol to create a secure and encrypted connection over the Internet.

Important Telecom assets are tabulated below:-

SN.	Installation	Units	As on 31.03.2020	As on 31.03.2021
1.	Optical Fibre Cable	Rkms	59,105	**61,526**
2.	Quad Cable	Rkms	62,732	**62,818**
3.	Railway Telephone Subscribers Lines	Nos.	3,56,910	**3,45,374**
4.	No. of Control Sections provided with Dual Tone Multiple Frequency (DTMF) control equipment	Nos.	323	**325**
5.	Mobile Train Radio communication System (Route kms.):-			
a.	GSM (R) based	Rkms	3,445	**3,445**
b.	TETRA based	Rkms	53	**53**
6.	Public Address System	Nos. of STNs	4,508	**4,752**
7.	Train Display Boards	Nos. of STNs	1,137	**1,147**
8.	Coach Guidance System	Nos. of STNs	649	**652**
9.	VHF Sets			
a.	5 Watt sets (Hand held)	Nos.	1,53,999	**1,61,048**
b.	25 Watt sets (At Stations)	Nos.	9,767	**10,331**
10.	V SAT	Nos.	635	**516**
11.	UTS/PRS Circuits	Nos.	11,044	**11,174**
12.	FOIS Circuits	Nos.	3,030	**2,625**
13.	NGN &Exchange Circuits	Nos.	2,536	**2,045**
14.	Wi-Fi at Stations	Nos. of STNs	5,661	**5,969**
15.	CCTV at Stations	Nos. of STNs	598	**780**



Double Line work in Karra Govindpur Section SER

Safety

There were 21 consequential train accidents in the financial year 2020-21 as compared to 54 accidents in 2019-20. Train Accidents per Million Train Kilometers, an important index of safety, has come down to 0.03 during the year 2020-21 as compared to 0.05 during the year 2019-20.

Category-wise and Cause-wise analysis of consequential train accidents during the last two years i.e. 2019-20 & 2020-21 is given as under:

Categories	**No. of consequential train accidents**	
	2019-20	**2020-21**
Collisions	5	**1**
Derailments	40	**16**
Accidents at level crossings	1	**1**
Fire in trains	7	**3**
Miscellaneous	1	**-**
Total	54	**21**
Causes of train accidents:		
Human failures:		
(a) failure of railway staff	44	**16**
(b) failure of persons other than railway staff	5	**4**
Equipment failures:	4	**-**
(a) Rolling stock	3	**-**
(b) Track	1	**-**
(c) Electrical	-	**-**
(d) S&T	-	**-**
Sabotage	-	**-**
Combination of factors	-	**-**
Incidental	1	**-**
Cause not established/non held	-	**1**
Under Investigation	-	**-**
Total	54	**21**
Casualties:		
Passengers:		
Killed	00	**00**
Injured	73	**00**
Railway Employees:		
Killed	4	**1**
Injured	7	**11**
Others:		
Killed	1	**3**
Injured	2	**0**



Mock drill of accident preparedness with NDRF at Tatanagar station SER

Compensation

A sum of ₹104.38* lakh (approximately) was paid as compensation under section 124 of Indian Railways Act, 1989 for death/injury of passengers in train accidents to the next of kin/victims during 2020-21 as compared to ₹376.10* lakh (approximately) paid in 2019-20. The amount of compensation paid during the year relates to the number of cases settled and payment made during the year and not necessarily to the accidents that occurred during the year.

*Excluding Konkan Railways and Metro Railway, Kolkata.



Training on Welding Simulator, BLW

Damage to Railway Property

The cost of damage to railway property and duration of interruption to through communication caused by consequential train accidents during the years 2019-20 and 2020-21 were as under:

Year	Rolling stock (In lac)	Permanent Way (In lac)	Interruption to through communication (In Hrs)
2019-20	3,232.97	566.87	309.47
2020-21*	**1,765,85**	**477.52**	**839.43**

*Provisional

Rashtriya Rail Sanraksha Kosh (RRSK)

'Rashtriya Rail Sanraksha Kosh (RRSK)' has been introduced in 2017-18 for replacement/renewal/upgradation of critical safety assets, with a corpus of ₹1 lakh crore for five years, having annual outlay of ₹20,000 crore. Expenditure of ₹16,091 crore in 2017-18, ₹18,015 crore in 2018-19 and ₹15,024 crore in 2019-20 was made out of the Fund for safety works. In 2020-21 due to resource constraints the expenditure relating to works under Capital, railway Safety Fund and RRSK was incurred under EBR (Special), created as a one-time arrangement. Expenditure of ₹50,800.75 crore was incurred out of EBR(S). Expenditure of ₹369.98 crore has also been incurred under RRSK. In Budget Estimates 2021-22 provision of ₹20,000 crore has been made under RRSK.

Funds under RRSK are utilised for safety works relating to Traffic Facilities, Rolling Stock, Level Crossings, Road Over/Under Bridges, Track Renewal, Bridge Works, Signal and Telecommunication Works, other Electrical Works, TRD Works, Machinery and Plant, Workshops, Training/ HRD, Passenger Amenities and Other Specified Works.

Ministry of Finance has issued 'Guidelines for Operation of Rashtriya Rail Sanraksha Kosh (RRSK)', which inter alia, includes Monitoring Framework for RRSK. It stipulates setting up of Monitoring Committee headed by CEO/NITI Aayog to examine performance. It is also laid down that the progress will be reviewed annually by Cabinet Committee on Economic Affairs.

I. Measures to Improve Safety

- **Safety Focus -** to reduce accidents caused by human errors, a multipronged approach with focus on introduction of newer

technologies, mechanization of maintenance, early detection of flaws, etc. to reduce human dependence in the first place, alongwith upgrading the skills of the human resources were the prime drivers for accident prevention.

- **Periodical Safety Audits –** Periodical Safety Audits of different Divisions by multi-disciplinary teams of Zonal Railways as well as Inter-Railway Safety Inspections were conducted on regular basis. During the year 2020-21, 44 Internal Safety Audits and 08 Inter-Railway Safety Inspections were carried out.
- **Training facilities –** Refresher training imparted to 1,52,288 employees during the year 2020-21.

II. Measure To Avoid Collisions

To avoid collisions, Provision of technological aid pertaining to Signalling is briefly enumerated in the chapter 'Signal and Telecom' under "Signalling" section at page no 48 of this book.

III. Measures to Reduce Derailments

To avoid derailments, the measures taken, i.e., Track Renewal, Track upgradation and welded Rails are briefly enumerated in the chapter 'Engineering' at page no 38 of this book.

IV. Measures Taken To Strengthen The Safety And Reliability Of Railway Coaches To Prevent Fire In Coaches

1 Indian Railways is taking following steps to further strengthen the safety and reliability of Railway passenger.

i) Introduction of Automatic Fire and Smoke Detection system in AC

With a view to improve fire safety in running trains, Automatic Fire and Smoke Detection System are being provided in AC coaches. The specifications have been upgraded integrating the air brake system in the coaches with the fire and smoke detection system. At present in nearly 4,115 AC coaches, this system has been fitted. The work is being carried out in a phased manner. Further, instructions have been issued to Production Units that all newly manufactured AC coaches shall be provided with Automatic Fire and Smoke Detection System.

ii) Fire detection suppression system in Pantry cars and Power cars

Power Cars are more prone to fire due to presence of Diesel Alternator sets along with fuel tanks and other high voltage equipments. Pantry Cars are also more prone to fire due to cooking being carried out in these coaches. In this respect Automatic Fire Detection and Suppression system are being provided in Power cars and Pantry cars. At present 1,231 Power cars and 490 Pantry cars are fitted with this system. The work of retrofitment is being carried out progressively. Further, instructions have also been issued that the system should be provided in all newly manufactured LHB Power cars and LHB Pantry cars by the Production Units (PUs).

iii) Improving fire Retardancy in Coaches

Coaches are being provided with fire retardant furnishing materials such as Fire retardant curtains, partition paneling, roof ceiling, flooring, seat and berths along with cushioning material and seat covers, Windows and UIC Vestibules etc. The specifications of these items are being upgraded from time to time as a part of continual improvement. In the specification of major furnishing items, now a new parameter related to fire retardancy (i.e. heat release rate) has been introduced as per international norms.

iv) Provision of Fire Extinguishers

Dry chemical powder type fire extinguishers are provided in all Air-conditioned coaches, Second class- cum-guard and luggage van and Pantry cars. Instructions have been issued to Production Units to provide fire extinguishers in all newly manufactured non-AC coaches as well. Provision in existing coaches is also being carried out by Zonal Railways.

2) Indian Railways had taken following steps to further strengthen the safety and reliability of railway coaches:

i) Large scale proliferation of LHB coaches

Ministry of Railways has decided for large scale proliferation of LHB coaches which are technologically superior with features like Anti climbing arrangement, Air Suspension (Secondary) with failure indication system and less corrosive shell. These coaches have better riding and aesthetics as compared to the conventional ICF coaches. The Production units of Indian Railways are now producing only LHB coaches from April 2018 onwards. The production of LHB coaches are continually increased during the years. 1,469 coaches in 2016-17, 2,480 coaches in 2017-18, 4,429 coaches in 2018-19, 6,277 coaches in 2019-20 and 4,323 LHB coaches in 2020-21.

ii) Jerk Free Coach

Balanced draft Gear is a double acting device for energy absorption during coupling and service. The device is designed to absorb the dynamic energy in both draw and buff modes with two sets of elastomeric pads. Based upon successful trial and feedback, it was decided to proliferate Balanced draft Gear to reduce jerks in all LHB and ICF designed coaches.

iii) Progressive use of Air Springs

For enhancing safety and reliability of passenger coaches, the suspension systems are being redesigned with air springs at secondary stage capable to maintain constant height at variable loads. Air springs have been developed and are being fitted on all the newly built EMUs & DMUs coaches for sub-urban trains. Air springs have now been developed for mainline coaches as well and have been fitted in large scale in newly manufactured coaches. Production Units have been advised to use Air springs in all newly manufacture LHB coaches.

iv) Provision of Automatic door closure mechanism in coaches

Provision of Automatic door closure mechanism has been planned on coaches to prevent accidental falling of passengers from running trains.

Select variants of the main line coaches will be provided with Automatic door closure mechanism. Automatic door closure mechanism has also been provided in the coaches of Tejas rake running between Mumbai – Goa, Chennai-Madurai, Lucknow - New Delhi and Ahmadabad - Mumbai. Automatic door closure mechanism has also been provided in the coaches of Tejas sleeper rake of Agartala – Anand Vihar Rajdhani Express, which has been introduced in 2020-21 Automatic coaches entry doors have also been provided in the rakes of Vande Bharat train running between New Delhi- Varanasi and New Delhi- Shri Mata Vaishno Devi Katra.

Three air-conditioned EMU (Electric Multiple Unit) rake with Automatic doors has been manufactured at Integral Coach Factory, Chennai for Mumbai, Western Railway. Integral Coach Factory/Chennai has also turned out coaches for Kolkata Metro with Automatic door closure mechanism.

Further, instruction to have been issued to Production Unit's to turn out all future Humsafar and Uday train coaches with Automatic Plug type doors (4 nos. per coach).

v) Provision of Double Acting doors in coaches

Double Acting door in coaches are two way swing AC compartment doors for easy evacuation of passengers. Such doors need to be provided in the AC coaches so as to improve the fire worthiness and enable passengers to quickly evacuate from the coach in the event of fire.

V. Measures To Curb Accidents At Unmanned Level Crossing

Various measures taken by Indian Railways to prevent accidents at level crossings, are enumerated briefly under sections, Level crossings, Road-over/Under Bridges, Bridges and Bridges Inspection and Management System in the chapter 'Engineering' at page no 39 of this book.

VI. Other Administrative Measures

- **Constant Review of Safety Performance at Board's apex level -** Safety performance is invariably reviewed as a first item on Agenda of Board Meeting at the apex level. All accidents are analyzed in detail so that remedial measures can be initiated.
- **Safety Review meeting with Zonal Railways –** Chairman and Board members have conducted Safety Review Meetings with General Managers and PHODs of zonal railways during their visits as well as through video conference.
- **Intensive Footplate Night Inspections -** Intensive Footplate Inspections including night inspections have been conducted at the level of SAG, branch officers and supervisors in the field.
- **Regular Safety Drives & awareness campaigns –** Safety drives and awareness campaigns have been launched from time to time, covering the lessons learnt from recent train accidents so as to prevent similar accidents in future.
- **Disaster Management Plan and Standard Operating**

Procedures (SOPs)- As per the provision of Disaster Management Act, 2005, Ministry of Railways has prepared Disaster Management Plan for Ministry of Railways. All Zonal Railways and divisions have also prepared their Disaster Management Plan. These plans have detailed scheme for averting and handling various types of disasters affecting train operations. Apart from the above, detailed Standard Operating Procedure have been made for preventing and handling fire in railway coaches to minimize loss of life and property. Also detailed protocol for handling train accidents has been prepared.

- **Mock Drills/Exercises-** For coordination and management during Disaster/major train accidents, Indian Railways have been conducting Mock Drills with National Disaster Response Force (NDRF). Such drills are crucial to ensure full preparedness and to maintain operational readiness of the disaster response operation teams, institutional mechanisms, and the equipments. These drills are organized to test readiness to deploy within the shortest possible time. Apart from this, Zonal Railways conduct Mock drills quarterly in each division utilizing the resources of Railways i.e. Accident Relief Trains (ARTs), Accident Relief Medical Vans (ARMVs) etc. Shortcomings noticed and lessons learnt during the Mock drill are documented for corrective action and to improve SOPs.



Goods Shed at Azara station, NFR



Loco Assembly Shop, DMW

Rolling Stock

New Rolling Stock placed on line during the year 2020-21 is given in the following table:

Type of Rolling Stock		Units placed on line					
		Replacement account			Additional account		
	Year	B.G.	M.G.	N.G.	B.G.	M.G.	N.G.
Diesel Locos	2019-20	-	-	2	189	-	-
	2020-21	**-**	**-**	**-**	**296**	**-**	**-**
Electric Locos	2019-20	56	-	-	830	-	-
	2020-21	**51**	**-**	**-**	**666**	**-**	**-**
Wagons@ (in vehicle units)	2019-20	15,443	-	-	-	-	-
	2020-21	**12,521**	**-**	**-**	**-**	**-**	**-**
Electric Multiple Units							
Motor Coaches	2019-20	56	-	-	42	-	-
	2020-21	**32**	**-**	**-**	**3**	**-**	**-**
Trailer Coaches	2019-20	112			130	-	-
	2020-21	**64**	**-**	**-**	**06**	**-**	**-**
Main line Electric Multiple Units							
Motor Coaches	2019-20	2	-	-	170	-	-
	2020-21	**6**	**-**	**-**	**20**	**-**	**-**
Trailer Coaches	2019-20	2	-	-	513	-	-
	2020-21	**18**	**-**	**-**	**60**	**-**	**-**
Passenger Carriages	2019-20	1,612			3,787	-	-
	2020-21	**1849**	**-**	**2**	**1797**	**8**	
Other Coaching Vehicles	2019-20	229	-	-	649	-	-
	2020-21	**261**	**-**	**1**	**416**	**-**	**-**

@Total wagons produced during the year (including BLC & Private wagons)

Stock condemned during the year was as under:

Type of Rolling Stock						(in units)
	B.G.		M.G		N.G.	
	2019-20	**2020-21**	2019-20	**2020-21**	2019-20	**2020-21**
Diesel Locos	123	**372**	01	**10**	04	**07**
Electric Locos	56	**51**	-	**-**	-	**-**
Wagons (in Vehicle Units)	2,490	**1,833**	04	**04**	-	**-**
Electric Multiple Units						
Motor Coaches	191	**83**	-	**-**	-	**-**
Trailer Coaches	12	**169**	-	**-**	-	**-**
Passenger Carriages	1,612	**1,849**	28	**-**	09	**02**
Other Coaching Vehicles	229	**261**	02	**09**	-	**01**

Traction

The entire passenger and freight traffic, in terms of both Gross Tonne Kilometres (GTKMs) and Train Kilometres was carried by diesel and electric locomotives. Steam locomotives, however, continued to run on certain steam circuits including Hill Railways as icons of IR's glorious past.

The traction-wise fleet as on March 31, 2021, in comparison to the previous year, is as follows:

		(in units)
Locomotive	**As on March 31, 2020**	**As on March 31, 2021**
Steam	39	**39**
Diesel	5,898	**5,108**
Electric	6,792	**7,587**
Total	12,729	**12,734**



Work at steel foundry CLW

Manufacturing of Rolling Stock

The performance of Production Units during 2020-21 was as under:

- **Chittaranjan Locomotive Works (CLW), Chittaranjan** manufactured 390 nos state-of-the-art HHP electric locomotives including one 9000 HHP locomotive.
- **Banaras Locomotive Works (BLW), Varanasi** manufactured 285 locomotives including 10 diesel locomotives for Non-Railway Customers (NRC). The total sale value for NRC/Exports was ₹110.20 crore.
- **Integral Coach Factory (ICF), Chennai** manufactured 1,954 coaches including 272 three phase MEMU, 36 EMUs, 24 high speed Self Propelled Accident Relief Trains (SPART), 32 coaches for Kolkata Metro, 34 nos (DETC)/ inspection coaches and 77 coaches for Sri Lankan Railways. The total sale value for NRC/Export customers is ₹318.1 crore.
- **Rail Coach Factory (RCF), Kapurthala** manufactured 1,500 coaches including 03 MEMUs, 450 high capacity Parcel Vans and also developed Economy Class 3-tier Air-Condition coach with higher passenger carrying capacity.
- **Modern Coach Factory (MCF), Raebareli** manufactured 1,360 LHB coaches during 2020-21.
- **Rail Wheel Factory (RWF), Bengaluru** manufactured 1,23,678 wheels, 71,065 (units) axels and 50,605 wheel-sets. The sale value for Non Railway Customers (NRC) was ₹203.68 crore.
- **Rail Wheel Plant (RWP), Bela** produced 23,250 wheels during 2020-21.
- **Diesel Loco Modernisation Works (DMW), Patiala** manufactured 56 high Horse Power BG electric locomotives and 77 nos DETC inspection cars including one DETC for Non Railway Customers (NRC).



Coach Maintenance at Kalka workshop, NR

The details of innovations and new initiatives of EMU, MEMU and Kolkata Metro rakes during 2020-21 is as under

Electric Train Set (Vande-Bharat)

Manufacturing started for 44 Electric Train Set (Vande Bharat Express). The fully air conditioned train will have advanced passenger amenities



Samastipur Workshop ECR

such as on-board infotainment, GPS based passenger information systems. CCTV, automatic sliding doors with retractable coach footsteps and zero discharge vacuum based bio-toilets.

The first prototype rake is likely to be turned out by integral Coach Factory (ICF) in March, 2022.

At present, two Vande Bharat trains are being operated on New Delhi-Varanasi and New Delhi-Sri Mata Vaishno Devi Katra sectors. These trains have reduced the travel time by up to 22.50 percent. These projects have also provided an impetus to domestic manufacturing and have led to a multiplier effect on the Indian economy.

Air conditioned EMU

During 2020-21, Three Air Conditioned EMU rakes with indigenously developed 3-phase IGBT based on-board propulsion systems have been turned out from ICF.

3-Phase MEMU rakes

During 2020-21, 33 Main Line Electrical Multiple Unit (MEMU) rakes equipped with indigenously developed 3 phase IGBT based on-board propulsion system have been turned out from production units and commissioned in Railways.

3-Phase Kolkata Metro rakes:

During 2020-21, ICF has turned out 4 Kolkata Metro rakes with indigenous 3-Phase IGBT based propulsion system for Metro Railway Kolkata.

Head –On-Generation system (HOG)

Head on Generation system is electrical power supply system where electrical power for catering hotel load of train includes Train Lighting, Air conditioning, fan load and other passenger interface requirement working on electrical power supply.

- All LHB coaches have been made HOG complaint.
- All power cars have been made HOG Compliant.
- Reduction in diesel consumption on account of HOG operation 9,83,72,940 Ltrs.
- Reduction in fuel bill on account of HOG operation ₹737.79 crore.
- Reduction in Co2 emission on account of HOG operation 2,59,705 Tonnes.

Train operation of HOG complaint trains with single power car

The scheme of single power car system has been introduced for the trains in the route having the scope of End to End HOG compatibility without any enroute traction change.

Single power car system having two DA sets and LSLRD is being introduced in non AC Trains. In the Year 2020-21, 164 trains have been commissioned for single power car operation.



GEDL Final Inspection Bay ECR

LED lights in coaches

Railways have taken up the work of retro-fitment of LED light in

coaches under sanctioned item of Railway Board Bulk RSP for 64,864 coaches. In the year 2020-21, total 26,500 coaches have been retrofitted with Led fittings. Per coach per annum saving on account of LED lights is likely to be ₹25,500. For coaches converted in 2020-21, there is likely saving of ₹67.57 crore annually.

Development of Li-ion Batteries for TL-AC coaches.

Presently VRLA batteries are used in Indian Railways for rolling stock application (TL&AC). These batteries have been used in Railways since long with key features like 1% approx./month self discharge rate, temperature range 55°C, codal life of 4 years. There are certain problems during maintenance i.e. drying out of cells due to overcharging, thermal runs away, temperature & amp charging, ripple voltage, reverse polarity. As per information available with discussion of leading battery manufactures, to overcome this problem RDSO have been advised to conduct trial of these batteries on 5 coaches. Li-ion based batteries are light weight and more service life. Energy density per volume is 3-4 times higher than VRLA (235 WH as compared to 100 WH in case of VRLA batteries). Hence less space is required for same capacity.

Imports

The Import content of raw material/components, in terms of percentage of total production cost (excluding Proforma charges) for different types of Rolling Stock manufactured in Indian Railway Production Units for the year 2020-21 is furnished below:

	LOCOMOTIVES/COACHES	2020-21	2019-20
BLW	WAP-7	**1.08**	1.08
	WAG-9H	**1.63**	-
	WDG-3A	**4.5**	9.12
	WDS-6	**4.5**	4.5
	WDP-4D	**-**	9.36
	WAG-9	**-**	1.63
	Sri Lanka Loco	**-**	0.74
RCF	LGS	**0.87**	1.41
	LSLRD(LC)	**0.82**	1.33
	EOG/LHB/FAC	**0.72**	1.14
	SCZAC/EOG/LHB	**0.74**	1.18
	VPHX	**1.17**	1.91
	LWSCZ	**0.92**	1.43
	LWSCN	**0.91**	1.46
	LFCWAC	**0.72**	1.13
	ACCB/EOG/LHB	**0.72**	1.13
	WLRRM/EOG/LHB	**0.51**	0.86
	ACCW/EOG/LHB	**0.69**	1.09
	RA AC	**-**	1.45
	EOG/LHB/ACCN (Humsafar)	**-**	1.01
	LGS (Antyodya)	**-**	1.44
	DD UDAY	**-**	0.81
	LACCNX	**0.70**	1.11
	3 PH MEMU TC	**1.11**	-



Unloading of Cars from NMG Wagons at Nautanwa station NER



Maintenace of rolling stock NFR

	LOCOMOTIVES/COACHES	2020-21	2019-20
	LWSCN (COIL SPRING)	**0.89**	-
	LWACCN (GARIB RATH)	**0.71**	-
	LWLRRM (LOW NOISE)	**0.71**	-
CLW	WAG-9	**1.20**	2.84
	WAP-7	**1.34**	2.37
	WAP-5	**3.20**	8.25
MCF	LWFAC	**1.78**	2.27
	LWLRRM DAC	**1.36**	-
	LWCBAC/T	**1.61**	-
	LWFAC/T	**1.49**	-
	LWACCN/T	**1.43**	-
	LWACCW/T(2AC)	**1.43**	-
	LWACCW (2AC)	**1.76**	-
	LWFCWAC	**2.074**	-
	LWACCN	**1.86**	1.73
	LWCBAC	**1.68**	-
	LWSCZAC	**1.84**	-
	HUMSAFAR	**1.57**	-
	LSLRD	**1.81**	-
	LWSCN(G)	**2.27**	2.00
	LWS DEEN	**2.22**	-
	LWSCZ	**2.33**	2.43
	LWSCN	**2.23**	2.34
	BRAK VAN/T	**1.44**	-
	LWLRRM	**1.36**	1.24
	LWACCW	**-**	1.72
	HUMSAFAR, TURNKEY	**-**	1.54
	DEEN DAYALU	**-**	2.07
	LDSLR	**-**	1.28
	LWSZAC	**-**	1.81
	LWLBAC	**-**	1.65
ICF	LACCN	**0.47**	0.65
	LACCW	**0.64**	0.69
	LFCWAC	**0.64**	0.25
	LS	**0.05**	0.28
	LSCN	**0.04**	0.61
	LSLRD (with DA SET)	**0.10**	-
	LSLRD (w/o DA SET)	**0.01**	-
	LWFCZAC	**0.39**	-
	LSCZ	**-**	0.28
	LSCZ AC	**0.59**	0.69
	LWCB AC	**0.42**	1.28
	LWFAC	**0.64**	1.65
	LWLRRM	**0.01**	0.46
	TRAIN 18 DTC	**-**	0.52
	TRAIN 18 MC	**-**	0.25
	TRAIN 18 MC EC	**-**	0.54
	TRAIN 18 TC	**-**	0.53
	TRAIN 18 NDTC	**-**	0.54
	TRAIN 18 NDTC EC	**-**	0.53

Indian Railways' bulk requirement of wagons is met by wagon manufacturing units both in public and private sectors as well as PSUs under the administrative control of Ministry of Railways.

During the year 2020-21, 12,521 wagons were inducted in Indian Railways System. Out of these, 1,316 wagons (including 160 BLC wagons) were manufactured by Railway Workshops and the remaining 11,205 wagons (including 418 BLC wagons) were manufactured by wagon industry.

During the year 2021-22 (up to October, 2021) 6,723 wagons were inducted in Indian Railways System. Out of these, 596 wagons (including 280 BLC wagons) were manufactured by Railway Workshops and the remaining 6,127 wagons (including 237 BLC wagons) were manufactured by wagon industry.

Maintenance of Rolling Stock

The number of units of rolling stock given periodic overhaul (POH) in Railway Workshops during the year are given in the following table:

Type of Rolling Stock (BG + MG)	Periodic overhaul (nos.) undertaken during the year	
	2019-20	**2020-21**
Diesel Locos	423	**156**
Electric Locos	490	**424**
Coaches	30,533	**24,295**
Wagons	55,433	**50,177**

The percentage of ineffective stock to the total stock on line for different types of rolling stock was as follows.

Type of Rolling Stock	Percentage of ineffective stock to the total stock on line			
	B.G.		M.G.	
	2019-20	**2020-21**	2019-20	**2020-21**
Steam Locos	-	**-**	30.79	**14.63**
Diesel Locos	8.19	**9.77**	2.08	**37.1**
Electric Locos	6.99	**7.35**	-	**-**
EMU Coaches	12.20	**10.0**	-	**-**
Passenger Carriages	6.14	**6.17**	6.92	**10.36**
Other Coaching Vehicles	5.08	**5.22**	-	**-**
Wagons	3.07	**4.52**	79.10	**52.9**

Export Order

The total value of exports of rolling stock during 2020-21 was ₹935.50 crore. The cumulative value of export of rolling stock/spares up to the end of March, 2020 and March, 2021 was ₹3,896.12 crore and ₹4,831.62 crore, respectively.

The export during 2020-21 includes Passenger Coaches, Diesel Electric Locos and supply of spares to Sri Lanka and Mozambique.

Modernization of Workshops

Central Organization for Modernization of Workshops (COFMOW) was established under Ministry of Railways by Government of India for

modernizing Indian Railways Workshops. Since its establishment in 1979, COFMOW has been assisting in modernizing Indian Railways Production Units and maintenance of Workshops. So far, COFMOW has been involved in purchasing over 24,707 machines valued at ₹7,650 crore. COFMOW continues its endeavor to provide crucial technical support to the various manufacturing and maintenance units of Indian Railways. COFMOW is now taking up composite turnkey projects of setting up workshops/expansion of capacity in PUs/workshops as well as specialized technical projects allotted by Ministry of Railways.

COFMOW is in a position to offer its services to those needing modernization or up-gradation of their manufacturing / maintenance activities. COFMOW provides professional advice and single window service in planning and procurement of machine tools and allied equipment. COFMOW has recently embarked upon the project related to modernization of yards to maintain the condition of wheels, axle box bearings etc. of rolling stock.

Further, COFMOW provides professional advice and assists Zonal Railways & PUs in preparing and upgrading technical specifications for procurement of M&P, machine tools and allied equipments.

Salient features

- Bringing in state of the art technologies available worldwide in the field of M&P.
- Preparing, Upgrading and Compiling specifications of machines used in workshops, maintenance sheds and production units.
- Its continued efforts for indigenisation have led to a vibrant machine tool industry in India.
- Undertake turnkey works/ projects associated with M&P, New Manufacturing lines and composite modernization projects.
- Professional expertise in training staff, in the required area, by interaction with firms and studying the field requirements.
- Supports not only Mechanical units, but all the departments of Indian Railways for their M&P requirements.
- E-tendering all M&P items
- Executing Specialized technical projects involving up gradation of Railways' rolling stock & yards.
- Reverse Auction for economic benefits.
- Successfully implemented payment of vendor through Central Integrated Payment System (CIPS).

Key Milestones

SN	Year	Fund utilization (₹ in crore)	Contracts Awarded (₹ in crore)
1.	2018-19	448.61	1,096.38
2.	2019-20	587.58	802.29
3.	**2020-21**	**703.43**	**823.45**

Composite Turnkey Projects

Completed

- Composite Works contract for Augmentation of production capacity for manufacturing of advanced LHB coaches at ICF/Chennai (₹127 crore).
- Coil Spring manufacturing facility at ICF/Chennai (₹83.88 crore).
- New Wheel and Axle assembly line at RWF/Bengaluru (₹49.42 crore)
- Setting up of Wheel Shop at Sanpada (₹33.64 crore).
- Augmentation of Wheel Shop capacity at Matunga/CR (₹62.3 crore).
- Augmentation of BG coaches POH capacity from 50 coaches to 100, Bhavnagar (₹48.71crore).

Under Progress

- Creation of BG Coach Periodical Overhauling (POH) facilities at Moti bagh/Nagpur (₹81.89 crore).
- Modernisation & Augmentation of POH capacity upto 150 wagons per month, Dahod (₹92.92 crore.)
- Augmentation of Wagon POH capacity from 400 to 500 wagons per month, Raipur (₹113.20 crore).
- Setting up of Axle Forging Line, Rail Wheel Factory (RWF)/Bengaluru (₹303.52 crore).
- Supply installation and commissioning of M&Ps at WRS Badnera (₹40.51 crore).
- Setting up of wheel set maintenance facility at New Katni Jn in WCR(₹76.77 crore).
- Setting up of Facility for maintenance of Bio Digester at Matunga (₹6.29 crore).
- Creation of facility of Maintenance of LHB coaches at Matunga/CR (₹85.66 crore).
- 3rd Axle Machining Line for RWF/Bangaluru (₹214.38 crore).

Other Projects in Pipeline

- Procurement of 15 nos. Simulators (₹201.90 crore).
- Work of Raising speed of rolling stock upto 160 kmph (₹491 crore).

Special Projects in new technology areas in hand

- Procurement of Trolley Mounted Sewage Evacuation Machines (₹30 crore).
- Smart Yard facilities at DDU/Mugalsarai (₹36 crore).
- Procurement of Hot Axle Box Hot Wheel Detector.
- Online Monitoring of Rolling Stock (₹542.95 crore).
- Wheel Data Acquisition System (₹7.87 crore).

Materials Management

Materials Management Department deals with planning, organising, communicating, directing and controlling of all the activities concerned with the flow of materials into an organization and its further movement to various users. Indian Railways is one of the largest organizations in the country dealing with public procurement.

Expenditure on Purchases

Expenditure by Indian Railways on procurement of goods to meet the requirements of operation, maintenance and production of assets (excluding track related items and goods supplied as part of works) during 2020-21 was ₹50,092.45 crore. A broad classification of procurement of such goods is given below:-

(in crore of ₹)

	2019-20	**2020-21**
Stores for operation, repairs and maintenance	18,497.38	**11,542.48**
Stores for construction	2,210.58	**2,374.81**
Fuel	14,049.91	**7,284.86**
Stores for manufacture of Rolling Stock and purchase of Complete units	29,085.71	**28,890.30**
Total	63,843.58	**50,092.45**

Procurement of Iron and Steel Material

During the year 2020-21, Indian Railways requirement of iron and steel materials was met with indigenously. Procurement during 2020-21 was 64,700 MT valued at ₹340 crore as against 55,842 MT valued at ₹312 crore during 2019-20.

Stocking Depots

Warehouse management is an important aspect of materials management. Indian Railways has extensive warehouse network dedicated to provide the required material as close to the point of consumption as efficiently possible. To meet this requirement Zonal Railways and Production Units have 306 stocking depots spread all over the Railway Network. These depots stock over 2.42 lakh items consisting of raw materials, components, spares, consumables etc.

Disposal of unserviceable Items

Efficient Materials Management also involves timely and efficient disposal of scarp generated during maintenance and production activities. Safe disposal of industrial waste and hazardous scrap is a legal obligation which is meticulously ensured by Indian Railways. Disposal of obsolete items is essential to free the locked up capital in such assets. Disposal of scrap is an important source of revenue for Railways. Total revenue generated through disposal of scrap, during 2020-21 was ₹4,575.29 crore as against ₹4,332.69 crore during 2019-20.

Digitisation

Indian Railway has accorded great importance to transparency and efficiency in its working and enhancing ease of doing business which is directly in line with 'Digital India' initiative of Government of India. Digital journey of Materials Management on Indian Railways that started with roll out of e-procurement system in FY: 2011-12 has now extended to encompass the complete Materials Management cycle which includes demand generation, tendering, purchase decision, contracting, inspection, materials receipt and payment. All types of tenders for Goods, Services, Works, Earning/Leasing and sale of scrap are issued on a single web-portal i.e. **www.ireps.gov.in.**

User Depot Module (UDM) of IMMS has been launched by Indian Railways in November, 2020. With the implementation of UDM, IR envisages to achieve digitization of entire supply chain up to last mile i.e. at material user end by computerizing the various material management activities at their end. This will further improve operational efficiency with better availability of materials and reduced inventory cost resulting into savings.

Agency of Procurement

Zonal Railways and Production Units mostly procure the materials required by them in a decentralised system, but for purchase of a few items which are centralised for procurement at Railway Board's level. Common use Goods and Services available on GeM are reserved for procurement through GeM portal. Out of ₹50,092.45 crore worth of stores procured in 2020-21, 73% was done by Zonal Railways and Production Units, 27% by Railway Board .

Stores worth ₹4,421.75 crore were bought from Small Scale Sector and Khadi and Village Industries in 2020-21.

Public Sector Undertakings contributed 17% and other industries contributed 83% towards supplies.

Indigenous Vendor Development

Indian Railways has fully implemented Public Procurement (Preference to Make in India) Order. The value of Indigenous stores at ₹49,639.26 crore during 2020-21 constituted almost 99% of the total purchases by Indian Railways. Indian Railway has to depend on imports for high technology components for its locomotives, coaches, signal & telecom equipments etc. which are not available in adequate quantity with required quality within the country.

Inventories

Maintaining inventories at an optimum level is the key to successful materials management. Turn Over Ratio for the year 2020-21 was 13% (without fuel) and 12% (with fuel), as against 15% (without fuel) and 10% (with fuel) during 2019-20.



Doubling work of Aunrihar Ghazipur City rail section, NER

Research and Development

RDSO under Ministry of Railways is the sole R&D organisation of Indian Railways and functions as the technical advisor to Railway Board, Zonal Railways and Production Units. RDSO's major functions involve:

- Development, adoption, absorption of new technology for use on Indian Railways.
- Development of new and improved designs of equipment and systems.
- Setting standards for adoption on Indian Railways.
- Development of specifications for materials and products needed for Indian Railways.
- Technical investigation, statutory clearances, testing and providing consultancy services.
- Inspection of critical and safety items of Rolling Stock (including Metro Stock), Locomotives, Signalling & Telecommunication equipment and Track components.
- Vendor development for safety and critical items controlled by RDSO.

RDSO also offers international consultancy services in matters pertaining to design, testing and inspection of railway equipment as well as survey for construction of new lines. RDSO attracts worldwide attention in the area of Research & Development in Railway equipment and systems.

Some of the important activities during the year are given as:-

Technology Mission for Indian Railways (TMIR): TMIR was announced in Budget Speech of 2015-16 with consortium of Ministry of Railways, Department of Education (erstwhile MHRD), Department of Science & Technology & Industry in funding sharing model. TMIR functions through the Mission implementation and co-ordination committee (MICC) which consists of members from IITs, Railways, departments & Industry. Total five projects related to areas for industry 4.0, Geo formation validation model, measurement of NVH etc. have been approved for execution under TMIR.



Underground Cales Being Changed at Maidan Metro Station During Locdown Kolkata Metro

Recognition of RDSO as 'SDO' under "One Nation One Standard" Scheme of BIS: RDSO (Research Design & Standards Organization), Research wing of Indian Railways has become the FIRST Institution to be declared SDO under "One Nation One Standard" mission on BIS (Bureau of Indian Standards) with following scope "Standards developing organization for products, processes and services for railway transportation sector in India". The recognition granted to RDSO shall be valid for a period of three years from 31 May 2021 to 30 May 2024.

Quality Audit of Railway Units: A system of Quality Audit at Railway Units is followed to have interaction with Railway units & to

ensure conformance to the requirement of laid down work instructions & maintenance practices. During the year areas like corrosion repair the coaches, CTRB overhauling, interior furnishing coaches, ICF bogie overhauling have been considered for Quality Audit. The observation of the audit is briefed to unit head instantly. The audit reports are uploaded on railnet (10.100.2.19) for perusal by all Railway Units. Audit reports are highly useful to plan & take corrective action on the areas identified by the audit team, which has a bearing on equipment reliability and train safety.



Quick Watering System at Prayagraj Chheoki NCR

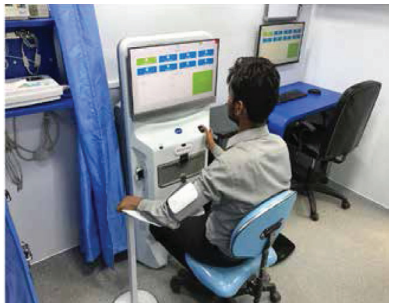
Quality Audits of Vendor Manufacturing Facility: A system of Quality Audit at vendors' premises has also been streamlined. Emphasis is now being given on process audit/inspection in addition to product inspection. Quality audits are found highly effective to review the compliance of requirement as per approved QAP.

Unified Vendor Approval Module (UVAM): For all the Vendor Approving Units over Indian Railways have been launched by RDSO on the software platform by CRIS on 4th May 2021. It is a digitization initiative of Indian Railways through which all the activities related to approval of vendors has been digitized. Indian Railways procure various items related to safety of passengers and trains from approved vendors. Various units of Indian Railways like RDSO (Research Design & Standards Organization, Lucknow), ICF (Integral Coach Factory, Perambur), MCF (Modern Coach Factory, Rae Bareilly), RCF (Rail Coach Factory, Kapurthala), BLW (Benaras Locomotive Works, Varanasi), CLW (Chittaranjan Locomotive Works, Chittaranjan) and CORE (Central Organization for Railway Electrification, Prayagraj) are engaged in approval of vendors for various items. Requests for approval can be submitted by the vendors online through their IREPS account, and the status of application can also be tracked.

Technological Input for Safety and Reliability

Development of Specification for Self-Propelled Tunnel Rescue Train: Indian Railways (IR) network consist of many long tunnels and many more long tunnels are being constructed on new strategic railway track, mainly in northern and north-eastern mountain regions. Long tunnels pose many challenges in terms of rescue operations in case of accident / fire. IR has therefore decided to procure Self-Propelled Tunnel Rescue Train (TRT) with speed potential of 100 kmph with a view to putting faster effective medical attention and restoration in case of fire/accident inside the tunnel.

Revision of Specification of Battery Operated LED Based Hand Signal Lamp: LED based Battery operated Hand Signal Lamp has been revised, with use of light weight 'AÁ' batteries in place of R-20/LR-20 batteries as prescribed earlier. Use of 'AA' batteries has reduced size as well as weight of Hand Signal Lamp and it has become quite handy to use.


Yolo Health ATM At 06 stations Bhopal 2 Itarsi 1 Vidisha 1 Jabalpur 1 and Kota 1 WCR

Operational Efficiency

Design Review and Development of 12000 HP (WAG12B) Locomotives: As per agreement signed between Indian Railways and M/s ALSTOM Manufacturing India Ltd. (joint venture named as Madhepura Electric Locomotive Pvt Ltd.- MELPL), M/s MELPL manufactured prototype

WAG12B locomotives of 9000KW (12000 HP) and offered to IR for oscillation trials and rating & performance trials.

Introduction of Advance Technology High Horse Power Diesel Locomotive (WDG6G): An agreement has been signed between Indian Railways and M/s GE Diesel Locomotive Pvt. Ltd for setting up a diesel locomotive factory at Marhowra, Saran District Bihar (India) and Procurement and Maintenance of 300 nos. of 6000 HP and 700 nos. 4500 HP Main line Diesel Electric Locomotives. These locos will be maintained in start of art maintenance sheds at Roza (MB division of NR) and Gandhidam (ADI division of WR).

RDSO played an active role in design and drawing development, prototype clearance and conducted service worthiness trials of these locomotives.

Equipped with latest design and technological features, WDG6G is the most powerful diesel locomotive introduced over Indian Railways, so far. It will help in increasing the speed of freight trains to a great extent. Key features of this Loco are as under:

- HVAC equipped Cab.
- GEVO-16 Cyl. Engine with EUI Injection for improved fuel efficiency.
- UIC 1 Emissions compliant locomotive diesel engine.
- Alternator start Engine mounted on isolators for reduced vibration.
- Enhanced operator and cab amenities with four 15" display screens, hot plate, tool Box, Heated wind shield, Urinal.
- Separate air to air cooling circuit (split cooling) for optimized engine cooling.
- LED headlights and Marker lights.

Upgradation of WAG-9HC to 9000 HP WAG-9HH: Under 'Make in India' initiatives, the power of existing WAG-9HC loco has been upgraded from 6000 HP to 9000 HP. Power enhancement of upgraded WAG-9HC loco (designated as WAG-9HH) has increase the balancing speed of WAG-9HC locomotive from 35 kmph to 50 kmph. This will reduce the journey time and will improve line capacity. Prototype unit of WAG-9HH locomotive has been manufactured by CLW, Chittaranjan by upgrading the continuous rated power of the existing WAG-9HC (With Conventional Brake rigging) locomotive from 6000 HP to 9000 HP through upgradation kit (by upgrading Transformer, Traction Converter, Traction Motor etc. supplied by M/s BHEL, M/s Medha and M/s Siemens).

Development of 4500 HP WDAP5 Dual Mode Locomotive: RDSO had issued a specification no. MP.0.0800.108, Rev-02 in March 2016 for development of a dual mode loco. Benaras Locomotive Works has manufactured a prototype dual mode locomotive, which has been assigned transportation code WDAP5 by Railway Board.

This loco developed by IR on WDP4D platform can work both in Electric Mode (with rail power of 4500hp) taking power from OHE supply and in Diesel Mode as well (with gross horse power of 4500 hp). It's a Dual

CAB loco fitted with HVAC. Benefits of this loco shall be:

- Availability of locomotives with flexibility for seamless operation on mixed routes.
- Reduction in detention time of locomotive on the traction change points to less than 15 minutes.
- Reduction of man days for shunting of locomotives at traction change over points.

Guide on capacity of freight locomotives for hauling 25t axle load wagons on IR BG Track: Load charts of diesel electric locomotives have been prepared for hauling 25 t axle load wagon, considering the maximum trailing load of 59 BOXN as 5900 t. Also, new load charts have also been added for new variants of locos viz. WDG4G (4500 HP) & WDG6G (6000 HP), inducted on IR in recent past.

Development of 2x25KV AT traction distribution system: To cater the high power requirement of fast accelerations of future high speed trains, Traction Installation directorate has developed complete overhead equipment and Power Supply installation schemes of 2x25KV AT traction distribution system over Delhi-Howrah and Delhi-Mumbai routes. The complete scheme and all specifications of OHE & PSI equipment has been finalized and the relevant drawings and vendor development is under process. This scheme utilized the minimal changes in OHE & PSI based on the experienced gain of high speed routes in Indian Railways.

E- Office: 100% Implementation of e-Office projects for RDSO has been completed. The VPN facility has been provided to the officials residing outside the RDSO campus and working in field units to facilitate work from home in view of Covid19 Pandemic. A new dedicated WebEx meeting facility has been created for RDSO through Railtel to facilitate smooth meetings in RDSO. This platform is extensively used for various meetings in RDSO during the period of Covid19 Pandemic. On average around 40 meetings are being regularly held in RDSO using the newly developed WebEx Platform.

Development of Short Neutral Section Indigenously: Short Neutral Section Assembly (phase Break) is used to separate two phase with providing mechanical continuity to glide pantograph. Till now there is only two foreign approved firm for SNS. The requirements of short Neutral Section Assembly in Indian railways are almost 300 Nos of ₹26 crore. In 2016, RDSO have revised Specifications and STR to indigenize this item. One indigenous firm has been approved for field trial after Proto-type test carried out successfully during July-2020 to conduct field trial of SNS.

Improvement in Passenger Services

Development of IP Based Integrated Passenger Information System: As a policy matter, most of the Equipment in Indian Railways are being shifted to IP platforms as a technological upgrade. In line, "IP Based Integrated Passenger Information System" has been developed by Telecom Directorate/RDSO & Specification No, RDSO/SPN/TC/108/2019 ver.0 has been issued. The system consists of networked Indoor & Outdoor Video

Display Boards, Train Indication Displays, Coach Guidance Displays and PC Based Announcement System. The system is also capable of displaying commercial advertisements and video information in a multi-colour display board. The important fields like "Train number, Train name, Arrival and Departure status, Expected Time of Arrival/Departure, Platform Number" can be displayed in different colours to easily read and differentiate by the passengers. Trains having certain special status can be displayed in different colours. Status of trains like cancelled, diverted, platform changed etc, can also be displayed in special colours to quickly capture the attention of the passengers.

Indigenous Development

Standardization of Welding Parameters of Flash Butt Welding Machine: 10nos. of mobile flash butt welding machines have been standardized for welding parameters for flash butt welding of rails in Indian Railways/Metro rails.

Developments of Higher Strength Rail: Indian railways operate in a mixed traffic regime of passenger and freight operations. Speed of passenger operations at 130/160 kmph and freight operation at 100 kmph with axle load of 25t is planned. A highly reliable infrastructure is required to support safe operation of the envisaged traffic. Rail, being a critical component of track infrastructure, needs an upgrade, accordingly. Following are the related developments in rail.

- **R260 Grade Rail:** RDSO has developed specification for rail grade R260.This high carbon steel rail will have cleaner steel as compared to the presently used 880 grade (90 UTS) rail. It will have better mechanical properties, including higher yield strength. This is likely to result in reduced number of rail failures under the operating conditions prevailing on the Indian Railways.
- **1175HT Grade Rail:** RDSO has developed specification for rail grade 1175 HT rail. It is a heat treated grade having better mechanical properties, compared to the high carbon steel rail (880 grade) presently being used on the Indian Railways. It has a minimum Ultimate Tensile Strength (UTS) of 1175MPa and hardness in the range of 340 to 390BHN. Yield Strength and Fracture Toughness values are also higher. These properties of rail would cater to the requirements of planned traffic on Indian Railways, which will have a mixed traffic of Heavy Axle load (25 t) freight trains at 100 kmph along with high speed passenger trains at 160 kmph .

Infrastructures

Track Laboratory: Track laboratory is having well qualified research and technical staff with static and dynamic testing facilities of track components. Track components can be tested on hard as well as ballasted deck under simulated dynamic loading condition as occurring in the field by actual rolling wheel axle load. For upgrading the Track Lab, a work of Track Lab Modernization at a cost of ₹13.67 crore has also been vetted by finance, Indent placed for procurement.

Construction of Dedicated Test Track : Work has been sanctioned at an estimated cost of ₹353.48 crores on "Out of Turn" basis in Works Programme 2018-19. Phase–II of dedicated test track has also been sanctioned in 2020-21 at a cost of ₹466.42 crore. Work is being executed by Construction Organisation of NWR under technical advice of RDSO. Tenders for earth work & bridge of Dedicated Test Track (Phase-I) has been finalized by NWR and work is in progress. ₹23.86 lakh cum earthwork, 5000 Cum blanking and 12 minor bridges have been completed. Work on 12 no. minor bridges and 2 no. major bridges are in progress. Construction of Twisted track including track linking for 3.3 TKM for carrying out stability test as per EN 14363 and related NI of Gudha station has been completed.

Pilot Project for Solar Power Evacuation and Feeding to LB bus at Bina TSS: The scheme for evacuation of solar power of 1.7 MW at 25 KV sent to PCEE/WCR on 20.01.2020, is shown below. Proper protections from both the sides have been incorporated for the transformer and for the feeder between solar substations to TSS. It is important to isolate solar feeder in case of the faults /breakdown and when power is switched off for maintenance through Circuit breakers to avoid unwanted feed and safety.

Development of Traction Substations (TSS) and Switching Station Layout in Reduced Area for 160KMPH in Delhi-Howrah and Delhi-Mumbai route: Indian Railways has decided to upgrade the existing NDLS-HWH and DLI-KOTA-MUMBAI routes for 160kmph routes. To cater the required power requirement at these routes, 2X25 KV system has been adopted. For this, new Traction Sub Stations and switching stations are to be commissioned along the tracks of the Indian Railways and sufficient land is required for this. In the present scenario, land acquisition is a major problem for the new works. Also, it was decided to construct the Traction substation and switching stations in a minimum width as the space is not available in the width along the Track.

Test & Trials

Track Recording: To ensure safety of traffic periodic track monitoring of Indian Railway track is done by TMM Directorate.

- In this financial year track recording of 1,29,573 KM have been completed up to December' 2020 which is the highest ever in the history of IR.
- New Track Tolerance Limits have been developed after analysis of huge amount of track recording data and introduced in Indian Railways to access the ride quality of track and to plan necessary maintenance interventions during the service life.
- In order to achieve complete Track Monitoring modernization and to meet out the total liability of track recording as per new system of track maintenance and for need based replacement of track components & maintenance of track, 07 integrated track monitoring system, 16 track inspection & monitoring system and 16 turnout measurement systems are being acquired by TMM Directorate. For continuous

track inspection of important routes 40 unattended axle box level acceleration measurement systems are being procured.

Inspection & Quality Audit

Metallurgical Inspection: Carried out Metallurgical Inspection of 36098 MT of bridge girder, 3803 Nos. of track items, 264 LHB wheels (Carriage item) and 2002 nos. of 6 mm thick nylon cord reinforced rubber pads.

Name Plate for Galvanised Steel Structures: Drawing of name plate has been prepared for traceability of steel structures with engraving/ punching mentioning name of manufacturer's/contractors/group-section and standard weight and serial number with code.

Delegation of Fabrication Inspection Work: Inspection of Railway Workshop, Rail cum Road, ROB (except Bow String Girder and special composite special plate girder) has been delegated by RDSO. Inspection of POT-PTFE type bearings also delegated.

Revise STR and Specification: To revise STR and Specification applicable for vendor registration. STR of HSFG bolting assemblies has been revised. STR of elastomeric bearing, Pot-PTFE bearing, expansion joint and fabrication of steel bridge girder (Part B) has been modified and under finalization as per ISO procedure of revision of specification.

Consultancy

Development of AC-AC 3000HP Cape Gauge Locomotive for Mozambique Railways: RDSO in association with BLW is developing a 3,000HP Cape Gauge Locomotive for Export to Mozambique Railways. In this regard, Development and prototype inspection of bogie frames, Traction Motor, Traction alternator and Brake system of CG locomotive carried out by RDSO and completed.

Guidelines for providing Insulators in snow bound, stone pelting and high altitude (1600m) areas of J&K: A detailed study has been carried out on usage of insulators for 25 KV Traction Lines in snow bound, stone pelting and high altitude (1600m) areas of J&K. Based on the International Standards (IEC), Technical papers and design calculations, a guideline for providing insulator in snow bound, stone pelting and high altitude (1,600m) areas has been issued.

Other Miscellaneous Activities

Surveillance System: IP Based Video Surveillance System (CCTV) has been installed in RDSO Complex on important points including Office Campus, Residential Area & RDSO Hospital.

Development of Human Resources: NDT Training Centre is imparting training to supervisors from Engineering & Mechanical Dept. of Zonal Railways and PUs in the field of ultrasonic testing of Railway track & Rolling Stock components. During the year 2020, NDT Training Centre trained 136 USFD operators for Rail & Rail Welding, 201 Ultrasonic operators for Axle & Wheels testing from various Indian Railway Workshops & PUs. Besides this, 302 ultrasonic operators of various outsourcing agencies were also trained and certified on payment basis. Online Training was also

conducted as per guidelines issued by Railway Board due to COVID-19 pandemic.

Tele-Counselling during Pandemic: Due to Corona virus pandemic, when national lockdown was imposed, the Psycho-technical directorate in collaboration with eminent psychologists took an initiative to offer help to railway personnel and their family members through tele-counselling for the entire lock down period enabling them restore issues pertaining to anxiety, depression and adjustment problems and over all well-being while at the same time maintaining absolute confidentiality. Many Officers and staff and their family members availed the facility..



Special fever clinics were opened at the Central Hospital Jaipur and all divisional hospitals, NFR



High capacity solar plant at Jaipur station NWR

Managing the Environment

Railways are one of the least polluting modes of transport. Efforts are steadily being made to make Railway operation environment-friendly. Some of the important steps taken in this direction are enumerated in the succeeding paras.

Green Energy Initiatives on IR

Solar Energy

Being a significant consumer of energy, Indian Railways has committed itself to identify cost-effective options to achieve and realize an energy system with least environmental impacts, thereby reducing carbon emission by adopting renewable energy on priority.

As part of this, 120 MW of solar plants (113.3 MW on Roof tops + 6.7 MW on land) have already been commissioned upto Mar'21 over IR. Total 1,591 Railway Stations and Service buildings have been provided with Solar rooftop plants upto Mar'2021. In addition, IR has plans to utilize its unused vacant Land parcels for setting up of Land Based Solar Plants for its traction power requirement as "Green mode of transportation". Following steps has been taken:



Central Railway Energy Management Cell

- Two pilot projects had already been successfully commissioned:
  - 2 MWp Solar Plant at Diwana near Panipat in Northern Railway. Successfully commissioned in Sept., 2020.
  - 1.7 MWp Solar Plant at Bina through BHEL, feeding solar power directly to 25 kV AC traction system. Successfully commissioned in July, 2020.
- To further, proliferate these pilot projects on larger scale, initially solar power projects are being planned in 3 phases as under:-
  - **Phase- I:** 740MW capacity in railway plots for Open access States under developer model.
  - **Phase- II:** 210 MW capacity in railway plots for non open access Stages under ownership model (captive use).
  - **Phase.- III:** 400MW capacity in railway plots along the tracks under developer model for open access States.



Tree plantation programme on 02 Oct 2020 RWF

Wind Energy

- Indian Railways has set up 103.4 MW wind-based power plants.
- Wind based power plant of 10.5 MW (for non-traction) and 10.5 MW (for Traction) capacity in Tamil Nadu, 26 MW (for Traction) capacity in Rajasthan, 6 MW (for non-traction) and 50.4 MW (for traction) capacity in Maharashtra has been installed.

Energy Conservation

- Implementation of various energy conservation efforts is yielding

fruitful results as the energy consumption (Non Traction) during last 5 years remained almost constant despite increase in connected load during the last 4 years.

- ‘Energy Conservation Week’ is being celebrated every year during energy conservation day on 14th December to spread the awareness of energy efficiency and conservations initiatives amongst the Railway employees.
- The continuous efforts of Ministry of Railways and Zonal Railways to embrace various energy efficient technologies and energy conversation measures had resulted in bagging 14 National Energy Conservation Awards (NECA) this year.
- All Railway stations (other than those in gauge conversion) have been fitted with 100% LED luminaries. By this, Indian Railway has become a major Railway across the world to have 100% LED lighting at all its stations.
- All railway installations including offices, maintenance depots etc. are also being provided with 100% LED luminaries and all Residential quarters have also been provided with 100% LED lights. This will save 240 Million Units of electricity per annum amounting to ₹180 crores reduction in annual electricity bill of IR.



Sewage Treatment Plant installed in Jhansi NCR

Green Environment

Indian Railways has a fleet of about 5,321 (including 296 locomotives manufactured a Marhowra plant under PPP) mainline BG diesel locos based in 43 Sheds. Following initiatives have taken by Mechanical Engineering (Traction) Directorate for improving Green Environment in diesel locomotives and train operation.

- **Auxiliary Power Unit (APU) –** APU is a self-contained unit with a small diesel engine coupled with compressor and alternator for battery charging. It has its own set of controls, accessories and is integrated to the existing conrol system of locomotive. In APU System, Main Engine shuts down and small 25 HP Engine starts and charges batteries and air brake pipes, when locomotive idles for more than 10 minutes. The diesel engine of APU consumes only 3 liters of diesel per hour in comparison to 25 liters by the main engine of the locomotive. Expected savings per loco fitted with APU is ₹20 lakh/year on account of savings in fuel oil only. So far, APUs units have been fitted in 1,141 Diesel Locomotives. Further all the new diesel locomotives being manufactured at Marhowra plant have this unit.
- **Multi-Genset locomotive –** Multi-genset has been developed by RDSO and DMW in collaboration with NREC of USA. In a multi- genset locomotive, single large engine is replaced by three smaller engines. An on-board computer monitors the power requirement and shuts down/starts engines as per load demands, which makes it more fuel-efficient. Three such



3MW Solar power plant on Roof Top of Howrah Railway Station ER

locomotives have been turned out by DMW/PTA. Trials at Itarsi Diesel shed have shown saving up to 17% fuel in shunting and passenger operations. Besides fuel saving, there is a reduction of 85%-90% in NOx and particulate emissions compared to uncontrolled locomotive emissions.

- **Export of Diesel Locomotives –** In view of the policy for complete electrification of Broad gauge routes, Indian Railway has stopped manufacturing new diesel locomotives for its own use at DLW and DLMW plants. However manufacture for non-railway customers (NRC) continues. Indian Railways has exported 02 nos. Diesel locomotives to Mozambique having 12 cylinders 3000 HP engines

Afforestation

During 2020-21, Railway did mass plantation of 93 lakh trees. Railways have already finalized a model agreement with Ministry of Environment & Forests to be entered by Zonal Railways with State forest Departments. Moreover, now instructions have been issued to all Zonal Railways to make provision of 1% in all estimates to environment related matter. This will help in meeting the cost of plantation. As such, Railways are making all efforts to plant more and more trees.

Besides, railway land is also licensed to railway employees belonging to Group 'C' and 'D' category under 'Grow More Food' scheme for growing vegetables, crops etc.



Veith Bridge J&K, NR (IRCON)

Personnel

Industrial Relations

Industrial Relations on Indian Railways remained cordial throughout 2020-21. Recognised Federation/Unions have participated in all important meeting thereby resulting in effective and meaningful involvement of Railway Servants in achieving the corporate objectives of Indian Railways.

Number of personnel

Group-wise and Department-wise break-up of Railway employees (excluding MTP/Railways) as on 31-03-2021 vis-a-vis 31-03-2020 are as follows:

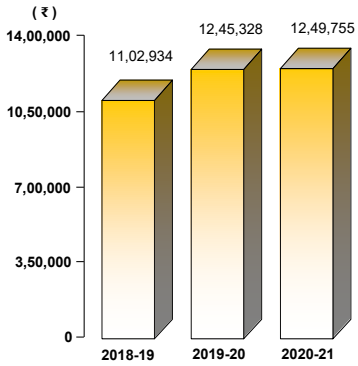
Group-wise break-up	As on 31-3-2020	**As on 31-3-2021**
Group A	11,300*	**11,247**
Group B	7,196*	**7,360**
Group C:		
(i) Workshop &Artisan	1,56,041*	**1,26,744**
(ii) Running	1,49,420	**1,39,974**
(iii) Others	9,30,429*	**9,67,022**
Group D:		
(i) Workshop & Artisan	$	**$**
(ii) Others	$	**$**
Total	12,54,386*	**12,52,347**

*revised
$Erstwhile Group D is merged in Group C

Department-wise break-up	As on 31-3-2020	**As on 31-3-2021**
Administration	42,259*	**33,221**
Accounts	45,250*	**31,239**
Engineering	2,84,212*	**2,90,776**
Signal and Telecom	53,772*	**63,361**
Transportation	1,65,765	**1,53,937**
Commercial	68,012*	**73,012**
Mechanical Engineering	2,82,478*	**2,96,927**
Stores	24,611	**17,586**
Electrical	1,58,398*	**1,81,659**
Medical	31,328	**33,861**
R.P.F.	67,074	**69,314**
Construction	14,310	**-**
Railway Board/other railway offices, including RPSF	16,917*	**17,454**
Total	12,54,386*	**12,52,347**

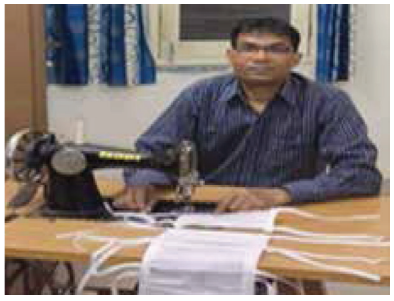
*revised

AVERAGE ANNUAL WAGE PER EMPLOYEE



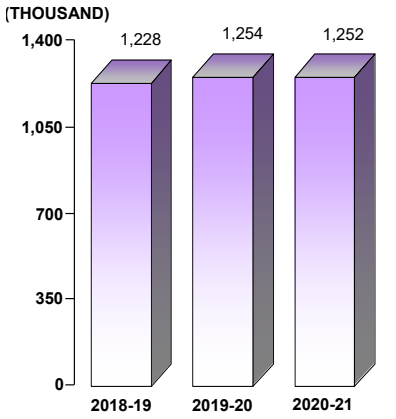


Manufactring of PPE Kit by SER



Manufacturing of face Masks BLW

NUMBER OF EMPLOYEES



Wage Bill

Wage bill including pension etc. at ₹1,56,730.29 crore increased by ₹487.24 crore-registering a rise of 0.31% over the previous year. The average wage per employee was up by 0.36% from ₹12,45,328 per annum to ₹12,49,755 per annum. The ratio of staff cost on open line (excluding payment towards pension and gratuity) to ordinary working expenses (excluding appropriation to DRF and Pension Fund) was 68%. The total number of personnel as on 31st March and the average annual wage per employee for the last two years are as follows:

	2019-20	**2020-21**
Total number of personnel (in thousands)	1,254	**1,252**
Average annual wage per employee (in ₹)	12,45,328*	**12,49,755**

*revised

Representation of Scheduled Castes (SCs) and Scheduled Tribes (STs)

Representation of scheduled caste and scheduled tribe employees on IR (excluding MTP Railways) for the year 2020-21 as compared to the previous year is given below:

	Number of SC Employees		**Number of ST Employees**	
	As on 31-3-2020	**As on 31-3-2021**	As on 31-3-2020	**As on 31-3-2021**
Group A	1,413(12.50)	**1,407(12.51)**	736(6.51)	**785(6.98)**
Group B	1,236(17.18)	**1,168(15.87)**	558(7.75)	**509(6.92)**
Group C #	2,03,931(16.50)	**2,02,907(16.45)**	96,621(7.82)	**94,376(7.65)**
Grand Total	2,06,580(16.47)	**2,05,482(16.41)**	97,915(7.81)	**95,670(7.64)**

Including erstwhile Group 'D'
Note: Figures mentioned in brackets indicate the percentage of SCs/STs to total number of employees.



Covid Vaccination centre at Northern Railway Central Hospital NR

A fully dedicated reservation cell exists each at the level of Ministry/ Railway/Zones/ Divisions/Workshops/Production Units, for dealing with the reservation matters and to look after the grievances of SC/ST employees relating to their service matters.

Railway Recruitment Boards:

During 2020-21, panels of 2,123 candidates have been supplied to the Indenting Railway(s)/Production Unit(s) by 21 RRBs across India

Productivity Linked Bonus

For the financial year 2020-21, all non-gazetted employees of the Indian Railways (excluding RPF/RPSF Personnel) have been sanctioned Productivity Linked Bonus (PLB) for 78 days. This benefited about 11,56,131 Railway employees. Further, Group 'C' RPF/RPSF Personnel have been sanctioned ad-hoc-bonus equivalent to 30 (thirty) days emoluments for the year 2020-21. PLB and ad-hoc bonus both have been paid on an enhanced calculation ceiling of ₹7000/-p.m. Financial implication for PLB and ad-hoc bonus was approximately ₹1,984.73 crore and ₹53.72 crore respectively.



PSA plant in Bhusaval Railway Hospital CR

Human Resource Development (HRD) and Manpower Planning:

Training

There are different sets of Training Centres for Gazetted and Non-Gazetted Staff. These Training Centres located all over Indian Railways imparts various type of trainings i.e Probationary/Initial training (i.e before taking up a working post), Promotional training (i.e on promotion), Refresher training (i.e mid-career/on introduction new developments in technology) and Specialized training (for Specialized courses). During 2020-21, around 3,80,000 non-gazetted employees have been provided different types of training i. e. initial, promotional, refresher, specialized.



RTPCR machine CR

To meet the challenges posed by changes/advancement in technology, quality of services and safety of operations, significant initiatives have been taken to train the human resources. These include:-

a) All safety category railway employees are given structured training at various stages of their career. Detailed training modules as per prescribed periodicity are available for each category at initial/ promotional stages along with refresher courses and specialized training courses laying emphasis on more practical aspects which helps them in assimilating technology transferred and skill upgradation. These modules are updated keeping in view the technological changes in working practice. Safety Category staff like loco staff also undergo simulation training. Online training materials have also being made available to the trainees.

b) All frontline staff involved in train operations are imparted a special one day capsule training on Threat Perception & Emergency Response. Training module has also been formulated for running staff to include training Course on Fire Fighting & use of fire extinguishers, in initial and periodic refresher courses for Assistant Loco Pilots, AC Attendants and other running staff. Safety staff are given exclusive training on First Aid and on Disaster Management with the emphasis on Relief, Rescue and Rehabilitation (three 'R's). Yoga and Meditation lessons have been introduced in training centres with an aim to help railway men in coping with the stresses involved with their jobs. Some of the other Specialized Courses run by the Training Centres include Management Development Programme for Supervisors, Safety Oriented Course for Permanent Way supervisors, Air brake Operations Training for Guards and Drivers, Inspection and Rehabilitation of Bridges for Junior Engineers/Senior Section Engineers (Permanent Way)/ Bridge/Works.

c) Apart from in-house training, railway employees are also dent for foreign trainings under transfer of technology and are also provided inputs through leading training institutes within India.



Covid Ward DMW

Apprenticeship Training

Apprenticeship training is one of the most effective ways to develop skilled manpower for industry by using training facilities available in the


The LVPH Coach RCF

establishments without putting any extra burden on exchequer to set up training infrastructure. Persons after undergoing apprenticeship training can easily adapt to industrial environment at the time of regular employment. The other advantages of apprenticeship training are as follows:

- Improved quality of training, experiential learning and enhanced employability.
- Providing apprentices a real chance to put skills into practice and helps them to gain confidence in working environment.

Indian Railways have also been awarded "CERTIFICATE OF APPRECIATION" for outstanding contribution towards engagement of apprentices.

Training Modules

In view of technological upgradation and changed job requirements, there was a need to review the existing training modules of all the departments. Therefore, the existing training modules of all the departments viz. Traffic, Commercial, Electrical, Civil, Mechanical, Signal & Tele and Finance were reviewed, updated & uploaded on Railway's website. These Training modules have been converted into online mode and the same have been uploaded.

Online Training

The training material for different categories of staff has also been converted in online mode in the form of powerpoint presentations, pdf documents and videos of lectures etc. These training materials can now be accessed by Railway employees even from his remotest place of posting. Most of the trainings are now being conducted in online/blended mode.

Indian Railway Medical Service

Indian Railway Medical Service was primarily constituted to look after the health of Railway employees. It also provides medical facilities to the family members and dependents of the employee, retired employee & their family members and dependents as per pass rules.

With a sanctioned strength of 2,559 Medical Officers and 37,087 paramedical staff it is the largest industrial health services in the world. It is running 24x7 round the year, with 129 hospitals & 586 health units having a total of 13,719 indoor beds spread throughout the length & breadth of country. It attends to roughly one crore beneficiaries.

Besides curative services, Indian Railway Medical Service provides:- Preventive, Promotive, Occupational & Industrial health, Public health services also. It also plays a significant role in monitoring the quality of water & food within Railway premises.

Ayushman Bharat Pradhan Mantri-Jan Arogya Yojana has been implemented in the Railway Hospitals. As on date, 91 hospitals have been opened for AB PM-JAY beneficiaries.

Ten of our zonal hospitals are functioning as institutions for training for the very prestigious DNB program in most of the specialties and some

super specialties.

Other activities carried out by IRHS are;- providing first aid to travelling passengers, attending Railway accidents, colony sanitation, implementation of Food Safety Standards Act (FSSA), various National Health Programmes and providing post-graduation training & study program. Our health services inspire great confidence amongst the beneficiaries.

Performance Statistics (2020-21)

Total OPD Cases attended	1,35,65,600
Total Indoor cases admitted	2,83,115
Total no. of surgeries performed	77,167
Percentage of man days lost due to sickness	2.11
No. of New Candidates examined for fitness	15,631
No. of employee examined under Periodical medical Examination (PME)	1,23,212
No. of food samples collected/ found faulty	985/79
Water sample for residual chlorine tested/ fit	11,26,508/10,28,864
Water sample for bacteriological tested/fit	52,629/50,303
No. of sick passengers attended by Railway Doctors	16,304
No. of Children immunized	13,781
No. of multipurpose health drives conducted	6,494
Total no. of persons examined in the multipurpose health drives above	2,61,527

A special reference goes for Indian Railway Health Service fighting the current COVID-19 pandemic.

Sl No	Item	Pre Covid	During Covid Pandemic (first and second wave)
1	No of Fever Clinic	Zero	216
2	Covid Coach train	Zero	5,601 coaches converted having capacity for 90,000 beds
2	Covid beds	Zero	Initially 2,539 then later increased to 6,972.
4	ICU beds	273	Increased to 576
5	Invasive Ventilators	62	296 and 449 non invasive ventilators
6	Oxygen Plants	2	92 sanctioned, 18 already commissioned

- Railway hospitals are working as a team with Central and State Governments for providing COVID treatment facility. Railway workshops were used to make Personal Protective Equipment (PPE), hand sanitizer, masks etc as they were initially not available in market.
- 86 Railway hospitals having 6972 beds are offering medical treatment

to COVID patients and few Railway hospitals have been taken by State authority as Designated COVID Centres for providing treatment to COVID patients.

- COVID-19 patients are being treated in the Railway hospitals including CGHS beneficiaries and non railway patients.
- Instructions have been issued for reimbursement of medicines procured by Railway beneficiaries during COVID pandemic to avoid multiple visits to hospital.
- RT-PCR test for COVID started in house in 7 zones and is also in process in other Railways.
- Telemedicine consultation and a mobile App started by Railtel.
- GM's have been empowered to hire doctors & para-medics as per requirement over and above the cadre strength for Covid management.
- With 184 COVID vaccination centers in Railway health facility, 9,64,433 employees have taken first dose and 3,30,621 railway employees have received complete vaccination.

Staff Welfare

IR's welfare schemes cover a wide spectrum of activities in the areas of education, medical care, housing, sports, recreation and catering.

Staff Benefit Fund is an important channel for providing additional facilities to Railway employees and their families in the sphere of education, recreation, Medicare, sports, scouting and cultural activities. Dispensaries under the indigenous systems of medicine, viz. Ayurvedic and Homeopathic, are run with the help of this Fund.

Approximately 42.62% staffs have been provided with railway quarters, as on 31.03.21. In total, 2,603 staff quarter were electrified during 2020-21.

Co-operative societies of various types are functioning on Indian Railways. These Cooperative Societies are either registered with Central Registrar of Cooperative Societies, then Ministry of Agriculture, Department of Agriculture and Cooperation or Registrar of Cooperative Societies of the State concerned in which they are operating. The affairs of such societies are governed by Multi State Cooperative Societies Act, 2002. Railway Administration has no jurisdiction over the administrative, financial, managerial, appointment & service matter of the employees of the society. Railways only provide certain facilities & concessions to these Cooperative Societies as per the provisions of chapter XXIII of IREM Vol.II. There are 46 Thrift and Credit Societies, 116 Railway men's Consumer Cooperative Societies, 11 Labour Cooperative Societies and 03 Railway men's housing Societies functioning on Indian Railways during 2020-21.

Pension Adalats

In accordance with the directives of Department of Pension & Pensioners' Welfare (DOP&PW), instructions have been issued to Zonal Railways & Production Units to conduct Pension Adalat annually on Zonal

level and quarterly at Divisional level to examine & settle the grievances of pensioners. Every efforts are made to settle these cases on the spot. A number of 3,783 cases were taken up in the Pension Adalat held in the month of December, 2020.

Railway Minister's Welfare and Relief Fund

The Fund provides financial assistance and relief to Railway employees and their families in the times of distress. Voluntary contributions from the employees and Railway Women's Organizations constitute the primary source of the Fund.

Railway Schools

IR runs and manages one Degree College and 94 Railway Schools. These schools are being operated purely as a measure of Staff Welfare and they provide quality education at subsidized cost to children of Railway employees as well as non-Railway wards. In addition to this, 87 Kendriya Vidyalayas are also functional on Railway land to caters to the needs of the students residing in the vicinity of these schools.

The notable achievements of Indian Railways sports persons in the field of sports at International and National levels during 2020-21

I At International Level- Due to COVID/19 there was no International Participation in 2020-21.

II At National Level:-

During 1st April, 2020 to 31st March, 2021, Indian Railways participated in total 20 National Championship, out of which Indian Railways teams, were Champion and Runners-up in 07 championships.

III Following Railway players have been honored with National Sports Awards during 2020-21:-

S.No.	Name	Game	Award	Railway
i.	Ms. Divya Kakran	Wrestling	Arjuna Award	Northern Railway
ii.	Ms. Deepika	Hockey	Arjuna Award	RCF
iii.	Ms. N. Usha	Boxing	Dhyanchand Award	East Coast Railway
iv.	Sh. Gaurav Khanna	Para-Badminton	Dronacharya Award	Northern Railway
v.	Ms. Vinesh Phogat	Wrestling	Rajeev Gandhi Khel Ratna	Northern Railway
vi.	Ms. P. Anita	Basketball	Padma Shree	Southern Railway
vii.	Ms. Sudha Singh	Athletic	Padma Shree	Central Railway



Women crew piloted a Goods train from Vasai Road station to Vadodara, WR

Welfare, Development and Empowerment of Women

IR is the largest civil employer in the country with 12,52,347 employees out of which 98,540 are women employees as on March 31, 2021. Due emphasis is laid on staff welfare by the Railways. Although, majority of the Railways' staff welfare schemes and activities benefit both male and female employees, various initiatives are aimed at women employees and also women members of the employees' families. Various privileges available to other women government servants are also available to women Railway employees which include provision for grant of maternity leave, child care leave and special leave for promoting family welfare. Women with disabilities are eligible for grant of special allowance for child care.

A large number of staff welfare activities are financed through Staff Benefit Fund maintained on each Zonal Railway, with a specific outlay towards women empowerment activities. A separate amount has also been earmarked in the Staff Benefit Fund for grant of scholarships for higher education of girl child of Railway employees.

To improve working environment for the women employees, committees have been formed at various levels to address complaints relating to sexual harassment. A number of crèches have been opened at workplaces/offices for the young children of employees and rest rooms provided for women employees.

Handicraft Centres and Mahila Samities operate under the Staff Benefit Fund Scheme in order to help women members of employees' families in augmenting the family income by learning vocational skills like stitching, weaving, beauty culture, computer operations and making some stationery items required by the Railways.

Another unique feature of women empowerment is the "Women Welfare Organisations" on the Railways comprising wives of Railway officers, which are proactive in the empowerment of women employees and women folk of the employees' families. Their activities include running of nursery schools, crèches, schools for mentally challenged children, financial assistance in deserving cases and handicraft centres for women members of employees' families.



Meri Saheli Team, CR

In the field of welfare of women employees, various measures have been undertaken by Zonal Railways viz. Seminars organised on weight loss, Anaemia/Breast cancer, etc. and sanitary pad vending machine/incinerators installed on railway stations and offices.

Facilities to Divyangjan

The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 2016, was promulgated by Government of India to ensure equal opportunities to Divyangjan and their full participation in nation building. The implementation of the provisions of the Act requires a multi sectoral collaborative approach of all Ministries of the Central/State Government including the Ministry of Railways.

Reservation in trains

- A reservation quota of two berths in 3AC and four berths in Sleeper Class has been earmarked in all trains running on non-suburban sections for Divyangjan, performing their journey on concessional ticket. The person accompanying the Divyangjan as escort is also allotted the berth out of this quota. The lower berths are meant for Divyangjan and the middle berth is meant for their escort.
- Instructions have also been issued that in the tickets issued through Computerized Passenger Reservation System (PRS), to the extent feasible, one lower berth should be allotted to the Divyangjan and the person accompanying as escort should be allotted middle/upper berths near the Divyangjan subject to availability of accommodation.
- The facility to book concessional e-tickets online using Photo identity card issued by Railways has been introduced for the Divyangjan.
- After departure of the train, if there are vacant lower berths available in the train and if any Divyangjan booked on the authority of concessional tickets, who has been allotted upper/middle berth, approaches for allotment of vacant lower berths, the Conductor/Train Ticket Examiner (TTE) has been authorized to allot the vacant lower berth to him making necessary entries in the Chart.
- Instructions have been issued that in Garib Rath Express trains which are fully reserved trains, SLRD coaches are treated as reserved for booking by divyangjan travelling on the prescribed disability certificate on payment of full fare of 3 AC Class of Garib Rath Express on first come first served basis.

Separate Reservation Counters

Separate counters are earmarked at various Passenger Reservation System (PRS) centers for dealing with the reservation requisitions received from Divyangjan, Female Passengers, Senior Citizens, Ex. M.Ps, MLAs, accredited journalists and freedom fighters, if the average demand per shift is not less than 120 tickets. In case there is no justification for earmarking of an exclusive counter for any of these categories of persons including Divyangjan or senior citizens, one or two counters depending upon the total demand are earmarked for dealing with the reservation requests for all these categories of persons.

Concession in Rail fare to Divyangjan Passengers

1	Orthopedically Handicapped / Paraplegic persons who cannot travel without escort – for any purpose. However, can book ticket with or without escort.	• 75% in 2nd, SL, Ist Class, 3AC, AC Chair Car. • 50% in Ist AC and 2AC. • 25% in 3AC and AC Chair Car of Rajdhani/Shatabdi trains • 50% in MST* and QST**. • One escort is also eligible for same element of concession
2	Mentally retarded persons who cannot travel without escort – for any purpose. However, can book ticket with or without escort.	
3	Persons with visual impairment with total absence of sight travelling alone or with an escort for any purpose.	
4	Persons with hearing and speech impairment totally (both afflictions together in the same person), travelling alone or with an escort – for any purpose.	• 50% in 2nd, SL and Ist Class • 50% in MST and QST. • One escort is also eligible for same element of concession.

*Monthly Season Ticket

**Quarterly Season Ticket

Additional Facilities

- For the convenience of the Divyangjans, facilities like wheel chairs have been provided at all important stations on Indian Railway. Yatri Mitra Sewa has also been introduced at major railway stations for enabling passengers to book wheel chair services cum porter services free of cost through NGOs, Charitable trust, PSUs etc.
- Battery operated cars are provided at major stations to facilitate boarding/alighting of Divyangjans and senior citizens. 160 Battery Operated Vehicles (BOVs) are already provided at 86 major stations.
- In allotment of STD/PCO booths at Railway Stations, 25% booths have been reserved for Divyangjan (including blind) with disability of 40% and above.
- RPF personnel remain available at important railway stations to render all out security related assistance to Divyangjan, women, children etc. as and when required, to ensure their comfortable journey.
- Unauthorized persons travelling in coaches reserved for Divyangjan and ladies reserved compartments are removed from such coaches and are prosecuted under relevant provisions of the Railway Act.
- Gender sensitization, customers' care and other related training programmers are being conducted for sensitization of RPF Personnel towards the needs of Divyaangjan, elderly persons, women and children.

Special Coach Design

Indian Railway has incorporated Divyangjan Integral Coach Factory (ICF) design SLRD (Second class cum Luggage cum Guard Van

& Divyangjan Compartment) coaches. These coaches have a suitable designed compartment & toilet adapted to the needs of the Divyangjan Passengers.

In these coaches, wider entrance door, wider berths, wider compartments, larger lavatory and lavatory doors etc. have been provided. Inside toilets, additional grab rails on the side walls for support and wash basin and mirror at a lower height are also available.

It is endeavored to have at least one such coach in each Mail/Express train having ICF Type coaches. At present, 3519 ICF type SLRD coaches (as on 31.03.2021) are in the fleet of Indian Railways.

Further, Coach Production Units have already started manufacturing LHB Second Luggage, Guard & Divyang Compartment (LSLRD) type coaches for Divyang Passengers which are being inducted in IR progressively. 11 such coaches manufactured in the year 2018-19, 21 such coaches have been manufactured in the year 2019-20 and 336 such coaches have been manufactured in the year 2020-21. At present, 368 LHB type LSLRD/ LDSLR (as on 31.03.2021) are manufactured over Indian Railways and further proliferation of LSLRD with augmentation in production plan has been planned.

Further, Production Units have manufactured 191 such coaches in the year 2021-22 (Till 01.10.2021)

Further, all Production Units have been advised to provide at least two doors of 920 mm width one on each side of the coach in future in all newly designed coaches. This will ensure improved accessibility to Divyangjan passengers insides coaches.

For the assistance of the visually impaired travellers, integrated Braille Signages, i.e. signages superimposed with Braille scripts, are being provided in all the newly manufactured coaches. Further, retro-fitment of the same in existing coaches is also continuing in a phased manner.

Amenities at Railway Stations

Indian Railways is committed to make its stations and trains accessible for Divyangjan as part of 'Sugmya Bharat Abhiyan' or 'Accessible Indian Campaign' of Government of India to fulfill the mandate as outlined under Right for Persons with disabilities(RPwD) Act 2016. Improvement/ augmentation of amenities including those for Divyangjan at Railway Stations is a continuous and ongoing process.

The Harmonized guidelines and standards of accessibility & provision of facilities for Divyangjan at Railway stations has been circulated in 2020 for implementation over Indian Railways. The comprehensive accessibility guidelines are composed of the following sections:

I. Information System Accessibility

a) Web page/websites of Railway/IRCTC

b) Mobile App

c) Public Announcement System

d) Station Signage System Design

II. Station Accessibility

a) Accessible Parking

b) Ticket and Enquiry Counters

c) Help Booths-Assistance point for Divyangjan

d) Security Check

III. Platform Accessibility

a) Toilets

b) Drinking water booths

c) Eateries and Cafeteria

IV. Inter-Platform Transfer (Vertical Cirdculation)

a) Subway

b) Foot Over Bridges (FOB)

c) Elevators

V. Train/Coach Accessibility

a) Train Coach and Platform Interface

b) Coach Exteriors

c) Coach Interiors and Seating

d) Coach Amenities, Accessible Toilets, Divyangjan Friendly Coaches

e) Emergency Evacuation

VI. Monitoring & Feedback Mechanism

a) Monitoring Mechanism

b) Feedback Mechanism

Recruitment on IR

The Railways are committed to providing career opportunities to Divyangjan and Endeavour to scrupulously follow Government of India's policies in this regard, including those pertaining to affirmative action.

Consequent upon implementation of Right of Persons with Disabilities Act, 2016 raising the reservation from 3% to 4% and expanding the scope of Functional Classification of disabilities for provision of reservation, Ministry of Railways has suitably implemented the same with approval of competent authority. Reservation for new categories of Leprosy Cured and Acid Attack victims as identified by RPwD Act, 2016 is also being provided for Direct Recruitments to Group 'A' posts.

Security

The Railway Protection Force (RPF) has been constituted under the RPF Act, 1957 (as amended in the year 1985 and 2003) for better protection and security of railway property, passenger area, passengers and matters connected therewith. RPF is headed by an officer of the rank of Director General, who functions under the Ministry of Railways.

RPF is empowered under the 'Railway Property (Unlawful Possession) Act, 1966' to deal with cases of theft, dishonest misappropriation and unlawful possession of railway property. RPF is also empowered under the Railways Act, 1989 to deal with offences related to roof traveling, touting, unauthorized entry into coaches earmarked for ladies, unauthorized vending, trespassing etc. Further ambit of powers of RPF has been enhanced by the Central Government to exercise the powers and perform the specified duties under sections 42 and 67 of "The Narcotic Drugs and Psychotropic Substances Act, 1985" and under section 25 of "The Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003" within the areas of their respective jurisdiction respectively.

The administrative set-up of the Railway Protection Force is in sync with the administrative set-up of the Indian Railways. In addition, a special formation called Railway Protection Special Force (RPSF), which is organized on Battalion pattern, provides specialized service to assist the RPF in zonal railways. At present, there are 15 battalions of RPSF located in various parts of the country, including one Mahila Battalion and one Commando battalion (CORAS).

Separate specialized intelligence units, viz. Special Intelligence Branch (SIB) and Crime Intelligence Branch (CIB) also function at Divisional as well as Zonal Railways for collection of special and criminal intelligence respectively. Besides above, Stores, Dog Squad and Band are other specialized units of the Force and located at Divisional, Battalion and Zonal levels, as per requirements of the Force.

On 14.08.2019, Hon'ble Minister of Railways inducted the first Commando force for railways: CORAS (Commandos for Railway Security). Comprising RPF and RPSF personnel, the CORAS is armed with special uniforms with bullet-proof jackets, helmets and sophisticated weapons. CORAS commandos have undergone training programmes, including basic and advanced commando courses with specialization in handling landmines and improvised explosive devices, hostage rescue, sniping and breaching. The unit is being envisaged as a responder for any situation pertaining to damage, disturbance, disruption of train operations, attack/hostage/hijack, and disaster situations in railway areas

'Police' and 'Police Order' are State subjects under the Seventh Schedule to the Constitution of India and, as such, State Government are responsible for prevention, detection, registration and investigation of crime and maintaining law and order etc. on Railways through their law enforcement agencies viz. Government Railway Police (GRP)/District Police.



Preparation of Hand Sanitiser, SER

However, Railway Protection Force (RPF) supplements the efforts of GRP/ District Police to provide better protection and security of passenger area and passengers and for matter connected therewith.

However, the administrative expenses incurred on GRP are shared by Central Government and State Government.

Round the clock security related assistance to passengers by RPF

- **Railway HelpLine-** Railway helpline is functional (24x7) to provide security related assistance to passengers. From 01.04.2021, Security Helpline No.182 has been merged with centralized RailMadad/ Railway HelplineNo.139 for providing security related assistance to passengers.
- **Twitter-** Complaints/suggestions, relating to Security, received through MR Twitter handle @RailMinIndia and @RailwaySeva, are swiftly attended and necessary follow-up action is initiated.

Details of complaints attended over Twitter and Helpline No.:

Year	No. of complaints attended on Twitter	No. of complaints attended on Help Line No.
2019	35,092	73,795
2020	6,293	1,15,531
2021 (Upto Oct.)	**8,781**	**48,639**

- **Rescue of children-** A Standard Operating Procedure (SOP), on care and protection of children on railways has been jointly prepared by the Ministry of Railways in collaboration with the Ministry of Women and Child Development (MoWCD). In this regard, Child Help Desk (CHDs)/Kiosks have been set up at 132 important railway stations. Child Help Groups (CHGs) have been constituted at these stations which comprise of Station Superintendent/Station Master, Inspector/ RPF, SHO/GRP and Sr. Section Engineer. Ministry of Women and Child Development has nominated NGOs at these stations.

Details of children rescued by RPF in the year 2019, 2020 & 2021 (upto Oct.):

Year	No. of children rescued by RPF
2019	16,294
2020	5,193
2021 (Upto Oct.)	**10,332**



Distribution of cooked food amongst the poor needy and distressed people during lockdown, SER

- **Surveillance through CCTV Cameras –** Indian Railways have decided to provide CCTV cameras at all stations (excluding halt stations) as well as in trains to enhance the safety of passengers. So far, CCTV cameras have been provided at 838 railway stations and

in 4,934 coaches. As a pilot project "Face Recognition System" has been provided at Bengaluru Railway station.



Shramik Special Train, CR

Measures initiated by RPF for security of passengers and passenger area

- Escorting of trains on vulnerable and identified routes/sections by RPF/ GRP of different States daily.
- Integrated Security System (ISS) provided to improve surveillance mechanism over 189 railway stations.
- Provision of CCTV cameras in 4,934 coaches and at 838 railway stations for enhancing security of passengers.
- Implementation of Station Security Plan over identified railway stations.
- Railway Helpline No.139 operational (24x7) over Indian Railways for security related assistance to passengers.
- Prosecution of offenders for unauthorized vending/hawking, entry into ladies and reserved compartments, touting of tickets, trespassing, roof travelling, alarm chain pulling etc. under relevant provisions of the Railways Act.
- Detection of passenger related crime, arrest of criminals and handing over to GRP for further legal action.
- RPF/RPSF personnel have been deployed in vulnerable sections, naxal affected areas and northeast region to ensure smooth transportation of goods & passengers and to secure Railways during bandh, dharna, agitation etc.
- State Level Security Committee of Railways (SLSCRs) have been constituted for all States/Union Territories under the Chairmanship of respective Director General of Police/Commissioner of States/ Union Territories for regular monitoring and review of security arrangements of the Railways.

Women security

The following operational measures are being taken for ensuring women security over Railway system:

i) RPF has launched Pan India initiative "Meri Saheli" on 17.10.2020 with objective to provide enhance safety and security to lady passengers travelling by trains for their entire journey, i.e. from the originating station to destination station.

ii) Ladies Special trains running in Metropolitan cities are being escorted by lady RPF personnel.

iii) The Ladies' compartments in local trains are being escorted by RPF and GRP during peak/non-peak hours. Staff deployment is done during late night and early morning local trains to ensure proper security to lady passengers.



CCTV at Station, WCR

iv) Action is taken against offenders travelling in ladies' coaches by conducting intensive drives under section 162 of the Railways Act.

v) Seminars on gender sensitization/public awareness programmes are being organized with the assistance of NGOs for sensitization of RPF personnel, Railway staff and passengers.

vi) Mixed train escort parties (comprising of male and female staff/ officers) are being put in place in a phased manner on vulnerable routes.

Protection and security of Railway property :

Since the year 1966, RPF is prosecuting offenders under relevant provisions of the 'Railway Property (Unlawful Possession) Act, 1966' for unlawful possession of the railway property. This Act was amended in the year 2012, with widening of the ambit of penal sections. Performance of the RPF under the RP (UP) Act 1966 for the years 2019, 2020 & 2021 (upto Oct.) is as under:

Year	No. of cases detected under the RP (UP) Act	Value of property recovered (₹in crore)	No. of persons arrested
2019	3,501	3.86	6,782
2020	2,533	8.75	5,875
2021 (upto Oct.)	**3,435**	**5.23**	**7,412**

Action against touts:

The online booking of railway tickets in present form through IRCTC website started in 2005. Over the years, the online booking became popular and today, out of approx 16 lakhs reserved berths/seats made available by IR daily, about 72% or 11,70,000 reserved berths/seats are booked online. Out of these reserved berths, very few of them are available under Tatkal Quota. Therefore, the demand of seats/berths in Tatkal Quota remains very high.

In course of intensive drives launched by RPF in the past, it was revealed that confirmed berths under Tatkal Quota as well as General Quota gets sold out within few seconds after opening. It was suspected that some unscrupulous elements use illegal softwares to jump the online queue and corner confirmed tickets in bulk. It was decided to extend query based access of PRS data to RPF to tackle this menace. RPF started using technological surveillance based on this access to PRS data called PRABAL to identify suspects since November, 2019.

The first success came on 02.12.2019 when RPF arrested developers of two illegal softwares "I-BALL" & "RED BULL" from UP thereby causing these softwares to crash. On the basis of information obtained from Field units collated with analysis of digital data, nationwide action was started. Due to effective action by RPF, several illegal softwares like ANMS, MAC, N-GET, Cycle, Star V2, Jaguar etc. stopped functioning and developers of such softwares have also been arrested and legal action taken against them.

Vigilance

Vigilance Organisation plays a very important role in the administration of the Railways. It investigates complaints, conducts sample checks in respect of managerial decisions, with a view to determine their conformity to objectivity, transparency and concordance with extant rules and procedures.

Vigilance working has four facets: (1) Preventive Vigilance (2) Participative Vigilance (3) Punitive Vigilance and (4) Pro-active Vigilance.

(1) Preventive Vigilance

The aim here is to disseminate knowledge across a wide cross section of Railway officials, suggest system rationalization measures for imparting greater transparency and predictability, catalyze use of technology in decision making and create greater awareness amongst the public on issues relating to corruption mitigation.

Some of the steps taken in this direction were:

- In 2020-21, a total of 9,990 preventive checks were conducted throughout the Railways.
- In 2020-21, All major Railway Units realized E-magazines/ Bulletins for circulation. These bulletins contain case studies, dos & don't etc. related to various departments.
- Electronic media was extensively utilized by all Zonal Railways, Production Units and Public Sector for conducting extensive public campaigns during Vigilance Awareness Week, 2020.

(2) Participative Vigilance

(a) 24 Hours Vigilance Helpline: 24 hour vigilance helpline (Helpline No.139) of the Railways. In addition to this, the email addresses of vigilance officers are posted on the website.

(b) Vigilance Awareness Week is celebrated every year during the last week of October or first week of November to educate the general public regarding the facilities available in the department and also ways and means to lodge complaints. The same was observed between 27th October and 02nd November in the year 2020.

(c) Counselling: As many as 248 Workshops/webinars/interactive sessions were conducted on topical issues by Vigilance in 2020 in which officers, senior supervisors and other Railway personnel representing various levels and disciplines participated; the primary focus was to inculcate greater awareness of rules, procedures and, most importantly, the pitfalls that need to be steered clear of.

Training sessions of three days was conducted for IOs and POs through video conferencing from 19th to 21st January, 2021 by Railway

Board Vigilance. Further 09 sessions each consisting of 40 to 50 trainees of different disciplines were conducted on Advance Management Programme (AMP), Management Development Programme (MDP) by NAIR, Vadodara. Two special sessions on Preventive Vigilance in coordination with CBI - one consisting of 70 officers and other consisting of more than 200 officials (dt.16th – 18th Dec.2020) of IRs were organized.

(3) Punitive Vigilance

A statement showing number of officials against whom disciplinary action in vigilance-investigated cases was initiated/finalized during April 2020 to March, 2021 is given below:

Vigilance investigated cases	2020-21
Number of officials against whom disciplinary proceedings were initiated.	**2,829**
Number of officials against whom disciplinary proceedings resulted in imposition of major penalty	**834**
Number of officials against whom disciplinary proceedings resulted in imposition of minor penalty	**2,479**

(4) Proactive Vigilance

(a) Conducting surprise checks in areas of mass contact (like reservation offices, ticket booking counters, luggage/parcel and goods booking offices, on-board passenger-carrying trains etc.) in the accountal/disposal of scrap, loading of freight wagons and parcel vans (primarily with a view to detect/control incidences of overloading) etc. During the calendar year 2020, these measures resulted in realization of revenues to the tune of ₹89.57 crores.

(b) Scrutinizing of more than 539 Annual Property Returns filed by officers.

Promoting Hindi

In accordance with the provisions of the Official Languages Act,1963 and the Official Language Rules,1976 promotion of usage of Hindi is a continuing endeavour on Indian Railways. Till the end of 31st March, 2021, the total number of notified Railway Offices is 3,592. In these Railway Offices, employees proficient in Hindi have already been given directions to transact cent-percent work in Hindi in the subjects specified under Official Language Rules. Besides this, Official Language officers of Railway Board Office and Zonal Railways regularly inspect the Railway Offices to monitor the implementation of Hindi. In the year 2020-21, a total number of 24 inspections have been carried out by the second Sub-Committee of Parliamentary Committee on Official Language and has appreciated the use of Hindi in these Offices during inspections by Parliamentary Committee. In addition to this, Grih-Patrika 'Rail Rajbhasha' in Hindi is also published by Railway Board Office. Till now, 125 editions of the patrika have been published and circulated to all the Railway Offices. 'E-Rajbhasha' web magazine is also being brought out regularly. Till now, 30 editions of this patrika have been brought out. About 118 Hindi Grih-Patrika are also being published by Zonal Railways/Divisions etc.at their level.

Training in Hindi Typewriting, Hindi Stenography and Hindi Language

In addition to the Training Centres set up by the Ministry of Home Affairs, arrangements are also made by Indian Railways to provide in-service training in Hindi language, Hindi typing and Hindi stenography. The number of employees trained at the end of 2020-21 as compared to 2019-20 as follows:-

Activity	As on March 31,2020	As on March 31,2021
working knowledge/ Proficient in Hindi	8,62,446	**8,76,602**
Hindi Typing	7,942	**7,321**
Hindi Stenography	3,112	**2,863**

Other activities

The existing policy of purchasing bilingual electronic equipments, like computers etc. is being followed. During 2020-21, 52,927 bilingual personal computers are available in various Offices of Indian Railways. Websites of the Zonal Railways including Railway Board are also available in bilingual form. In order to promote usage of Hindi in Railway Offices, 935 Codes/ Manual and 6,601 Station-Working Rules have been published bilingually. Besides this, 26,461 Local, Statutory and Standard Forms have been made available in bilingual form in Zonal Railways and Production Units including Railway Board. Presently, more than 17 lac books in Hindi are available in 982 Hindi Libraries on Indian Railways and most of the libraries have been named after the names of famous litterateurs of Hindi.

Official Language Implementation Committees

To review the progress of the use of Hindi, total 968 Official Language Implementation Committees are constituted on the Zonal Railways, in Production Units etc and meetings of these committies are being virtually organized. Beside this, Railway Board Official Language Implementation Committee has been constituted at Railway Board level also and its meetings are being virtually organized.

Railway Hindi Salahakar Samiti

In order to propagate the use of Hindi in Ministry of Railways and Zonal Railways, Railway Hindi Salahakar Samiti constituted under the Chairmanship of Hon'ble Minister of Railways, whose main objective is to give valuable suggestions to propagate the use of Hindi.

Incentive Schemes for the use of Hindi

Various incentive schemes have been implemented to encourage railway personnel to work in Hindi. Prominent among them are the Kamlapati Tripathi Rajbhasha Swarn Padak award scheme, Rail Mantri Rajbhasha Rajat Padak award scheme, Rail Mantri Rajbhasha shield/trophy and other running shields award scheme, Rajbhasha Individual cash award scheme, Rail Mantri Hindi essay competition, Premchand award scheme, Maithilisharan Gupt award scheme, Lal Bahadur Shastri Takniki Maulik Lekhan award scheme, Rail Yatra Vritant award scheme, Zonal/All Railway level Hindi Essay, Elocution, Noting & Drafting competition, Akhil Rail Hindi Natyotsav Competition. General Manager, West-Central Railway, Jabalpur was awarded Kamalapati Tripathi Rajbhasha Swarn Padak for the outstanding work in Hindi.

On 31.07.2020, Premchand Jayanti was organized under the chairmanship of Director (OL). On this occasion, lecture on the life of Munshi Premchand presented by Director (OL).

In order to promote usage of Hindi, "Hindi Week" was organized from 14th to 18th September, 2020 in the Ministry of Railways. On the occasion of Hindi Diwas on 14th September 2020, a message from the Hon'ble Minister of Railways was read and circulated to all the offices of Indian Railway to work in Hindi.

On 15.09.2020, online Hindi essay competition was organized on the topics of New Education Policy and Indian Languages, Role of Indian Railways during corona pandemic and Indian Railways and Tourism. Also, on 17.09.2020, online Hindi Seminar was organized.

Prize distribution programme was organized on 08.10.2020, in which a total of 12 prize winners were rewarded by the Executive Director E(R) who got first, second, third and consolation prizes in Hindi essay and noting & drafting competition organized during "Hindi Week".

On 03.11.2020, a full day Hindi workshop was organized under the chairmanship of Director (OL). During the year 2020-21, a total 330 Hindi workshops were also organized on all Zonal Railways and production units etc. including Railway Board on different subjects, in which about 6,476 officers/employees participated.

North Eastern Region



Train runing on electric traction passing New Coochbehar Railway station NFR

North Eastern Region comprising 8 States, viz., Assam, Arunachal Pradesh, Meghalaya, Manipur, Nagaland, Mizoram, Tripura and Sikkim is being served by Northeast Frontier Railway. Development of rail infrastructure in North Eastern Region is one of the priority areas of the Ministry of Railways. The endeavor of the Government is to provide rail connectivity to all the sister states in the region and thereafter, extend the same to the capital cities. Out of 8 States of North Eastern Region, rail network connectivity now exists in 7 States. Sikkim is being connected with the new line project Sivok-Rangpo (44 km).

Presently, 20 Railway projects (14 New Lines and 6 Doubling), costing ₹74,485 crore for 2,011 km length, falling fully/partly in North Eastern Region are under different stages of planning/approval/execution.

Present status of these projects is as under:-

NEW LINES

1. Bhairabi-Sairang

Length	51 km
Anticipated Cost	₹5,521 crore
Expenditure upto 31.03.2021	₹3,964 crore
Outlay 2021-22	₹1,000 crore

Status: Work has been taken up and targeted to be completed by March, 2022.

2. Agartala (India) - Akhaura (Bangladesh)

Length	12.3 km (5.5 km in India + 6.8 km in Bangladesh)
Anticipated Cost	₹742 crore (Indian portion)
Expenditure upto 31.03.2021	₹380 crore
Outlay 2021-22	₹300 crore

Status: Works have been taken up on this project.

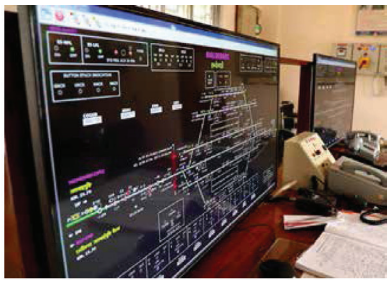
3. Byrnihat-Shillong

Length	108 km
Anticipated Cost	₹4,083 crore
Expenditure upto 31.03.2021	₹1,049 crore
Outlay 2021-22	₹0.0001 crore

Status: Land acquisition is held up due to protest by Khasi Students Union (KSU). Final Location Survey (FLS) could be done upto 103 km length only. FLS could not be done in balance 5 km length.



Maintenace of rolling stock NFR



Electronic Interlocking system at Haldibari Station NFR

4. Dimapur (Dhansiri) - Kohima (Zubza)

Length	82 km
Anticipated Cost	₹6,911 crore
Expenditure upto 31.03.2021	₹1,719 crore
Outlay 2021-22	₹800 crore

Status: Demanding Inner Line Permit.

5. Jiribam-Imphal

Length	111 km
Anticipated Cost	₹12,264 crore
Expenditure upto 31.03.2021	₹10,948 crore
Outlay 2021-22	₹1,000 crore

Status: 12 km section has been commissioned and work has been taken up in remaining length.

6. Sivok-Rangpo

Length	44 km
Anticipated Cost	₹4,086 crore
Expenditure upto 31.03.2021	₹1,015 crore
Outlay 2021-22	₹1,100 crore

Status: Work has been taken up on this project.

7. Tetelia-Byrnihat

Length	22 km
Anticipated Cost	₹1,105 crore
Expenditure upto 31.03.2021	₹838 crore
Outlay 2021-22	₹100 crore

Status: Tetelia-Kamalajari (10 km) section has been completed and commissioned. Work taken up in balance section. Work in Meghalaya State is stopped since 2017 due to law and order problem.

8. Murkongselek-Pasighat

Length	27 km
Anticipated Cost	₹750 crore
Expenditure upto 31.03.2021	₹278 crore
Outlay 2021-22	₹0.0001 crore

Status: Land acquisition is held up due to demand of high rate of land in Arunachal Pradesh.



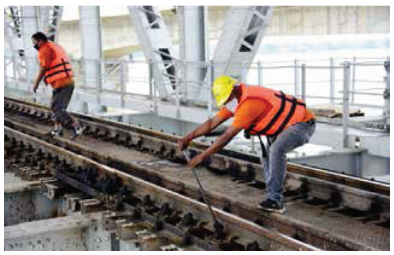
Maintenance of overhead wire in an electrification section NCR

9. New Maynaguri-Jogighopa New Line with Gauge Conversion of New Mal-Maynaguri Road and New Changrabandha-Changrabandha (3 km) (Total 289 km)

Length	285 km
Anticipated Cost	₹4,541 crore
Expenditure upto 31.03.2021	₹3,802 crore
Outlay 2021-22	₹0.0001 crore

Status:

- 231 km commissioned.
- Works have been taken up in balance portion.



Bridge maintenance work at NFR

10. Dimapur-Tizit

Length	257 km
Anticipated Cost	₹4,274 crore
Outlay 2021-22	₹0.0001 crore

Status: The work has been included in Budget 2013-14 subject to requisite approvals.

11. Salona-Khumtai

Length	99 km
Anticipated Cost	₹5,958 crore
Outlay 2021-22	₹0.0001 crore

Status: The work has been included in Budget 2017-18 subject to requisite approvals.

12. Sibsagar-Jorhat

Length	62 km
Anticipated Cost	₹2,696 crore
Outlay 2021-22	₹0.0001 crore

Status: The work has been included in Budget 2017-18 subject to requisite approvals.

13. Tezpore-Silghat

Length	25 km
Anticipated Cost	₹3,582 crore
Outlay 2021-22	₹0.0001 crore

Status: The work has been included in Budget 2017-18 subject to requisite approvals.

14. Maishashan (India) - Zero Point (Bangladesh)

Length	3 km
Anticipated Cost	₹39 crore
Outlay 2021-22	₹0.0001 crore

Status: The project sanctioned in 2020-21. The project is at initial stage.

DOUBLING

1. New Bongaigaon-Kamakhya via Rangiya

Length	143 km
Anticipated Cost	₹2,047 crore
Expenditure upto 31.03.2021	₹136 crore
Outlay 2021-22	₹650 crore

Status: Earthwork and works of major bridges and minor bridges have been taken up.

2. New Bongaigaon-Kamakhya via Goalpara

Length	176 km
Anticipated Cost	₹2,950 crore
Expenditure upto 31.03.2021	₹1,549 crore
Outlay 2021-22	₹310 crore

Status: New Bongaigaon-Majgaon (8.53 km) and Majgaon-Abhayapuri (8.96 km): Sections completed. Work has been taken up in remaining portion except for 5 km length between Azara – Kamakhya section which is held up on account of NGT issue.

3. Digaru - Hojai

Length	102 km
Anticipated Cost	₹1,873 crore
Expenditure upto 31.03.2021	₹1,195 crore
Outlay 2021-22	₹100 crore

Status: Digaru - Jagiroad (23.628 km), Kampur-Hojai (27.50 km) and Dharamtul – Kampur (32.50 km): Sections completed and commissioned. Earthwork, Minor bridges and Major bridges work taken up in remaining length.

4. Kamakhya – New Guwahati Quadrupling

Length	21 km
Anticipated Cost	₹6,125 crore
Outlay 2021-22	₹0.0001 crore

Status: The work has been included in Budget 2017-18 subject to requisite approvals. FLS has been sanctioned.

5. Saraighat Bridge (doubling)

Length	7 km
Anticipated Cost	₹1,127 crore
Expenditure upto 31.03.2021	₹0 crore
Outlay 2021-22	₹5 crore

Status: The work has been included in Budget 2017-18 subject to requisite approvals. FLS has been sanctioned.

6. Lumding - Tinsukia Jn. Doubling

Length	381 km
Anticipated Cost	₹3,810 crore
Expenditure upto 31.03.2021	₹ 0 crore
Outlay 2021-22	₹5 crore

Status: The work has been included in Budget 2020-21 subject to requisite approvals.

Passenger Service Improvement

During the year 2020-21, Extension of 02 train services (in single) and increase in frequency of 02 trains services (in single) were implemented on NE Region.

Computerised passenger Reservation System

The facility of computerized Passenger Reservation System (PRS) is available at about 174 locations in the North Eastern Region. All State Capitals of North Eastern Region are on PRS network. Some of the above locations are unified Passenger Reservation System-cum Unreserved Ticketing Systems (PRS-cum-UTS).



Gorakhpur Jn. Station during Lockdown period, NER

Public Relations

The Public Relations Directorate is responsible for disseminating information of various policy initiatives, services, concessions, projects, performances and developmental activities undertaken by the Railways. Publicity campaigns are also launched to educate the rail users on various aspects of railway working including safety and security norms in order to create awareness among them. Interaction with the rail users through print & electronic media is a continuous process for the PR Department.

During the year 2020-21 (from 01.04.2020 to 31.03.2021), Public Relations Directorate of Railway Board played an important role in building both the corporate and social image of Indian Railways. Positive information regarding various steps/action taken by Indian Railways to fight against COVID-19 like production of PPE Kits, masks & sanitizers by railways, running of Oxygen Expresses and Shramik Special trains, free of cost catering services, making of isolation coaches etc. was disseminated and informative display advertisements on topics like running of special trains during COVID pandemic, Mega bridge on Kosi river, inaugation of East Dedicated Freight Corridor and West Dedicated Freight Corridor, revamp of IRCTC portal were published in various newspapers. Short films were produced on two topics viz. launch of Freight Business Development Portal and Rail Madad App.

Social Media Handles of Minsitry of Railways have seen a high surge in number of followers and likes on various posts & tweets. Social media services like Twitter, Facebook, Instagram, YouTube etc. are now utilized for not only disseminating information about various policy initiatives/ passenger amenities, but it is also acting as a real time redressal addressing medium. Followers' base of social media handles of Ministry i.e. around 63 lac in Twitter (@RailMinIndia), around 19 lakh followers on Facebook page (@RailMinIndia), around 4.10 lac subscribers of YouTube Channel @RailMinIndia, around 7.17 lac followers on Instagram (@RailMinIndia) are one of the best performing Ministries under Govt.of India. Rail users or otherwise can easily file rail related grievances on Twitter and a prompt redressal is initiated against those grievances. Information in the form of small videos, TVC and other rail documentaries showcasing new initiatives, innovation and other railway related information on day to day basis are uploaded on YouTube. All functions/events where the railways launch new trains/passenger amenities are broadcast through YouTube Live, thus, enabling the public at large to get information on real time basis. Reach of such posts sometimes crosses more than 10 lac.

Zonal Railways/ Production Units had also undertaken a number of publicity campaigns on various themes such as awareness campaign about prevention from COVID-19, International Yoga Day, Rashtriya Ekta Diwas, Fit India Campaign, Awareness campaign for One Nation One Ration Card, celebration of Constitution Day, multimedia campaign about Jago Grahak Jago tag, awareness about National Pension System, activities undertaken to commemorate 75th anniversary of India's Independence Day. About

20,689 press releases were released; 352 press conferences were organized; 7,303 publicity brochures were brought out. About 683 Radio/TV Spots were produced and about 1,072 Radio/TV spots were broadcast/ telecast by the Railways on different radio/TV channels by the all Zonal Railways. About 9 press party tours were conducted by the Railways as well as PR Directorate of Railway Board to highlight the benefits to be accrued to rail users due to introduction of new facilities/ initiatives/new national projects in their region. Railways had also participated in 19 exhibitions across the country.

The in-house monthly magazines viz., 'Indian Railways' (in English) and 'Bharatiya Rail' (in Hindi) are brought out by the Ministry of Railways to provide effective links between the Railways in India and the rail users. Special Annual issues of both the Magazines were brought out. Now subscribers can pay subscription charges of these magazines through IRCTC portal.

Commercial Advertising

Commercial publicity on Railway Assets is allowed by Indian Railways by utilizing the available assets like vinyl wrapping on Mobile Assets, Digital advertisements, Content on Demands through audio & video display of advertisements through Hoardings at station premises, circulating areas, Road over Bridges, Road under Bridges, level crossing gates, Railway colonies, Railway workshops, Railway production units, land along the tracks and allowing Innovative Ideas/concepts themes/schemes etc., PRS/ UTS tickets and reservation chart/forms are also utilized for commercial publicity.



Vaccination Drive in RCF

Railway Engineers Regiments (Territorial Army)

Introduction

"Territorial Army" was raised in 1949 as a 'Voluntary Citizens' force inaugurated by the first Indian Governor-General of India, C.Rajagopalachari, on 9th October 1949. Since then Territorial Army Raising Day is celebrated on 9th October, every year.

The Territorial Army is known as a second line of defence It is essentially aimed at providing basic military training to gainfully employed citizens so that in the event of a grave national emergency they can play their part to meet the internal security needs and contribute to the defence of the country.

The Territorial Army is composed of Non-departmental TA units and Departmental TA Units. Non–Departmental Units consist of Infantry Battalions (TA) whereas 'Departmental' Units comprise Railways, Oil sector, Health Services and Ecological Units.

The Departmental TA units are not combatant units but are basically a technical Force. The sphere of activities of Railway TA Units is confined to the Railway activities-be it during peace time or during hostilities. However, being a technical force, the services of Railway Servants belonging to all Departments (other than Accounts and Personnel) are considered useful to the Railway Engineers regiments (TA). The service in these TA Regiments is undertaken by Officers (called as Commissioned Officers), Supervisors (called as Junior Commissioned Officers) and staff (Other Ranks) on voluntary basis with objectives to maintain rail communication in forward areas during active hostilities and peacetime emergency situations.

The most important feature of this force is that enlistment to the Railway Territorial Army does not stand in the way of duties and responsibilities attached to the civil vocation of TA personnel (called Terriers) and rather provides them an opportunity to participate in national defence and support the national effort while remaining in present vocation. It also offers an opportunity to TA personnel to imbibe military discipline, widen general outlook, develop physique and self-confidence simultaneously preparing them for service of the country in emergency situations.

By joining the TA, the Terriers gain knowledge of an orgnisation responsible for safeguarding the country, handling weapons and ammunition and are exposed to a very high degree of discipline for which the Army is known. This also instills in them a sense of euphoria and makes them real tough when they look upon themselves in plush 'Olive' Green uniforms and shiny stars on epaulettes.

Composition of Railway Territorial Army Regiments

Present six Railway TA Regiments are detailed below

Regiments	Location	Controlling Zonal Railway	Command Affiliation	Zonal Railways attached for recruitment/ enrolment in Railway TA
969 Railway Engineer Regiment	Jamalpur	Eastern Railway	Eastern Command	Eastern , East Central & North East Frontier Rly
970 Railway Engineer Regiment	Jhansi	North Central Railway	Southern Command	North Central & Central Railway
1031 Railway Engineer Regiment	Kota	West Central Railway	Eastern Command	West Central & Western Railway
1032 Railway Engineer Regiment	Adra	South Eastern Railway	Eastern Command	South Eastern, South East Central & East Coast Railway
1101 Railway Engineer Regiment	Chandigarh		Northern Command	Northern, North Eastern & North Western Railway
1105 Railway Engineer Regiment	Secunderabad	South Central Railway	Eastern Command	South Central, South Western & Southern Railway

Strength of Regiments

A Railway TA Regiment is having sanctioned strength of (i) 23 Officers, 46 Junior Commissioned Officers (JCOs) and 1,081 Other Ranks (ORs) from Railway departments & (ii) 5 Officers, 6 JCOs and 58 ORs from Regular Army.

Expenditure

The entire expenditure on functional requirements of Railway TA Units (Including cost of stores, arms/ammunition, pay and allowances, cost of Annual Training Camps, incentives, cash awards etc.) is borne by the Ministry of Railways. During 2020-21, an expenditure of approx. ₹14.12 crore (Rupees Fourteen crore twelve lac approximately) was incurred on six TA Regiments.

Annual Training Camp

The Railway TA personnel have to undergo 30 days mandatory annual training every year to keep them physically fit and accustomed with military discipline, arms defence techniques etc. The annual training camps were not conducted for the Railway TA personnel of the six Railway TA Regiments during 2020-21 due to COVID-19 pandemic.

Incentives/Cash Awards etc. Admissible to TA Personnel

(a) Extra two sets of passes for shifting family;

(b) Special casual leave for 6 days before/after the ATC in addition to travel time;

(c) TA service entry in employee's service record;

(d) One month's additional pay in accordance with Military Rank pay during ATC & Territorial Army Allowance;

(e) During embodiment service, TA personnel are entitled to daily allowance at double rate;

(f) Payment of average Running Allowance & Night duty allowances;

(g) Free Ration/Clothing during ATC;

(h) Cash Award on joining TA and on completion of 9 years, 12 years and 15 years.

(i) CSD facilities.

Territorial Army Events

Railway TA Regiments actively participate every year in Territorial Army Raising Day celebrations through display of Tableau/Exhibition and TA Marathon events. Railway TA Regiments have always received deep appreciation/accolades from Additional Director General Territorial Army and entire TA fraternity for their participation/performance during these TA events.

Operational Exercises

The Present 6 (six) Railways TA Regiments have been allotted specific operational takes in pre-designated operational areas(to be carried out every year on rotational basis) by Directorate General of Operational Logistics and Strategic Movement (DGOL&SM), Army Headquarters to validate operational take and capabilities of these Regiments. All six Railway TA Regiments have already carried out "Operational Exercises" once in their operational tasking area during the years 2012-20 to rehearse their role to maintain rail communication during active hostilities and peacetime emergencies. However, the scheduled operational Exercise for the year 2020-21 was not conducted by 1,032, Railway Engineer Regiment, Adra due to COVID-19 pandemic and the same was re-scheduled for November, 2021.

CRB Trophy and Cash Prize to best Railway TA Regiment

CRB Trophy was introduced in 1983 alongwith a Cash Award of ₹25,000/- (enhanced to ₹1,00,000/- in 2009) as an incentive/encouragement to the Railway TA personnel to inculcate a competitive spirit among Railway TA Regiment.

Conclusion

The prevailing system/structure of Territorial Army on Railways is functioning very well as Railway employees are performing their defined role/activities by attending Annual Training camps, regular participation in various sports/cultural and welfare activities organised by Army Units from time to time and carrying out operational tasks to the best satisfactions of Railways as well as Defence authorities.

Further, Railway servants are taking deep interest in joining this system year by year. Annual Conferences on Railway TA are also organised periodically represented by apex level authorities of Railways, Defence and Territorial Army for strengthening this system on Railways.

Undertakings and other Organizations



Bridge work at Railway Project Sri Lanka, IRCON

Undertakings and other Organizations

As many as 14 Public Sector Undertakings and other Organizations are functioning under the Ministry of Railways, as detailed below:-

S. No.	Name	Year of Incorporation/ Inception	Core competence
1	RITES	1974	To design, establish, provide, operate, maintain and perform engineering, technical and consultancy services for development of projects/systems of all types and descriptions pertaining to Railways and Other Sectors/ Industries in India and outside India.
2	IRCON	1976	To undertake construction activities in India and abroad on turnkey basis or otherwise in various fields of infrastructure like Railways, Bridges, Roads, Highways, Industrial and Residential Complexes, Airports, etc.
3	CRIS	1986	CRIS is the IT arm of Indian Railways. It designs, develops, implements and maintains centralized IT system for all departments of Indian Railways.
4	IRFC	1986	To raise funds from the market to part finance the Plan Outlay of IR.
5	CONCOR	1988	To develop multi-modal logistics support for India's international and domestic containerized cargo and trade.
6	KRCL	1990	To construct and operate railway lines, construct Road Over Bridges and rail line projects.
7	RCIL (RailTel)	2000	To utilize the surplus telecom capacity and right of way available with the IR to build nationwide optical fibre cable based broadband telecom and multimedia network.
8	IRCTC	2001	To undertake catering and tourism activities of the Railways. Also facilitates internet ticketing through its website.
9	PRCL	2001	To execute the Surendranagar-Rajula-Pipavav Port gauge conversion and new line projects in Gujarat.
10	RVNL	2003	To create and augment the capacity of rail infrastructure. To mobilize resources mainly through multilateral/ bilateral funding agencies and also through domestic market for successful implementation of projects.
11	RLDA	2005	To develop vacant railway land for commercial use for the purpose of generating revenue by non-tariff measures for IR.
12	DFCCIL	2006	To plan and construct Dedicated Rail Freight Corridors (DFCs) for movement of freight trains on the corridors.
13	MRVC	1999	To plan and implement rail projects in the Mumbai Metropolitan Region.
14	BCL	1976 (In MOR from 2010)	To manufacture wagons, undertake structural fabrication jobs and manufacturing, retrofitting of EOT crane.



Pamban Vertical Lift Bridge An Engineering Marvel through an Iconic Bridge, RVNL



RITES is exporting Make in India 3000 HP Cape Gauge AC AC locomotives to Mozambique

Rail India Technical and Economic Services Limited (RITES)

RITES Ltd., a Mini Ratna (Category-I) and Schedule 'A' Central Public Sector Enterprise under the Ministry of Railways, incorporated on April 26, 1974, is a leading player in the transport consultancy and engineering sector and uniquely placed in terms of diversification of services and geographical reach in various sectors such as railways, highways, airports, ports, ropeways, urban transport, inland waterways and renewable energy. The company is the only export arm of Indian Railways for providing rolling stock overseas (other than Thailand, Malaysia and Indonesia).

RITES became a listed company in July, 2018. Within the one year of listing, the company has made it to the top-500 companies in terms of market capitalization. As on 30th June, 2021, the company's market capital stands at approx ₹6,600 crore.

Financial Performance

In the year 2020-21, affected by pandemic-induced disruptions, RITES has recorded a consolidated revenue and profit after tax of ₹2,005 crore and ₹444 crore, respectively, while sustaining its profit margins at 22.2%.

RITES achieved total standalone revenue of ₹1,947 crore and the operational revenue, excluding other income, of ₹1,797 crore. Its profit before tax and profit after tax stood at ₹562 crore and ₹424 crore, respectively, down by 31.6% and 28.8% over the year 2019-20. The key business segments continued to sustain margins due to timely cost-control measures. Sectoral diversity, geographical distribution and digitalisation helped RITES in identifying business opportunities, consolidating order book and maintaining a diversified business portfolio.

Domestic projects

RITES have executed many projects of national importance over the years. It completed the electrification works between Sawai Madhopur – Jaipur – Ringas Section (188 km) and Vijaypur - Maksi section (188 km) and further secured work for electrification of around 489 KM.

Foreign Projects

During the year 2020-21, RITES not only signed (post negotiations through video-conferencing) the contract for supplying 06 Cape Gauge AC-AC Traction Diesel Electric Locomotives and 90 Cape Gauge Passenger Coaches, including 05 sets of DEMUs, to CFM Mozambique but was able to supply 2 locomotives despite supply chain disruptions. Also, export to Sri Lanka, of 160 main line passenger coaches and 2 sets of fully air conditioned DMUs, has started.

RITES is also executing PMC for 4-Lane National Highway project in Bangladesh, Trident Port in Mauritius and Construction Supervision Services for Metro Express project in Mauritius. It has also completed the work of Integrated Check Post (ICP) at Biratnagar in Nepal and secured work of ICP at Nepalgunj and Bhairahawa in Nepal. It also secured consultancy work for old runway rehabilitation at Gautam Buddha International Airport,

Nepal. It has also completed the detailed project report for Georgetown road project in Guyana (South America).



Railway Track Work at Malaysia, IRCON

Subsidiary & joint venture

RITES' subsidiary company, REMC Ltd., which has been mandated to handle the power procurement under 'open access' for the Indian Railways, besides handling renewable energy and energy-efficiency projects, has registered a revenue of ₹69 crore and PAT of ₹24 crore in the year 2020-21.

RITES' joint venture, SAIL RITES Bengal Wagon Industry Private Limited (SRBWIPL), has been manufacturing specialised high-end wagons for the Indian Railways and other clients. During the year 2020-21, it has achieved a profit of ₹2.5 crore with revenue of ₹161 crore.

Besides, RITES has recently acquired 24% stake in Indian Railway Stations Development Corporation, a nodal agency for redeveloping stations in the country.

Going forward

The key infrastructure sectors, where RITES is actively pursuing business in India and abroad, have been experiencing rapid growth with increasing investments from the Government and private sector. The increased thrust on transport infrastructure development through the National Infrastructure Pipeline and the National Rail Plan offers RITES more opportunities and with wide consultancy expertise, it is fully aligned to tap these possibilities.

Besides, in several countries where RITES pursues business interests, there is an increased thrust on the expansion and upgradation of infrastructure, including rail and road network, Light Rail System (Metro), to ensure faster, safer and timely movement of goods and passengers. It provides opportunities for technical consultancy and export of rolling stock to these countries.

Consolidating its order book, RITES recently secured its highest-ever work order of three new rail line projects —Belgam-Dharwad via Kittur, Shimoga-Shikaripura-Ranebennur and Tumkur-Devangree via Chitradurga. It will also provide consultancy services to Bangladesh Railway for the construction of dual gauge railway line from Bogura to Shahid M. Mansur Ali station, Sirajganj, Bangladesh.

Ircon International Limited (IRCON)

Ircon International Limited (a Mini Ratna and Schedule 'A 'PSU), formally known as Indian Railway Construction Company Limited was incorporated on 28th April, 1976, mainly for the purpose of construction and development of Railway Infrastructure in India and abroad with the expertise from Indian Railways .

During its operation of 45 years the company has diversified and developed core competence in other areas also like Highways, Tunnels, Bridges, Flyovers, ROBs, Airport Hangar & Runways, Metro rail and Buildings (Industrial, Commercial & Residential complexes), EHV Transmission Line & Grid Sub-stations, Industrial Electrification, Signalling

and Telecom Systems etc. Considering its major share of business from projects abroad, its name was changed to "Ircon International Limited" w.e.f. 17th October, 1995.

IRCON has emerged as front ranking construction company of international repute having executed prestigious projects during the last 45 years of its operations. It has so far completed more than 390 infrastructure projects in India and 128 projects across the globe in more than 25 countries.

IRCON is actively engaged in infrastructure development in several Asian and African countries. IRCON's expertise coupled with its experience has helped in successful completion and commissioning of a mega project valuing over USD 1 billion in Malaysia, the largest ever Transportation project completed by any Indian company abroad. Other Key Railway Projects are under execution in Algeria, Bangladesh, Sri Lanka and Nepal.

As close neighbours, India shares a unique relationship of friendship and cooperation with Nepal and Bangladesh. Taking the bilateral relationship to new heights, IRCON is executing Rail connectivity projects to Nepal and Bangladesh. These projects are New Broad-Gauge Railway Line between Jogbani (India) and Biratnagar (Nepal) & Jayanagar (India) and Bardibas (Nepal) besides the work of design and construction of Akhaura (Bangladesh)-Agartala (India) rail link.

In India, IRCON has undertaken various prestigious projects, which are emblematic to the country's rise on global infrastructural map. The Company is involved in the biggest Railway construction project in Jammu & Kashmir. IRCON is also constructing a new Broad-Gauge railway line from Sivok in North Bengal to Rangpo in Sikkim to provide rail connectivity to Sikkim.

Among the other ongoing domestic projects, some of the key projects are :

- Civil and Track Works of DFCCIL in three packages between JNPT -Vaitarana, Vaitarana -Sachin and Sachin -Vadodara sections
- Construction of Railway lines of approx. 300 km length at an estimated cost of ₹5,000 crores in Chhattisgarh.
- Eight -lane Vadodara -Kim Expressway (from 323.000 to 355.000) Sanpa to Padra section of Vadodara Mumbai Expressway (in the State of Gujarat under NHDP Phase-VI)Phase IA -Package II.
- Survey, Feasibility study, detail design and construction of various identified rail connectivity projects of MCROREL.
- Kiul-Gaya Doubling Project (East Central Railway)
- Hajipur Bachwara Doubling Project (East Central Railway)
- Katni-Singrauli Doubling Project (West Central Railway)
- Katni Grade Separator By pass Line Project.
- Rampur Dumra - Tal - Rajendrapul Doubling including Ganga Bridge (East Central Railway)
- Gurgaon-Pataudi-Rewari Road Project.

Achievements of IRCON in the year 2020-21Overall:

- In the year 2020-21, IRCON has secured projects worth ₹4,157.08 crore. This includes two ROB projects by Western Railway, one PMC project by RLDA, one highway project, three S&T projects by Northern Railway and seven electrical projects.
- In the year 2020-21 IRCON has successfully executed following projects:
    1. Construction/ upgradation of rural roads including bridges in 5 districts (Garhwa, Gumla, Ranchi, Lohardaga and Simdega) in the state of Jharkhand.
    2. Six- Laning of Davanagere- Haveri (from Km. 260+000 to Km. 338+923) of NH-48 in the state of Karnataka
    3. Mathura-Kasganj-Kalyanpur Railway Electrification Project with Signalling for North Eastern Railway.
    4. Katni-Singrauli Railway Electrification work.
- IRCON is the only Indian PSU ranked among the Top 250 International Contractors 2020 (Only Indian PSU) by Engineering News Record (ENR), USA.
- Recently in February, 2021 for Vadodara Mumbai Expressway, a record of continuously laying of Pavement Quality Concrete covering an area of 24,970 square meters was started at 8:00 am on 1st February, 2021 and was completed by 8:00 am the next morning.
- SAP latest version S4HANA is under Implementation in IRCON to improve the overall performance and efficiency of the company.

Project Wise:

- Between Korichhapar to Dharamjaygarh Section (30 Km)-Engine rolling has been done on 31.12.2020 in connection with Chhattisgarh East Rail Corridor-I under SPV Chhattisgarh East Railway Limited.
- Track Linking between Gurda-Korichhapar (34 Km, double line) has been completed in March 2021.
- Till date, 8334.74 m of tunnelling has been done in the year 2020-21 and a total of 84.55 Km length has been completed in the section between Katra to Banihal.
- The major yard remodelling of Bachhwara yard in Sonepur Division of ECR has been commissioned on 2nd March, 2021 in connection with the doubling of Hajipur- Bachhwara section.This has eliminated the congestion of Barauni and Simaria (Mokama Bridge) and has increased the mobility of SEE division drastically.
- FOB-2 at Santragachi station was inaugurated on 19.02.2021 and opened it for passenger usage. This being 12.0 metre wide has facilitated faster dispersal of passengers from PF No 1 to PF no 6 at this terminal station.

- 16-units type-2, 8-units type-3 and 2 units, type-4 quarters completed in connection with new line of Agartala-Akhaura at Agartala Station in August 2020 and have been handed over to Railway for uses.
- In connection with doubling of Hajipur-Bachwara section, Shahpur Patoree-Sahdei Buzurg (12.5 km) linking and other works has already have been completed and it is ready to get commissioned except some minor finishing work.
- In Sivok-Rangpo Project, Tunnel mining of 4.5 km has been completed in 2020-21 against the target of 4.0 km.

Covid Appropriate Behaviour:

- For educating all officials, employees and contract staff across the IRCON pledge have been administered starting with the corporate office by CMD followed by all Projects team by PD and Project heads to grass route level.
- Special measures and massive education and awareness programmes through various medium/platforms have been launched to take the necessary precautions to contain the Covid-19 pandemic.
- All other necessary arrangements i.e. temperature measurement tools, masks and sanitizers etc. have been ensured at our Corporate Office and all of the field offices to carry out the works at full swing.

Financial Performance

In the year 2020-21, the Company has registered total income of ₹5,200 crore. The Profit Before tax achieved by the company is ₹574 crore and the Profit after Tax achieved is ₹405 crore. The Net Worth of the company is ₹4,406 crore.

Despite the headwinds faced by the economy due to the emergence of Covid-19, the Company's net profit for quarter ended 31st March ,2021 rose to ₹185.33 crore from ₹122.42 crore in the year ago period.

Centre for Railway Information Systems (CRIS)

The Centre for Railway Information Systems (CRIS) is an Autonomous Organization of the Ministry of Railways, with its headquarters in New Delhi and Regional Offices in Delhi, Kolkata, Mumbai, Secunderabad and Chennai. It develops and manages the IT systems of the Indian Railways, with terminals and counters spread across the country from Kargil to Kanyakumari, and from Tawang to Port Blair. Together with a team of IT professionals with rich practical experience, CRIS has successfully positioned itself at the vanguard of Indian Railways' digital transformation.

Achievements and Developments

CRIS is developing and managing IT applications in all areas of Railway working and has been focusing on integrating these applications to provide a unified IT platform for Indian Railways. The activities & developments during 2020 - 21 done by CRIS are given below.

Enhancement of e-Drishti - A dashboard for Indian Railways– The e-Drishti Portal was enhanced to display information relating to data collection, analysis and reporting of Face Covers, Hand Sanitizers and PPE kits produced by different divisions, zones and PUs Live CCTV feeds of cameras from Hospitals, Stations, Platform were provided a module for improvement in Good Sheds, ideas for Business Development etc. were developed, e-Drishti was integrated with DARPAN & PRAYAS platforms of Prime Minister's Office.



Transportation of Food Grain, NR

Freight Operations Information System (FOIS) - Freight Business Development Portal (FBD) was launched and was accessed by 2,500 to 3000 customers per day; in view of the pandemic, module developed for Monitoring of Oxygen trains; Monitoring of Essential Services, Shramik trains, Parcel Trains; integrated with MeitY, NITI Aayog; Implementation of Discount Schemes, RORO Services; in addition discount scheme Service Market at Rail Terminals market and Rail Sugam Mobile App; were provided; Dashboard bucket of SFOORTI application was enhanced with Loading/ Unloading Performance and Commodity Performance dashboards.

Computerized Control Office Application for Indian Railways (COA) - Web Based Centralized Control Office Application was launched. 52 integrations through Enterprise Service Bus involving various Applications were implemented.

Real-Time Train Information System for Indian Railways (RTIS) - Performance tuning & stabilization of RTIS Phase 1 system.

Safety Information Management System (SIMS) - Integration of SIMS accident reporting module with IRS application of MHA for pushing accident record to IRS/MHA server Integration of SIMS with ICMS application for asset failure and unusual incident and development of its MIS reports.

Crew Management System (CMS) - Random sampling of BA testing facilitated during Signing ON/OFF at CMS kiosk, Contactless Sign-ON/Sign-OFF through Mobile App (CHALAK DAL) with Geo fencing facility was released.

Coaching Crew Link Management Systems (CCLMS) - New version of Zero-base and suburban module of CCLMS was deployed on production server and commissioned in Divisions and Zones of 10 Zonal Railways of IR.

Software Aided Train Scheduling System (Timetabling Project) - During National Lockdown owing to COVID Pandemic Running of Special Trains(3000 MSPC/PSPC, 2,700 parcel and 7,000 Shramik trains); Zero Based Time Tabling: using scientifically calculated bare run times (BRT), instant comparison of pre-zbtt and post-zbtt statistics was tried out 3,000 profiles (MSPC/PSPC) were migrated to zero based time table, IT was integrated with FOIS to expedite the process of booking the parcel trains, and with RPF Security Management System (RSMS) for quick response to the distressed passengers travelling in trains.

Enhanced eTicketing System for Indian Railways - Launch of NGeT Website and mobile apps with new features to ease the user transaction flow and enhance user experience on Data sharing with E-Sampark; GSTIN tax

invoice for B2C type transactions; Optimization in availability enquiry to handle all class availability enquiry with journey planner.

Computerization of Refund Coaching - Necessary changes to enable Railway Users to access the application through Internet in view of Lockdown due to Covid-19, Necessary changes for full (100%) refund arising on account of train cancelled, passenger not allowed to travel or passenger did not turn up to travel due to COVID-19, O&M Estimate for 2020-21 & 2021-22.

Expansion of Hand held terminal project - Optimization of security and synchronization to eliminate the lag in chart loading; Enhancements and bug fixing as per the requirements from Railways.

Unreserved Ticketing System - Booking of UTS ticket for Shramik Special trains; Integration with HRMS for Booking of UTS ticket on ePass & ePTO issued to Railway's officials; Printing of encrypted QR code on ticket through thermal printer to enable contact less checking; Integration with NTES to show available trains in ATVM application.

Complaint Management System (COMS) - New Channel of Complaint Registration "CPGRAMS" added in the application; A home page designed and developed for Parcel/Freight inquiry for FOIS BD Portal; Head & Sub Heads added for registering complaints for Divyangjan; New UI/UX launched for RailMadad website; Web service for helpline- 139 had been modified for Parcel & Freight Facilitation complaints; SMS Gateway - New SMS alert had been introduced regarding COVID-19 for 1A, 2A and 3A passengers after chart preparation.

Computerization of TTE Lobbies at Interchange/major stations – The software was enhanced to further streamline sign on sign off TTEs only 3 hours before schedule departure of train and provision of sign on only at base/parent HQ station.

Web Enabling of Claims System - Necessary changes were made to enable Railway Users to access the application through Internet in view of Lockdown due to Covid-19.

Parcel Management System - PMS is currently installed at 84 stations. Purchase Order for implementation of PMS at 143 stations has been issued and is currently under implementation. Tender for proliferation of PMS at 523 stations was opened during the year. Total 750 parcel offices would thus be covered by PMS.

Track Management System (TMS) - New Application has been developed and implemented for entering track asset master details by construction organization authorities and thereafter online transferring the same to TMS open line application.

Land Mgt. Information System - Way leave easement rights Module (IR-RBCS) was launched on pan India basis. Provision was made for online payments through MERS portal provided in the respective Module.

CRS Sanction Management System - Module for CRS sanction of "Increase in Sectional Speed" had been developed and deployed; Module for CRS sanction of "Opening of New Line" was developed; Module was developed for CRS sanction of "Electrification of Line".

Traction Distribution Management System - Pan Successfully rolled out Unregulated OHE Module (18 Nos), PSI Module (20 Nos), RCC/SCADA Module (07 Nos), TPC Module (08 Nos), Tower Wagon Module (06 Nos) of TDMS Application on IR; Dashboard for monitoring of key performance indicators (KPIs) for OHE (8 KPIs), PSI (7 KPIs), RCC (5 KPIs), Tower Wagon (6 KPIs) had been Implemented for IR.

Integrated Payroll and Accounting System (IPAS) - Bill Passing module of IPAS was implemented at ICF Chennai and RWF Bangalore Production Units; ePPO module had been implemented at all the zones of Indian Railways; Integration with GeM and IMMS for passing of Service Contract bills had been implemented in IR.

Traffic Accounts Management System - Development of module for correction of opening balance of Goods balance Sheet (GBS) and Coaching balance Sheet (CBS); Integration with IPAS for JV generation.

Goods & Services Tax (GST) Module - Reconciliation of ₹1,440 Crore ITC by IR through reconciliation of Purchase invoices (year 2019-20); Minimal rejections by GSTN and timely filing of monthly (GSTR-1 & GSTR-3B) & annual (GSTR-9) GST Returns; Dashboard for GST portal and Mobile App 6. RFP for CRIS to become IR GSP

Human Resources Management System - Development of e-Pass, Settlement, Office Order, ESS, APAR, PF Loan and Grievance modules; Integration process with IPAS for Settlement, Integration with PRS and NGeT for e-Pass; HRMS main dashboard was modified to show figures on current status basis.

E-Procurement System - New modules for Single Stage EPC tendering Consignee Depot; Online tender decision; Trade Group-wise registration of vendors; User/Consignee Depot Module (UDM) was developed; New e-Report "COVID-19 Emergency Response and Health System Strengthening Project" was developed; New APIs was developed for integration of iMMS/IREPS with GeM. Consortium of RITES and CRIS was empanelled for a period of three years on 2nd December, 2020.

Decision Support System for Electric loco maintenance & Operational management (SLAM) - SLAM application version 3.0 successfully was released; Integration of SLAM with IREPS for non-stock items and with FOIS for Loco Shed-in, Loco Shed-out and Loco Schedule updation was successfully achieved.

Freight Maintenance Management module - Most of Yard & depot module's functionalities were provided on mobile platform. WeighBridge (WB) module for reporting of WB's details/schedules/AMC& status reporting of freight yard/depots provided. Yard's performance, detachments & GIS mapping of Yards, WB's schedules shared with e-Drishti portal. Integration with WISE for wagon details sync & with FOIS on rake/wagon/BPC details exchange.

Automated rolling stock track & trace system using radio frequency identification (RFID) - Specifications of portable RFID reader were framed and released; Guidelines for fixing of RFID tags on coaches and wagons were framed and released.



Transportation through e commerce WR

Rolling Stock Sanctions Management System (ROSMAS) - Created the new web-application called the Rolling Stock Sanctions Management System (ROSMAS) or GatiPravah for automating the process of issue of speed certificates. This application was developed for RDSO and is based on completely open source technologies.

Workshop Management Information System Phase 2 - WISE application was Rolled-out to 34 IR Workshops. WISE was integrated with IMMS, IPAS, CMM, FMM applications.

Indian Railway Finance Corporation Limited (IRFC)

Set up as a public limited company in December, 1986 with the sole objective of raising money from the market to part-finance the plan outlay of Ministry of Railways and for meeting their development needs, IRFC has been successfully meeting the borrowing targets set for it year after year. Funds are raised through issue of bonds, 54EC Capital Gain Bonds, Term loans from banks/financial institutions and through external commercial borrowings etc. The Department of Public Enterprises has consistently rated the company as "Excellent" for its performance vis-à-vis the parameters set out in the MOU.

The Company has leased rolling stock assets worth ₹2,56,149 crore to the Railways upto 31st March, 2021. Rolling Stock assets worth about ₹28,561 crore were financed during 2020-21. Funding has been made by IRFC in locomotives, wagons and coaches. The acquisition has helped in increasing traffic output and revenue growth in Indian Railways over the years. IRFC has also funded Railway projects through Institutional Finance to the extent of ₹1,15,495 crore till 31st March, 2021. Besides, IRFC has funded National projects worth ₹7,578.70 crore and Railway Projects under EBR-S worth ₹50,551 crore upto 31st March, 2021.

Rolling Stock assets funded by IRFC are leased to Ministry of Railways. IRFC has successfully brought down lease rentals from 17.5% p.a. in 1996-97 to 10.5734% p.a. in 2020-21 which compares favorably with the borrowing of the Government of India. The Ministry has been making lease payments to IRFC regularly.

The company has also disbursed loans amounting to ₹7,165 crore to Rail Vikash Nigam Ltd. (RVNL) till the end of fiscal year 2020-21 for development of Railway Projects.

IRFC has consistent profit earning track record. It has so far paid ₹5,242.69 crore as dividend to the Government. Based on its strong financial strength and credit standing, it has got the highest possible rating from three prominent domestic Credit Rating Agencies and investment rating at par with 'Sovereign' from four major International Credit Ratings Agencies.

Further, during 2020-21, IRFC came out with its maiden IPO and its shares were listed on stock exchange (BSE & NSE) on 29th January, 2021.

Konkan Railway Corporation Limited (KRCL)

The Company was established in the year 1990 with equity participation by Ministry of Railways (51%), Maharashtra (22%), Karnataka (15%), Kerala (6%) and Goa (6%) for the purpose of construction and operation of Railway along the Western Coast of India.

Financial Performance:-

There has been substantial financial impact in the Year 2020-21 due to the COVID- 19 Pandemic.

Key Financial Highlights

(₹ In crore)

Particulars	2019-20	2020-21
Total Income	2,734.80	**1,657.29**
Operating Margin	197.72	**(-)164.75**
Profit After Tax	3.84	**(-) 366.41**
Net Worth	1,919.58	**1,570.18**

Train Operating Performance:

During the year, 45 pairs of Mail/Express trains and 08 pairs of passenger trains on average per day were scheduled to run over Konkan Railway route. In wake of COVID-19 Pandemic, as per COVID-19 restrictions and guideline issued by the Government of India, regular passenger train operation remained suspended during most of the year. During the initial period of lock down Shramik special and Parcel trains were run. A total of 94 Nos. of Shramik special trains were run for movement of stranded labourers of various States on Konkan Railway route. Out of which, 80 Nos. of trains originated from KRCL Stations. A total of 48 Nos. of Parcel trains were run on KRCL route during the year in co-ordination with Zonal Railways to facilitate movements of essential commodities, equipment, medicines, perishable items etc. Out of which 18Nos. of Parcel trains originated from KRCL Stations. Further 4,427 Nos. of Mail Express/ Passenger special trains were run with gradual increase in frequency during the year. During Ganpati festival, a total of 194 Nos. of special trains were operated. The passenger revenue during the financial year was ₹200.70 crore registering a decrease of 71% over the corresponding revenue of ₹680.78 crore of previous year.

On the freight front during the year 2020-21, on an average, 12 freight trains were run per day including Roll on -Roll off (RORO) services. The freight revenue during the financial year was ₹387.94 crore, which is 13% less than that of previous year's ₹445.94 crore.

Project Performance:

a. **Udhampur-Srinagar-Baramula Rail Link (USBRL Project, J&K):** So far, KRCL has completed 40.2 km tunnel excavation, out of total 45.24 km. 5.078 km of tunnel excavation, 4.66 km of Tunnel Lining and 11001 MT of launching have been completed during the year. A turnover of ₹827crore (excluding GST) was achieved from the Project during the year, as compared to ₹1,281 crore (excluding GST) of 2019-20. There was a reduction of 35.44% due to stoppage of work & reduction of work due to COVID-19 Pandemic.

b. **Anakkampoyil - Kalladi- Meppadi Tunnel Road Project:** Government of Kerala has assigned KRCL, as Special Purpose

Vehicle (SPV), the execution of the Anakkampoyil- Kalladi- Meppadi Tunnel Road Project. A Tripartite Agreement has been signed between Konkan Railway, Public Works (H) Department, Govt. of Kerala and Kerala Infrastructure Investment Fund Board (KIIFB) to implement the project. The scope of work is preparation of Detailed Project Report and construction of Two-Lane Road Tunnel including Approach roads and River Bridge at a tentative cost of ₹658 crore FLS for the work has been completed. Preparation of DPR is in progress.

c. **Route Electrification of Konkan Railway Route:** CRS sanction has been obtained for introduction of commercial services for carriage of goods and passenger traffic on 25kV AC traction in Bijoor - Thokur section (108.858 RKM), Bijoor-Karwar section (131.74 RKM) and Roha-Ratnagiri section (204.704 RKM). Works are in progress in section between Karwar and Ratnagiri which is likely to be completed by December, 2021.

RailTel Corporation of India Limited (RailTel)

RailTel Corporation of India Ltd. (Mini Ratna Category-1 CPSU), was formed on 26th September 2000 to facilitate Railways in expeditiously modernizing train operation and safety systems by providing state of art communication network infrastructure to Indian Railways through an internal entity. Formed with an authorized capital of ₹1,000 crore and an exclusive Right of Way (ROW) of the 67,956 RKM of Indian Railways network, the PSU started functioning with a hand full of talented, experienced and motivated Signalling & Telecommunication engineers of Indian Railways.

Over the years, it has grown from a small entity to one of the largest secure Neutral Telecom Services Provider in the country and an ICT service provider. It has two UPTIME, USA certified Tier-III Data centres and MietY empanelled Railcloud. The biggest USP of RailTel is its ownership of a Pan-India 60000+ RKM of Optic fibre network, with access network of 18000 RKM (appx.) including North Eastern States covering all important towns & cities and several rural areas. RailTel occupies a proud place with its unparalleled networking high bandwidth backbone segment. The network has the ability to provide mission critical customized connectivity platform for enhanced efficiency and growth. Presently this network is available at more than 800 cities in multiple rings of STM-64/16.

RailTel Network has capability of Service delivery from 2mbps to 800Gbps links and comprises of various technologies viz. Next Generation Network (NGN), Synchronous Digital Hierarchy (SDH), Packet Transport Network (PTN), Dense Wavelength Division Multiplexing (DWDM), Internet Protocol- Multi Protocol Label Switching (IP-MPLS) which are maintained round the clock by Network Operation Centres and trained field manpower. All the equipments provided on the network are of State-of-the-Art Technology and are as per International Telecom Standards.

The company has diversified into many fields offering a bundle of services viz. Internet Bandwidth, Leased lines, Tower Co-location, HD Video Conferencing service, MPLS-VPN services, Data centre services such as Co-location Hosting, Managed Services, Cloud computing Services, Data

recovery services, e-office implementation, HMIS (Hospital Management Information System), Security Operations Centre as a Service (SOCaaS) & IT enabled services etc. to private and Government clients.

Performance during last three years

a. In the last 3 years, the Company has consistently earned every year more than ₹179 crore profit before tax.

b. The Company pays revenue share to Railways and license fee to DoT from its income. During the last three years, such revenue share and license fee paid are as under:

(₹ in crore)

	2018-19	2019-20	2020-21
Revenue share to Railways	28.43	31.81	**30.68**
Revenue share to DoT	45.21	47.93	**56.56**

Focus Areas

Hospital Management Information System (HMIS)

RailTel has been entrusted with the work of Hospital Management Information System over 125 Railway Hospitals and 650 Health units/ polyclinics of IR. This is integrated clinical information system for improved hospital administration and patient health care for providing an accurate, electronically stored medical record.

Total 156 Hospitals/Health units of Zonal Railways of IR are live on HMIS. The features of the software include customizing clinical data according to the departments and laboratories, multi hospital feature that provide cross consultation, seamless interface with medical and other equipments. The patients will have the benefit of accessing all their medical records on their mobile device.

To minimize footfall at Railway hospitals/ Health units for generic treatments, a teleconsultation app and HMIS beneficiary app has been developed and integrated with the (HMIS). The beneficiary app enables the medical beneficiaries to access their medical record at a single point. RailTel has also developed a Covid portal which captures and maintains all data related to covid patients (testing, line of treatment, current status etc.) for better monitoring of treatment.

Station Wi-Fi

RailTel is transforming Railway stations into Digital hubs by providing public Wi-Fi at all railway stations. 6,052 stations are live with RailTel's RailWire Wi-Fi including 15 Station of Kashmir valley. This is one of the largest and fastest public Wi-Fi networks of the world. The response to the service has been phenomenal, with around 2.9 crore user logins in a month and around 8,200 TB of aggregated data consumption pre-covid. Passengers use this facility for streaming High Definition (HD) Videos, download of movies, songs, game, and do their office work online. Out of

the stations commissioned 70% are in rural areas which are bringing free high-speed Wi-Fi services in the vicinity of a major chunk of rural population. It is helping in bridging the urban rural divide by providing the rural masses with access to high-speed free Wi-Fi which they can use for making digital payments, access to e-gov services, knowing the weather conditions and learning new vocational and skills. Company has now introduced paid Wi-fi service at a nominal charge for Rail users looking for high speed after initial 30 mins of free usage. Utilizing POPs at rural stations, it proposes to extend connectivity to villages and the Wi-fi infrastructure will also be used to provide access under PM WANI project.

Security Operation Centre

With world going digital, it is becoming increasingly important to safeguard your data from cyber security threats. To provide a centralized and consolidated cyber security solution to organizations, company has set up a Security Operation Centre (SoC) at Gurugram. It provides onsite and offsite cyber security incident prevention and security event monitoring services.

RailTel's Security Operations Centre as a Service (SOCaaS) proactively addresses the increasing threat to Data Security with detection and response capabilities. The services provided through SOC are Security information and event management solutions, Endpoint detection and response, which provides host level telemetry for both near real-time as well as forensic investigation, Network traffic analysis used to investigate alerts and obtain additional context about suspicious activity in the network, Packet capture for forensics, Sandbox for malware analytics, Vulnerability assessment tools, Web application and network firewalls and Auto ticketing tool.

E-office in Indian Railways

RailTel started implementation of e-office over IR to bring more efficient, effective and transparent government transactions and processes. e-Office is a Cloud Enabled Software Application developed by NIC, hosted at RailTel Tier-III Certified Data Centre at Secunderabad with Disaster recovery at Gurugram. e-Office has been implemented in all 216 Units of Indian Railways. As on date, more than 1.3+ lakh users of Indian Railways are using e-Office Application. E-office has proven to be boon in a crisis time and part of Railway workforce was able to WORK FROM HOME, which would have been impossible in case of manual filing system. Company has also provided this service to other PSUs such as DFCCIL, IRCON, RVNL, IRCTC and CWC etc. It has also created Virtual Private Network for 13,163 users of Indian Railways.

Content on Demand (COD)

RailTel will be providing the Content on Demand service to passengers in trains by preloading multilingual content (Movies, Music Videos, General Entertainment, Lifestyle etc) on media servers installed in trains. With COD, passengers will be able to enjoy uninterrupted free/ Subscription based high Quality buffer free entertainment streaming service on their personal devices during their train journey despite unstable mobile network in a moving train. CoD platform will also provide e-commerce/m-commerce services in

domains of travel bookings (cab, bus, train) etc. and innovative solutions in digital marketing. This service will be provided on 8,731 trains including 5,728 Suburban Trains. The service will not only improve overall passenger experience but at the same time will increase the non-fare revenue through multiple monetization models. The digital entertainment service provider has been finalised and Pilot implementation in all 9 Rakes of Mumbai Rajdhani / August Kranti rake and in AC suburban rake over Western Railway and Chennai Express on Central Railway is underway.

Railway Display Network (RDN)

This is an initiative to provide contextually rich and relevant information to Rail users along with public awareness messages & entertainment content and use the latest digital technologies to unlock the true advertisement potential of the footfalls in stations. RDN is planned to be built and operated on a self-sustainable model.

The display screens will be provided at the station buildings, entrance, concourse, platforms, waiting rooms and foot-over-bridges. Various passenger related information from most appropriate sources like train charting server, NTES (National Train Enquiry System), PRS (Passenger Reservation System)etc shall be provided. The Railway display network with the cloud analytics will provide the ability to generate rich analytics and context to provide Railway users accurate and relevant information to improve the Railway travel experience. Project is to be implemented at 2000 stations (all A1,A,B,C & D category stations).

HD Video Conference Service

RailTel's offers an end-to-end, full high-definition video conferencing service that gives users a virtual, face-to-face meeting experience. Before adoption of Video Conference Service, Indian Railways were spending huge amount of money/man hours for meetings /events, now number of travels for meetings/events has dropped drastically saving man hour, travel & lodging expenses. This has also helped in saving significant amount of carbon footprint.

The service now serves 602 elite users across 50 plus customers. The success is a result of the significant ease of use & 24X7 customer responsiveness of the RailTel team vis-a-vis the challenges faced with other service providers. Post covid there has been exponential growth in the usage of video conferencing services provided by RailTel.

The services are offered on a monthly subscription basis requiring no investment into CAPEX by the customer while obviating the recurring need for investment due to technology obsolescence.

Video Surveillance System (VSS)

RailTel is also executing provision of IP camera-based Video Surveillance System at 5,102 railway stations and 14,387 premium train coaches and EMU coaches. This will go a long way in enhancing the safety and security of the passengers travelling over the IR network. RailTel is also integrating the various standalone video surveillance system installed at various stations by respective zonal railways so that the video recordings

can be seen and monitored at the Divisional and Zonal head quarter level centrally. Under the project, all cameras to be provided in station premises will be networked on optical fiber cable and brought to a centralized place (CCTV control room) from where they shall be viewed on multiple LCD monitors by Railways security personnel. The system shall provide high capacity storage devices at stations to store recording of CCTV footage for a defined period. Work has been completed at 287 stations under Phase-1 and 54 stations provided for Migrant special by RailTel during Lockdown.

RailWire –Retail Broadband Service

It is a collaborative model in partnership with local entrepreneurs & local cable operators for providing Last Mile Connectivity. There are more than 4.08 lakh + RailWire broadband customers in the SMEs/household segment. Due to high SLAs & last mile connectivity, this is suitable for providing rural connectivity at Gram Panchayat/village levels as well as for connecting banks and other Government institutions. There has been growth of 3.3 times in subscribers since April, 2020.

Data Center & RailCloud

RailTel has two UPTIME (USA) certified Tier-III Data Centers at Secunderabad and Gurugram & a MeitYEmpanelled "RailCloud". Company offers a host of Data Centre & Cloud services like Colocation Services, Managed services, Cloud Computing, Managed e-Office, Aadhaar Authentication Services, Dedicated Solutions etc, from these two state-of-the-Art Data Centres with combined total gross capacity of more than 6000 Sq.ft Server Farm area.

RailTel cloud services are backed by SLA of 99.95% and co-location services by SLA's of 99.983% which is one of the best by industry standard. Besides Indian Railways, a number of Government customers trust RailTel for the Data Centre services.

Modern Train Control System (MTCS)

RailTel has been entrusted with the work of Modern Train Control System for modernizing train control system in 4 sections of 4 different Zones over 640 Kms. The MTCS project is one of the most ambitious modernization projects of Indian Railways which envisages upgradation of signalling system at par with international standards. This is now planned to be implemented using indigenously developed Train Collision Avoidance System (TCAS) technology on LTE (Long Term Evolution) communication backbone.

This will help enhance safety drastically, reduce congestion in rail network and increase line capacity, improving punctuality as it can eliminate train delays due to automated signalling and real time information of train movements, eliminating the need for manual data logging. It will also help to increase average speed of trains due to automation of train operations.

Modernization of Signaling System

RailTel Enterprises ltd, a wholly owned subsidiary of RailTel Corporation of India Ltd., has been awarded the work of replacement of old mechanical signalling equipment with state-of the-art electronic interlocking system at 26

stations of Northern Railway. The existing mechanical signalling systems are using lever frames to both lower the signal and change the tracks. The new Electronic Interlocking signalling system will now enable lowering the signal and changing of tracks by click of a mouse and will enhance safety and improve efficiency of train operation. Three stations Pehowa Road, Kalayat and Kaithal have been commissioned. The Company is fully geared to complete the project for modernizing signalling system at remaining 23 stations.

ICT Advantage to Coal, Aviation, Defence, Banking & Education Sector

RailTel is one of the pioneers in providing MPLS- VPN, Point to Point connectivity & Data Centre services to companies of Coal, Aviation, Defence, Banking & Education sector. RailTel is having total orders of ₹438 crore from Defence Sector and its PSUs for various projects and revenue from Defence Sector grew by 51% in the year 2020-21 over the year 2019-20. The Company is also focusing on Coal sector and got orders worth ₹519 crore from all Coal India Subsidiaries for various projects.

RailTel is serving public sectors and private sector banks by providing Virtual Private Network connectivity and point to point connectivity to around 2,417 Branches of various banks and revenue from Banking Sector grew by 73% in the year 2020-21 over 2019-20.

Further, various solutions are offered to various Government & Private educational institution and universities viz 732 institutions of Higher learning including IITs, IIMs, Medical colleges etc. connected on RailTel network as part of NKN, Campus Wi-Fi provided at 26 Central Universities, Connectivity to 1,295 Govt. schools and Education offices in Kerala, Connectivity & Bandwidth to other 109 Universities and Schools.

RailTel is also supporting various state governments in their State Wide Area Network (SWAN).

IOT Project

RailTel is also executing project of making available IOT based Data from various civil engineering assets, Drone recording of track and CCTV camera feed from projects sites on a common Indian Railway Telemetry application Platform. It has deployed IoT Based Condition Monitoring and Predictive Maintenance system for Signalling assets as at one station on South Central Railway on trial.

PM WANI

PM-WANI is ambitious program to connect all silo of Wi-Fi networks for ease of use and proliferate broadband usage for masses. RailTel being the most widespread integrated Wi-Fi network of country supporting the largest footfall of Wi-Fi users, will play an anchor role in entire PM-WANI eco-system, by continuous engagement with regulatory bodies and industry players. It has already been registered as Public Data Office Aggregator (PDOA) and has obtained provisional PDOA certificate from CDOT. The Payment channel integration is already completed with payment aggregators.

One of the key features of PMWANI is to facilitate ease of use and seamless roaming for Wi-Fi users. Interop Testing to check seamless roaming

from one PDOA network to other PDOA, has been done with CDOT. The company will also be launching a PM WANI App shortly.

Village Connectivity

RailTel is working in direction for providing Village connectivity from RailTel POPs at rural stations under viability gap funding. A proposal has been submitted by RailTel to DOT to connect villages in Jharkhand and Maharashtra which is under consideration.

Indian Railway Catering And Tourism Corporation Limited (IRCTC)

Indian Railway Catering and Tourism Corporation Limited (IRCTC), was incorporated on 27th September,1999 under the Companies Act, 1956 as an extended arm of the Indian Railways to upgrade, professionalize and manage the catering and hospitality services at stations, on trains and other locations and to promote domestic and international tourism through development of budget hotels, special tour packages, information and commercial publicity and global reservation systems. The shares of IRCTC were listed on BSE limited (BSE) and National Stock Exchange of India Ltd. (NSE) on 14th October 2019. Post IPO, shareholding of the Govenment of India (GOI) reduced from 100% to 87.40 % of the paid up equity share capital of the company.

During the year 2020-21, in accordance with the directives of the Department of Investment and Public Asset Management (DIPAM), Ministry of Finance, 20% of paid up equity capital in the company was divested through "Offer for sale (OFS) of shares by the Promoters through stock exchanges" method. As a result of the aforesaid offer for sale, the Government of India's holding in IRCTC has further reduced from 87.4% to 67.4 % of the paid up equity share capital of company.

The financial highlights of the year 2020-21 as compared with the year 2019-20 are as below:

(₹ in crore)

S. No.	Particulars	2019-20	2020-21
1	Total Income	2,342.41	**868.69**
2	Total Expenditure	1,563.98	**592.76**
3	Profit Before Tax	729.58	**260.89**
4	Provision for Tax	216.48	**70.99**
5	Profit After Tax	513.11	**189.90**
6	Net worth	1,313.82	**1,466.95**

Businesses of IRCTC

The businesses of IRCTC are broadly classified under four segments:

1. Catering and Hospitality
2. Travel and Tourism
3. Internet Ticketing
4. Packaged Drinking Water (Rail Neer)

IRCTC's New Business Initiatives:-

- IRCTC has introduced a strikingly new feature of instant refund to IRCTC Website / Mobile App users using "IRCTC iPay". IRCTC has now equipped its payment gateway "i-Pay" with "AutoPay" feature. In this feature, a user has to allow for debit to his UPI bank account / other payment instrument through a mandate facility which creates a lien on his payment instrument.
- IRCTC recently launched online Bus booking services through its tourism portal that was dedicated to the service of nation on 29th January, 2021. Through the new microsite **www.bus.irctc.co.in**, customers will now be able to book their choice of buses with seat selection sitting in the comfort of their homes. IRCTC has tied up with more than 50,000 state road transport as well as private bus operators covering 22 states and 3 union territories for proving the online bus booking services to the customers.
- **Golden Chariot Train** owned by Karnataka Tourism was taken over by IRCTC in January, 2020 for operations, marketing and maintenance. IRCTC successfully completed two tours of the luxury train in March, 2021.
- IRCTC is now offering its successful Artificial Intelligence (AI) based solutions to various government organizations and corporate sectors across various disciplines and businesses for their usage and larger benefit to the consumers. This will enable those organizations to answer/ interact general queries of the customers and garner good will too.

Catering & Hospitality:

During the year, IRCTC managed on-board catering services on 430 special trains during 2020-21 out of which 272 trains having pantry cars and 158 having provision of TSV services.

E-catering services are expanding and available at 358 stations. On an average 21,571 meals per day were booked through e-catering in 2019-20.

E-catering services are expanding and available at 200+ stations and more stations are being added depending upon Central/State Govt. guidelines.

Highest meals booked on 17th July, 2021 was 20,000+ which was equivalent to pre Covid-19 level. 20 B2C partners such as Make my Trip, Paytm, Phonepe, Google Pay, Ixigo, Goibibo, Railyatri etc. have been roped in to expand the reach of e-Catering services. The revenue IRCTC from Catering in 2020-21 was clocked at ₹223.41 crore.

Travel and Tourism

IRCTC is one of the leading travel and tourism companies in the market. The various tourism products of IRCTC includes Luxury Train Tours like Maharajas' Express, Buddhist Circuit Special Train, Bharat Darshan Special Tourist Trains, Rail Tour Packages, International and Domestic Air packages, Land Tour Packages, Hotel booking, Car Rental, Customized and LTC tours and Event Management etc.

IRCTC have its exclusive tourism portal, www.irctctourism.com for showcasing and booking of various tourism products in a single space. The revenue from Tourism segment in 2020-21was registered at ₹53.85 crore (approx.)

Due to COVID- 19 pandemic spread across World, the tourism and hospitality industry has been hampered badly. But still with hard work, marketing activities and planning along with support of Indian Railways, IRCTC was able to launch and operate the Golden Chariot Luxury Train, Pilgrim Special Tourist Trains and also integrated online bus booking in its travel and tourism portal.

Due to the severe impact of the pandemic on the tourism business of IRCTC, the income from Travel and Tourism Business of the company has observed drastic decrease of 86.79% from ₹392.14 crore in 2019- 20 (including state special trains) to ₹51.81 crore in 2020-21.

Achievements/Highlights of Tourism Department

1. **Standard Operation procedure during COVID-19:** Issuance and implementation of Standard Operating Procedure (SOP) based on the guidelines issued by MHA & MHFW on preventive measures for Tourist Trains / Tours to contain spread of COVID-19 & dealing with emergencies.

2. **Bharat Darshan Tourist Trains:** IRCTC has operated total 21 Bharat Darshan/ Aastha Circuit Tourist Trains in the year 2020-21 and catered to 13,312 tourists.

   Domestic Air Packages: IRCTC has operated total 70 Domestic Air packages with 1,419 passengers in the year 2020-21.

   Event Management: IRCTC operated one day cruise event tour at Hooghly for M/s Braithwaite with lunch and live music band on 30th January' 2021 catering to 88 guests.

   Saloon Cars: During the year 2020- 21, IRCTC has operated 29 Saloon Cars across India and 1st Saloon Car was operated ex-Mumbai to Patna on 13.06.2020.

New Initiatives of Tourism Department

1. **Pilgrim Special Trains:** In the year 2020-21, IRCTC operated the first Pilgrim Tourist Train Ex Jalandhar from 27.01.2021 to 03.02.2021, covering tourist destinations like Ujjain – Ahmedabad – Somnath - Dwarka with 632 passengers. IRCTC has operated 6 Pilgrim circuit tours and provided services to 2,426 passengers in the year 2020-21.

2. **Golden Chariot:** IRCTC has taken over the operations, marketing and maintenance of Golden Chariot Train from Karnataka State Tourism Development Corporation (KSTDC). During the year 2020-21, IRCTC has operated 2 trips of Golden Chariot and provided services to 55 passengers, whereas in previous year the company was not able to operate any trip due to onset of COVID-19 pandemic.

3. **Deluxe Tourist Train:** IRCTC has been working to increase the utilization of Buddhist Special Train rake to operate different tourist circuits, therefore, launched deluxe tourist trains. In the year 2020-21, IRCTC has operated 1 trip of Deluxe tourist train covering Jaisalmer and Jodhpur carrying 84 passengers.

Internet Ticketing

Online E-ticketing accounts for 79.63% of reserved tickets in 2020-21 on Indian Railways. On an average, more than 4.77 lakh tickets were sold daily through IRCTC's website and Mobile App during the year 2020-21. The site offers round the clock ticket booking services except for 35 minutes from 23:45 hrs to 00:20 hrs.

Year	2018-19	2019-20	2020-21
No. of E-Tickets Booked (in Lakhs)	2,842	3,019	**1,740**
No. of Passengers Booked E-tickets (in Lakhs)	4,950	5,230	**3,053**
E-ticketing Revenue Collection (in crores)	32,070	34,055	**17,762**

Packaged Drinking Water (Rail Neer) :

As on 31.03.2021, IRCTC has fourteen operational Rail Neer Package Drinking water plants set up in Delhi, Patna, Palur, Ambernath, Amethi, Parassala, Bilaspur, Sanand, Hapur, Mandideep, Nagpur, Jagiroad, Jabalpur and Sankrail of which the plant at Amethi, Parassala, Sanand, Hapur, Mandideep, Nagpur, Jagiroad, Jabalpur and Sankrail are under Public Private Partnership mode. The total Production capacity of above fourteen plants is 14.08 lakh litres per day.

A New Rail Neer Plant with production capacity of 72,000 litres per day has been set up at Mehatpur, Dist. Una (Himachal Pradesh).

The revenue from Railneer segment in 2020-21 was registered at ₹57.24 crore (approx.).

Pipavav Railway Corporation Limited (PRCL)

Pipavav Railway Corporation Limited (PRCL), the flagship Joint Venture Company of Ministry of Railways and Gujarat Pipavav Port Limited (GPPL) was formed to execute the Surendranagar – Rajula – Pipavav Port (APM Terminals, Pipavav) gauge conversion & new line project. This is the first railway infrastructure project executed through private sector participation. PRCL has concessionaire rights to construct, operate and maintain this project line for 33 years. PRCL has been given the status of a non-Government Railway Administration enumerated in The Railways Act, 1989.

PRCL has permission to run container trains on rail corridors serving the Ports of Pipavav, Mundra, Chennai, Ennore, Vizag and Kochi and their hinterlands (in its capacity as a Container Train Operator– Category – III).

The comparative figures of 2019-20 and 2020-21 are: -

	2019 – 20	2020 – 21
Number of single stack Container trains	2,109	**2,443**
Number of Double Stack containers trains	2,073	**1,764**
Total container	4,182	**4,207**
Number of Bulk trains	618	**906**
Number of empty trains run	536	**754**
Total number of trains run	5,336	**5,867**
Traffic volume (in Million Tonnes)	8.14	**7.72**
TEU's loading	3,26,812	**2,79,158**
Gross Apportioned freight earnings (₹ in crore)	229.65	**219.79**
Net Profit (₹ in crore)	82.15	**26.05**
Net Worth as per audited financial statements (₹in crore)	641.12	**657.77**
Number of passenger trains	19 pairs**	**19 pairs****

** includes 9 mail / express trains, which are running weekly and 9 mail / express / passenger trains run daily and 1 mail/express train run Monday-Saturday.

- PRCL will also get the benefit (being one of the feeder routes) of the dedicated freight corridor and derive benefits of double stack container trains, which have been introduced between APM Terminals, Pipavav and various destinations.
- PRCL had earlier made a lot of efforts to explore movement of Ford cars from Sanand area to Pipavav port and had identified development of car loading facilities at Charodi station for Pipavav port in December, 2020.
- LPG siding at Pipavav port was commissioned in December, 2020 and first rake was loaded on 09.01.2021.
- For providing seamless connectivity to Western DFC, PRCL has decided to electrify its entire route from Surendranagar to Pipavav station. The Compete project of Electrification of Surendranagar – pipavav has been entrusted to CORE (Central Organization for Railway Electrification). The electrified portion from Surendarnagar – Botad is in operation from 10.06.2020 and daily electric goods trains have commenced in this section of Bhavnagar division. Daily electric trains have commenced in Botad-PPVS section from 03.03.2021. The total estimated cost of the work is ₹289.47 crore.

Rail Vikas Nigam Limited (RVNL)

Rail Vikas Nigam Limited (BSE|NSE: RVNL) is a Category-I Mini-ratna CPSE under the Ministry of Railways. It was incorporated in 2003 to meet the infrastructure deficit in the country and for implementation of projects on a fast-track basis. RVNL works as the executing arm of the Ministry of Railways for construction and transportation infrastructure development.

The organization undertakes project execution from concept to commissioning and creates project specific SPVs for raising EBRs. RVNL's mandate also includes mobilization of extra budgetary resources (EBRs) through a mix of equity and debts from banks, financial institutions, and multilateral agencies like Asian Development Bank (ADB).

Business Performance

Projects Completed upto March, 2021

S. No	Plan Heads	Completed (Km)	No. of Projects
1	New Line (NL)	455.55	4
2	Gauge Conversion (GC)	2,040.20	8
3	Doubling (DL)	4,264.11	44
4	Railway Electrification (RE)	6,309.93	25
5	Metropolitan Transport Project (MTP)	46.14	
	Total	**13,145.93**	**81**
6	RE as part of Doubling/GC/NL (KM)	3,033.11	
7	Workshop Projects (Nos)		10 No.
8.	Cable-Stayed Bridge (no.)		1 No.
9	Others		9 No.
	Total projects fully completed		**101**

* RVNL contributed more than 37% of doubling and more than 28% of electrification out of the total projects commissioned by Indian Railways in the year 2020-21.

Financial Performance

RVNL has generated revenue of ₹75,494.41 crore for Indian Railways without any investment from the Ministry upto 31.03.2021. The Company has an equity contribution of ₹1,074.42 crore in the 6 SPVs(4 operational) at a total project cost of ₹8,916 crore.

Significant Project Achievements in 2020-21

1. The Haridaspur-Paradip New Rail line, commissioned on 30.07.2021, was constituted as a new SPV named Haridaspur Paradip Railway Company Limited (HPRCL). During the year 2020-21, this Company transported around 3,064 rakes, including a record 688 rakes loaded in March, 2021. The rail link between Haridaspur and Paradip Port has shortened the distance between the mineral rich and industrial belt of Odisha with the Paradip port by 40km approx, bringing down freight costs for rail-customers.
2. Commissioning of 69km of doubling of railway line between Uppaluru-Gudivada-Moturu and Gudivada-Machilipatnam in One-Go on 22.10.2020. This new line will catalyze the economy of the Central Coastal Belt of Andhra Pradesh and the project will pave way for a reliable alternative rail route in the cyclone-prone east coast region in lieu of the main line between Vijayawada and Visakhapatnam.

3. Commissioning of Noapara-Dakshineswar section of the Kolkata Metro Railway Extension Project on 22.02.2021. The new section has eased intracity & intercity commute for Kolkata. Around 50,000 daily commuters from Howrah, Hooghly and North 24 Parganas are benefiting from this north-south metro extension.

4. Commissioning of Rail Coach Factory at Latur also known as Marathwada Rail Coach Factory on 25.12.2020. This state-of-the-art factory was set up and commissioned in just 02 years by RVNL to manufacture self-propelled trains for Indian Railways.

5. Commissioning of electrification of Villupuram-Mayiladuthurai-Thanjavur & Mayiladuthurai-Thiruvarur lines on 14.02.2021. By eliminating traction change, this project has enhanced traffic efficiency on the Tiruchirapalli-Villupuram-Chennai main-line and improved fuel-saving, reducing carbon-footprints.

6. Two strategically important projects for capacity augmentation in the heartland of India, namely Bhopal-Bina 3rd line (143km) commissioned on 25.11.20 and Barkhera-Habibganj 3rd line (41.42km) viz. Habibganj-Mandideep (16.41km) commissioned on 15.09.20 and Mandideep-Barkhera (25.01km) commissioned on 30.12.2020.

7. Commissioning of Barauni Electric Loco Shed on 18.09.2020. The shed caters to electric locos for trains going towards the Northeast.

Financial Performance

		(₹ in crore)
	2019-20	**2020-21**
Total Turnover	14,530.58	**15,403.65**
Gross Profit (PBT)	990.83	**1,155.67**
Profit After Tax (PAT)	789.85	**940.55**
Dividend	237.69	**329.43***

*Includes final dividend amounting to ₹91.74 crore (@0.44 per fully paid equity share) recommended by the Board of Directors.

Rail Land Development Authority (RLDA)

Rail Land Development Authority (RLDA) is a statutory Authority under the Ministry of Railways, set-up by an Amendment to the Railways Act, 1989, for development of Railway Land as entrusted by the Central Government for commercial use for the purpose of generating revenue by non-tariff measures. RLDA has been constituted in terms of Extraordinary Gazette Notification dated 31.10.2006, as amended on 05.01.2007.

Business of the Authority

1.1 Commercial Development of Vacant Railway Land

Sites for commercial development are entrusted to RLDA by the Ministry of Railways. During the year 2020-21, total earning of ₹352.83

Crore has been realized by RLDA.

In the beginning of 2020-21, RLDA had been entrusted with 75 sites. RLDA had identified 17 new sites for commercial development. During 2020-21, Letter of Acceptance (LOA) for development of 4 commercial sites has been issued.

1.2 Construction of Multi Functional Complexes (MFCs)

Land for MFCs is leased to PSUs on 30 to 45 years lease on revenue sharing model. However, RLDA adopted combination model (upfront Lease Premium and fixed Annual Lease Rent model) for development through private developers for which bidders are selected through open competitive and transparent bidding process. In all 40 MFCs were assigned to PSU for development [IRCON (24), RITES (14), RVNL (2)]. Out of these 40 MFCs, 24 MFCs have been commissioned by IRCON. However, as per the directions of the Railway Board, 14 MFC Buildings completed by RITES have been handed over back to Railways without any cost. RVNL has also handed over 2 nos. MFC to concerned Zonal Railway. RLDA has been entrusted 123 MFCs for development through private developers. Out of these, 58 MFCs have been awarded and on account of poor viability in Technical & financial context Railway Board have been requested vide letter dated 11.03.21 to withdraw 39 MFC sites from RLDA.

LOAs for 4 MFC sites namely Sasaram, Durgapur, Kanchrapara and Nadiad issued during 2020-21. However, due to payment default Sasaram has been cancelled.

1.3 Re-development of Railway Colony 2020-21

Most of the colonies of Railways are very old and quarters are in dilapidated conditions. RLDA has been given responsibility of Re-development of Railway Colonies along with earning of noñ-tariff revenue by leveraging land uses and FSI. Upto March 2021, Railways has entrusted 84 colonies to RLDA for re-development.

Development of Railway Stations by RLDA in 2020-21

In total 63 stations have been entrusted to RLDA for redevelopment.

These stations are as below:-

Gomti Nagar, Charbagh (Lucknow), Tirupati, Nellore, Puducherry, Thane (New), Delhi Sarai Rohilla, Kota, Enakulam, Delhi Safdarjung, Ajni IMS (Nagpur), Dehradun, Jammu Tawi, Kozhikode, Tilak Bridge, Panipat, Gaya, Hatia, Rajendra Nagar (Patna), Puri, Tambaram, Vijayawada, Vishakapatnam, Renigunta, Rameshwaram, Khandwa, Faridabad, Bhuj, DakaniaTalav, Ahmedabad, Delhi Cantt., Enakulam Town, Howrah, Miraj, Mumbai Central, New Delhi, Shalimar (Howrah), Thiruvananthapuram, Alipurduar Jn., Jabalpur, Jaisalmer, Kathgodam, Mangalore Jn., Muzaffarpur, Nasik Road, New Jalpaiguri, Singrauli, Bhadrak, Brahmapur, Cuttack, Jajpur Keonjhar Road, Khurda Road, Rayagada, Sambalpur, Balasore, Jhasuguda, Rourkela, Bhagalpur, Begusarai.

The work of DPR consultancy at 38 stations is in progress. Construction work at Gomtinagar and Safdarjung is in progress (in EPC mode). RFQ were

invited for Ernakulam junction, New Delhi, Tirupati, Nellore, Dehradun and Puducherry Railway station.

Dedicated Freight Corridor Corporation of India Limited (DFCCIL)

About DFCCIL

DFCCIL is a wholly owned Public Sector Undertaking of the Ministry of Railways incorporated under Companies Act 1956 on 30th October 2006. The company has been mandated to undertake planning, construction, maintenance and operation of Dedicated Freight lines. In the first phase, the Government of India has approved construction of two corridors - the Eastern DFC (1,875 route km) and the Western DFC (1,506 route km), spanning a total length of about 3,381 route km. The Eastern Corridor, starting from Sahnewal near Ludhiana (Punjab), will pass through the states of Haryana, Uttar Pradesh, Bihar and Jharkhand to terminate at Dankuni in West Bengal. The Western Corridor connecting Dadri in Uttar Pradesh to JNPT in Mumbai will traverse through the states of Uttar Pradesh, Haryana, Rajasthan, Gujarat and Maharashtra.

Advantages of DFCCIL

- The unit cost of transport is also expected to reduce by 40%.
- DFC routes are constructed with the double lines and are also provided with automatic signaling thereby more than 120 trains can be run in each direction. Initially, it is planned to divert 70% of the freight traffic running on the parallel routes of Indian Railways and during the course of time, the road traffic will also get diverted to rail as DFCs will provide very efficient, economical, safe and faster mode of transport.
- Industrial corridors are also coming up along the Eastern DFC and Western DFC.
- Savings of 457 million tonnes of CO2 emission over a 30-year period.

With the Dedicated Freight Corridors, the Indian Railways aim to bring about a paradigm shift in freight operation with the prime objective of reduction in unit cost of transportation with higher speed of freight trains, better turn round of wagons and thereby much improved wagon productivity in terms of improved NTKM (Net Ton Kilometre), increased payload to tare ratio by introduction of higher axle load wagons on the rail network, improved locomotive utilization and improved specific fuel consumption. The ultimate objective is to reduce the Operation and Maintenance Cost (O&M Cost) significantly and pass on the benefit to the customer in the form of lower transport Logistics Cost.

There have been significant achievements by Dedicated Freight Corridor Corporation (DFCCIL) during the year 2020-21 despite the all-round disruption due to Covid-19 pandemic. DFC has been a driving force in contributing towards the ease of doing business and realising the goal of an “Aatmanirbhar Bharat.”

Significant Achievements of the year 2020-21

- 657 km of the project in both the Eastern and Western DFC corridors were dedicated to the nation in this financial year.
- DFC has considerably reduced the transit time of freight trains. The average speed for Goods trains achieved in the 351 km New Bhaupur – New Khurja section of the Eastern Dedicated Freight Corridor is 61.55 kmph thus covering the distance in less than 3 1/2 hours. The maximum speed touched by a freight train over DFC has been 99.3 kmph. This is a big achievement since the corresponding Indian Railways section falls on the highly saturated Delhi - Howrah route where average speed of freight trains is much lower.
- An additional 453 km of track was completed in the year. Current routes to and from Kandla, Mundra & Pipavav ports of western India will shortly be connected through DFC with the National Capital Region providing fast and cost-effective access between the western ports and the northern Indian hinterland. This will decongest the existing passenger traffic routes on the heavily saturated sections in Uttar Pradesh and Bihar.
- First freight train trial run was conducted on the Western dedicated Freight Corridor's newly built 353 km New Palanpur (Gujarat) – Madar (Rajasthan) section on 31.03.2021. 50 wagons loaded with High Speed Diesel weighing 3900 tons drawn by Multi DSC loco moved on DFC tracks to its destination in Bawal, Haryana.
- DFC has also been a conduit for non-conventional traffic. This opens up new revenue streams and also contribute towards helping Indian Railways increase its modal share of the freight carried.
- The cumulative carried kms touched around 2 Billion Gross Ton Kilometre (GTKM) with EDFC accounting for 1.167 GTKM and WDFC 0.325 GTKM respectively consisting of conventional and non-conventional goods.
- On 07.01.2021, 306 Km Rewari - Madar electrified double line section of WDFC was dedicated to the nation and also double stack long haul container trains from New Ateli and New Kishangarh stations was flagged off.
- 351 Km New Bhaupur – New Khurja double line section of EDFC and state of the art Operation Control Centre (OCC) in Prayagraj was dedicated to the nation on 29.12.2020 and long haul trains from New Khurja and New Bhaupur stations were flagged off. DFCCIL has set up a state-of-the-art Operation Control Centre (OCC) at Prayagraj (Allahabad) which acts as the command centre for the entire Eastern Dedicated Freight Corridor (EDFC), controlling and monitoring the system including Train operation and power supply system. The OCC is a shining example of "Make-in-India".
- In the 2021 Union Budget, three new DFCs were proposed. One

is from Kharagpur to Vijayawada covering 1,100 kilometer (km), called the East Coast Corridor. The second one is from Kharagpur to Bhusawal with an approximate length of 2,000 Km and is called East-West DFC. The third is the North-South DFC which will start from Vijayawada to Itarsi covering 975 km. overall, around 4,000 km of DFC is being planned at an approximate cost of over ₹2 lakh crore.

- Successful trial run of Electric Locomotive in Ganjkhwaja-Chirailpathu section (100 km) of EDFC on 31.03.2021.
- Modalities for movement of Roll On – Roll off (RORO) service between New Rewari – New Palanpur was finalised. This initiative will be a win-win situation for all stakeholders concerned. Customers will be assured a faster and assured transit time of approx. 10 hours vis-à-vis 24 hours through road, a saving of around 14 hours.

Progress of Works

- The project has witnessed a significant leap in the progress of Civil, Electrical and S&T construction works with commissioning and successful trial runs of Freight trains in both Eastern and Western Corridor.
- Track linking of 741 km has been done in the year, taking the cumulative linking to 3,321 km.
- The OHE wiring by Mechanized wiring train started for the first time in India in both EDFC and WDFC. OHE wiring of 1,152 km has been done in the year 2020-21. On cumulative basis, 2,660 TKM track OHE wiring has been achieved till 31.03.2021.
- Other major indices have also seen progress during the financial year. 54% of Major Bridges. i.e. 290 have been completed out of 540. 67% RUBs, i.e. 1061 have been completed out of 1,582. 30% of ROBs i.e. 91 have been completed out of 302.
- DFCCIL achieved CAPEX of ₹14,313 crores on other than land, which is highest ever Capital Expenditure. This increase is despite losing more than three months of the crucial working season due to COVID19 related lockdown, which badly affected the project.

Land Acquisition

The total award u/s 20F declared so far is 11,653 Ha of land (WDFC: 5991 Ha out of 6000 Ha and EDFC: 5662 Ha out of 5,813 Ha) which is approx 98.5% overall (99.9 % excluding Sonnagar-Dankuni) with compensation amounting to ₹15,542 crores till March,2021.

Business Development, Operations & Safety

With the commencement of operations in the already commissioned sections, the role of Operations Business Development has assumed great importance.

- Approval obtained for disconnection from IR and connection with DFC for 5 Private sidings (JK Lakshmi, Shree, Binani Cement, BPCL,

Nabha) on WDFC/EDFC and inclusion of cost of disconnection/ connection in the estimate of work for 4 Private sidings (Ultratech Cement, Mejia TPP, SAIL Dankuni, Dankuni Coal Complex) in Sonnagar - Dankuni (PPP) section

- Development of Logistic Parks/Freight Terminals/Parcel Terminals and their connectivity with DFC stations through private investment is being pursued which has the potential to bring more traffic and spur economic development.
- Land acquisition of 61 Hectares is under process at Kanpur for development of a multi modal logistics park at Kanpur. The logistic park will be developed under BOT model.
- Asset monetization of optical fibre over DFC is being pursued which will open up a new revenue stream for DFC.
- Commercial notification has been issued for opening good sheds at 4 locations to facilitate loading and unloading.
- Bids were received for 14 locations spread over EDF and WDFC for development of private freight terminals (PFTs). LOA has been issued to 3 such successful bidders in the financial year 2020-21.

Mumbai Railway Vikas Corporation Ltd. (MRVC)

1.1 Mumbai Railway Vikas Corporation Ltd (MRVC Ltd), a PSU of Govt. of India under Ministry of Railways (MOR) executing the Rail Component of the MUTP.

1.2 Mumbai Urban Transport Project – I

MUTP I was sanctioned in Rail Budget 2003-04. It was successfully completed in 2012 and its completion cost was ₹4,452 crore.

Major Infrastructural Inputs in MUTP Phase - I (Rail Component)

- Addition of 93 track Kms. (5^{th} & 6^{th} line Kurla-Thane, 3^{rd} & 4^{th} line Borivali-Virar)
- Induction of 101 new 9-car rakes (909 coaches)
- Resettlement & Rehabilitation of 15,857 Project affected households.
- Running of 12-car rakes on all lines (excluding Harbour Line) by extending the length of all platforms
- 1500 V DC to 25k V AC conversion on Central & Western Railway – Traction conversion work on entire Western Railway.

1.3 Mumbai Urban Transport Project-II -

MUTP II was sanctioned in Railway Budget 2008-09. The present cost of the project is ₹8,087 crore. The project is bifurcated into MUTP 2A and 2B as follows :

1.3.1 MUTP 2A – Completed : Cost ₹4,803 crore. Loan from World Bank ₹1,727 crore.

S. N.	Name of Work	Agency of Execution	Status
1	EMU Procurement/Manufacture (ICF)	MRVC/RDSO/ICF	Completed
2	1500v DC to 25kV AC Conversion	CR, MRVC	Completed
3	EMU Maintenance Facilities & Stabling Lines	CR, WR, MRVC	Completed
4	Trespass Control measures	MRVC	Completed

1.3.2 MUTP 2B – In progress : (funded by GoM and MoR on 50:50 basis)

S. N.	Name of Work	Agency of Execution	Completion Target
1	5th & 6th line between CSTM-Kurla	CR	March, 2024
2	5th & 6th line between Thane-Diva	MRVC	January, 2022
3	Extension of Harbour Line between Andheri-Goregaon	MRVC	Completed in December, 2017
4	6th Line between BCT-Borivali	WR	March, 2023
6	Resettlement and Rehabilitation	MMRDA	Along with project

1.4 Overall Amenities at various Stations by MRVC under MUTP II works

Under various MUTP-II works, following amenities were provided in Mumbai suburban stations :–

New FoBs - 30	New platforms - 12
Booking offices - 27	New home platforms - 02
Elevated Decks - 6	Escalators - 44
Platform extensions - 31	Elevators - 25
New Station (Ram Mandir Rd)- 01	Skywalk/Highwalk- 06

1.5 MUTP 2C – Running of 12 car on Harbour line - Completed: Cost ₹714 crore.

All infrastructure works were completed in March 2016. 13/12 car EMU rakes under the project were received by Feb., 2018. The project has led to increase in capacity by 33% on harbour line.

1.6 MUTP 3 – Sanction in Dec. 2016 – Cost of ₹10,947 crore.

SN	Name of the work	Cost (₹in crore.)
1	New Suburban Railway Corridor Panvel-Karjat (double line) (28 Kms)	**2,782**
2	New Suburban corridor link between Airoli-Kalwa (elevated)on Central Railway (4 Kms)	**476**
3	Quadrupling of the Virar-Dahanu Road on Western Railway (31.5 Kms)	**3,578**
4	Procurement of Rolling Stock (565 coaches)	**3,491**
5	Trespass Control on mid-section	**551**

1.6.1 Land Acquisition for all corridors is in progress and tenders have been awarded for a number of major works. A Loan Agreement has been signed by Govt. of India and AIIB on 24.08.2020 of ₹3,500 crore (USD 500 million) for MUTP III.

1.7 MUTP 3A approved by Union Cabinet in March 2019 at the cost of ₹33,690 crore is as under -

S N	MUTP 3A corridors	Route km	Completion Cost in crore	Executing Agency
1	Extension of Harbour Line between Goregaon-Borivali	7	826	Western Railway
2	5th & 6th line between Borivali-Virar	26	2,184	MRVC
3	4th line between Kalyan-Asangaon	32	1,759	CR
4	3rd & 4th line between Kalyan-Badlapur	14	1,510	MRVC
5	Kalyan Yard - Segregation of Long distance and Suburban Traffic		866	CR
6	a) CBTC on CSMT-Panvel on Harbour Line	49	1,391	MRVC
	b) CBTC on CSMT-Kalyan on Central Railway	53	2,166	MRVC
	c) CBTC on CCG-VR on Western Railway	60	2,371	MRVC
7	Station Improvement		947	MRVC
8	Procurement of Rolling Stock – 191/12 car AC EMU rakes		15,802	MRVC/ICF/ MCF
9	Maintenance facilities for Rolling Stock		2,353	MRVC
10	Stabling Lines		557	CR & WR
11	Augmentation of Power Supply Arrangement		708	CR & WR
12	Technical Assistance		250	MRVC

Preliminary works are in progress.

1.8 Construction of FoBs on Central and Western Railway

Railway Board has entrusted MRVC with the work of execution of 13 FoBs on Central Railway and 16 on Western Railway Suburban Section in November, 2017. Out of these, 8 FoBs are completed on CR and 13 FoBs completed on WR.

Braithwaite & Co. Limited

Braithwaite & Co. Limited (BCL) is a leading Heavy Engineering Company in India under Ministry of Railways, having two manufacturing units located in West Bengal. BCL has been a dominant player in Wagon Manufacturing Industry since decades. Its major products include manufacturing

of newly built wagons, repairing of wagons, structural steel work, Bridges including civil construction, manufacture and maintenance service for cranes and steel castings (Bogie, Coupler etc) and wagon sub assemblies.

In-spite of having core competency in developing and manufacturing of various types of wagon, BCL has gradually forayed into Service Sector and also entered into various other business verticals viz. Container Manufacturing, POH of Railway Workshops, Ship repairing & material handling equipments for Shipyard, renovation and rebuilding of Rail and Foot Over bridge (ROB / FOB). The Company is accredited with ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 and EN ISO 3834-2:2005 and EN 15085-2 : 2007.

Highlights of its performance in the year 2020-21, vis-à-vis the year 2019-20 are tabulated below:

(₹in crore)

Particulars	2019-20	2020-21	% increase / decrease
Revenue from Operations	579.17	**609.60**	5.25% increase
Profit (PBT)	23.97	**31.07**	29.62% increase
Net Worth	83.45	**108.17**	29.62% increase

Major Achievements during 2020-21, as regards the performance of BCL:

- Achieved highest ever Sales, PBT & Net worth, in spite of all the adversities during 2020-21 with the onset of the still raging Covid-19 pandemic.
- BCL added 5 new sites and achieved highest ever repair wagon execution of 10,150 nos.
- Brickwork Ratings upgraded the ratings for BCL from BBB to BBB+ with a stable outlook which is the highest ever credit rating achieved.
- After development of Meter Gauge Bogie prototype and its approval, BCL successfully completed the Export order of 368 Bogies to Myanmar Railways.
- BCL has secured a total of ₹1,107.29 crore order during the year 2020-21 which is a substantial amount compared to previous year and consisted of civil works order also. The order received from ECoR for complete operation of newly built workshop at Vadlapuri is for the first time in the history of Indian Railway.
- SBI had enhanced the credit exposure from ₹150.20 crore to ₹250.20 crore based on the company's stability and Working Capital needs with a substantial reduction of BG commission, BG Margin & Interest Rate on limit.

Advisory Boards

National Railway Users' Consultative Council, Zonal/ Divisional Railway Users' Consultative Committee, etc.

Railway Users' Consultative Committees, at different levels, provide opportunities for formal consultations between the management and the rail users with a view to improve services for rail users. Zonal Railway Users' Consultative Committees (ZRUCCs), Divisional Railway Users' Consultative Committees (DRUCCs), Konkan Railway Users' Consultative Committee (KRUCC), Metro Railway Users' Consultative Committees (MRUCC), Suburban Railways Users' Consultative Committees and Station Consultative Committees at important stations provide useful inputs to Railway administration.

ZRUCC has been reconstituted for a two year term from 01.02.2021 to 31.01.2023. DRUCCs have been reconstituted for a two year term from 01.01.2020 to 31.12.2021.

Central Board of Railway Research

Central Board of Railway Research comprises Director-General, RDSO as Chairman, concerned senior officers of Railway Board as Members and Additional DG, RDSO as Member Secretary. Representation is also given to non-Railway members from the IITs, eminent scientists, engineers, other Government Departments, Industry etc. The Board recommends and reviews Railways' research programmes and also ensures coordination and assistance from other research laboratories.

Railway Hindi Salahakar Samiti

In order to propagate the use of Hindi in Ministry of Railways and Zonal Railways, Railway Hindi Salahakar Samiti constituted under the Chairmanship of Hon'ble Minister of Railways, whose main objective is to give valuable suggestions to propagate the use of Hindi.

Important Events

2020-21

27.07.2020	Flagging off of 10 (ten) Broad Gauge Diesel Locomotives to Bangladesh from Gede Railway station of Eastern Railway.
07.08.2020	Flagging off of India's first "Kisan Rail" train from Devlali to Danapur.
09.08.2020	Dedication of Railway Museum at Hubballi to the Nation.
30.08.2020	Flagging off of first RO-RO service train between Bengaluru(Nelamangala) to Solapur(Bale).
09.09.2020	Flagging off of South India's 1st Kisan Rail from Anantapur.
13.09.2020	Dedication to the Nation: Jhanjharpur Newly Converted Broad Gauge Section (8 km), New Station Building and platform at Lohna road, New Station Building, Waiting Hall and two High level-Platforms at Jhanjharpur and New Station Building and Waiting Hall at Tamuria.
15.09.2020	Dedication to the Nation: Newly doubled Thalwara - Darbhanga section (10KM), New Station building, Waiting Hall and High level Platform at Thalwara, New Station building, Waiting Hall and High Level PF 1 &2 and Goods Wharf at Laheria Sarai, New High level Platforms & Lift at PF No. 4&5 at Darbhanga, FOB at Kakarghatti, New Waiting Hall at Sakri Jn. and New station building and Platform at Lohna Road.
18.09.2020	Dedication to Nation, Kosi Rail Mega Bridge; Newly Electrified (5 sections)- SPJ-DBG-JYG, SPJ-KGG, SHIV-BGP,KIR-NJP, SMI-MFP; New Electric Loco Shed, Barauni; New Lines (04) (i) Hajipur-Vaishali (ii) Islampur-Natesar, (iii) Saharsa-Asanpur Kupha, (iv) Karnauti-Bakhtiyarpur link 3rd line between Barh-Bakhtiyarpur; Gauge conversion of Saharsa-Saraigarh-Raghopur; New bridge on river Kiul, electronic interloking in Kiul yard and Flagging off of: 1. Train between HJP-Vaishali new line 2. Train between Islampur-Natesar new line 3. Electric train on newly electrified KIR-NJP section 4. Elecric train from Sitamarhi 5. DEMU train in Supaul-Saraigarh Jn.-Asanpur Kupha-Raghopur section.

18.09.2020	Dedication to the Nation a series of projects including Kosi Rail Mega Bridge, newly electrified sections including Shivnarayanpur – Bhagalpur section, New Electric Loco Shed/ Barauni, new lines, gauge conversion, new bridge on river Kiul and electronic interlocking by replacing old mechanical signalling in Kiul Yard and flagging off of passenger trains on various sections.
18.09.2020	Inauguration of New Electrified Line from Katihar – New Jalpaiguri Section.
19.09.2020	Delivery of 02 DEMU train sets to Nepal against order placed by the Department of Railway, Nepal.
05.10.2020	Change of name of Naugarh railway station to 'Siddartha nagar' of Lucknow division over North Eastern Railway.
14.10.2020	Flagging off of "Santra Kisan Rail" from Nagpur-The Orange City to Adarsh Nagar, Delhi.
17.12.2020	Inauguration of Haldibari(India) – Chilahati (Bangladesh) rail link during the PM level virtual bilateral summit.
28.12.2020	Flagging off of the 100th Kisan Rail from Sangola (Maharashtra) to Shalimar (West Bengal).
17.01.2021	Flagging off of train no. 09119 Dr. MGR Chennai Central – Kevadiya superfast along with 7 other trains from various parts of the country to Kevadiya.
	Dedication to the Nation-Chandod – Kevadiya new Broad Gauge railway line, newly electrified Pratapnagar – Kevadiya section and new station buildings of Dabhoi, Chandod and Kevadiya.
17.01.2021	Inauguration of train no. 09106 Rewa-Kevadiya Special.
25.01.2021	Dedication of New Station Building, New Foot Over Bridge, Improved Platform Surface and Road Under Bridge (LC No- 70) at Sardiha Station of Kharagpur Division.
08.02.2021	Inauguration of Upper Class Waiting Hall and newly built Station Toilet Complex at Sitarampur station.
14.02.2021	Inauguration of Mau-Anand Vihar Terminus bi-weekly special Train through video link from New Delhi.
14.02.2021	Dedication of Chennai Beach– Attipattu 4th line and Villupuram-Cuddalore-Mayiladuthurai-Thanjavur & Mayiladuthurai-Thiruvarur Jn. Electrification at Nehru Indoor Stadium Chennai Flagging off of Chennai Beach & Thanjavur freight special train.
15.02.2021	Flagging off' of Train No - 03161/03162 (Kolkata-Balurghat Express) at Rampur Bazar.

16.02.2021	Additional stoppage of Train No. - 02378/77 & 05955/56 at SM(Samsi) Railway Station.
16.02.2021	'Flagging off' of Train No - 05463/05464 (Siliguri-Balurghat Intercity) at Naksalbari.
17.02.2021	Dedication to the Nation, Electrification of Manigram - Nimtita section, Road Underbridge near Malda and at Manigram, five Road Overbridges at Khagraghat Road, Lalbagh Court Road, Tenya, Dahapara Dham and Niyalishpara stations and two Foot Overbridges at Sujnipara and Basudebpur stations. .
19.02.2021	Inauguration of 2nd Foot Over Bridge at Santragachi station, Sankrail Freight Terminal (Phase – I) and Vivekananda Meditation Centre at Howrah and dedication to the Nation Executive Lounge at Sealdah Station, two Escalators at Sealdah station, two lifts at Sealdah station, Premium Lounge at Kolkata station, Integrated Security System at Barddhaman station, Foot Over Bridges at Jhamatpur Baharan and Nimo stations, Extension of platform sheds at Balagarh and Guptipara stations and Escalators at Barddhaman, Tarakeswar and Nabadwip Dham stations.
19.02.2021	Inauguration of 2nd Food Over Bridge at Santragachi Station and Sankrail Freight Terminal (Phase-I).
21.02.2021	Dedication to the Nation: Doubling between Gubbi and Nittur & Chikodi Road and Raybag.
21.02.2021	Dedication/Inauguration of passenger amenities in Tamil Nadu & Kerala **Tamil Nadu** 1. Dedication to the Nation - Escalator at Mambalam, Tiruvallur, Erode and Thanjavur Railway Stations; 2. Lift facility at Coimbatore Railway Station; 3. Foot Over Bridges at Ambattur, Arakkonam, Elavur, Mettupalayam, Tiruppur, Gangaikondan, Kadayanallur and Vanchi Maniyachi Railway Stations; 4. Video Surveillance System at Thirumailai, Palavanthangal, St Thomas Mount, Chengalpattu, Villupuram, Kumbakonam, Mayiladuturai, Thanjavur, Dindigul, Kovilpatti, Virudhunagar, Tirunelveli, Tuticorin, Kanniyakumari, Nagercoil Jn, Erode, Salem Jn and Tiruppur Railway Stations with Centralized monitoring system at Chennai; 5. Double Discharge Platform at Guindy Railway Station;

	6. Passenger Convenience Facility & ATM Complex at Madurai Railway Station; 7. Escalators at Chennai Egmore and 2 Nos at Tambaram Railway Station; 8. Lift (2 Nos) at Nagercoil Jn Railway Station; 9. Foot Over Bridge at Mambalam and Nagercoil Town Railway Station; 10. Second Entry Circulating Area and Booking Office at Arakkonam Railway Station; 11. Multi Level Two Wheeler Parking at Katpadi Railway Station and Station Building & PRS Centre at Nagercoil Town Railway Station. **Kerala** 1. Dedication/Inauguration- Lifts 2 Nos each at Kanhangad and Aluva Railway Station; 2. Dedication to the Nation – Foot Over Bridge at Kochuveli, Kollam, Kundara Railway Stations; 3. Dedication to the Nation – Video Surveillance System at Alappuzha, Aluva, Chengannur, Ernakulam Town, Kayankulam, Kottayam, Tiruvalla, Vadakara, Kannur, Kasaragod, Palakkad jn, Tirur, Thalasseri, Kanhangad and Payyanur Railway stations with Central Monitoring System at Chennai; 4. Dedication to the Nation – Water treatment plant at Kochuveli Railway Station; 5. Dedication to the Nation- 100 KWp Solar Plant and Airport type illumination in covered platform areas of Thrissur Railway Station; 6. Dedication to the Nation – Airport type illumination in covered platform areas of Thiruvananthapuram Railway Station; 7. Inauguration of Raised platforms (PF 1, 2 & 3) at Tanur.
21.02.2021	Dedication to the Nation:Railway electrification from New Jalpaiguri to Raninagar Jalpaiguri. Dedication to the Nation: Construction of station building, circulating area, platform, running room etc. at Haldibari Station. Dedication to the Nation: Upgradation of speed from 50Kmph to 110 Kmph with installation of Electronic Interlocking at Haldibari Station. Dedication of Teegaon - Chichonda 3rd line section and inauguration of lifts at Betul and Pandhurna stations.

	Dedication to the Nation: Upgradation of speed from 50 Kmph to 110 Kmph with installation of Electronic Interlocking at Jalpaiguri Station.
22.02.2021	Inauguration of extended North-South corridor of Metro Railway between Noapara & Dakshineswar, flagging off of first metro service in Noapara – Dakshineswar Section, 3rd line between Kalaikunda - Jhargram and; Dedication to the Nation: Doubling of line between Azimganj & Khagraghat Road, 4th line between Dankuni & Baruipara and 3rd line between Rasulpur & Magra.
	Inauguration of Kalaikunda-Jhargram 3rd line (30Km) section of Kharagpur-Aditypur 3rd line project. Flagging off of first train on the newly constructed Kalaikunda-Jhargram 3rd line.
23.02.2021	Flagging off of 05930 New Tinsukia – Tambaram special express.
25.02.2021	Inauguration of Tanakpur-Delhi Purnagiri Janshatabdi special train.
04.03.2021	Additional stoppage of train no.09484 at Banda & Chitrakutdham Karwi.
08.03.2021	Inauguration of Jabalpur-Chandafort Superfast train and other passenger amenities in Madhya Pradesh.
08.03.2021	Inauguration of various passenger amenities at Shivpuri station
08.03.2021	Inauguration of various passenger amenities at Sant Hirdaram Nagar station
10.03.2021	Flagging off of 3000 HP Cape Gauge Locomotive for export to Mozambique.
30.03.2021	Flagging off of DEMU train from Phaltan to Pune via Lonand Jn.

Glossary

ACCOUNTS

Capital Investment	Book value of the capital assets of Railways.
Gross Revenue	The true earnings in an accounting period whether actually realized or not
Gross Receipts	Earnings actually realized in an accounting period.
Net Revenue	Gross traffic receipts minus total working expenses.
Operating Ratio	Ratio of working expenses to gross revenue.
Suspense	Unrealised earnings, liabilities not discharged in an accounting period.
Working Expenses	Expenditure on administration, operation, maintenance and repairs, contribution to Depreciation Reserve Fund and Pension Fund.

STATISTICAL

Density	The volume of traffic moving between any two points on the Railway expressed in terms of passenger kilometers or net tonne kilometres per route kilometre/running track kilometre or train kilometres per running track kilometre.
Engine Kilometre	Movement of an engine under its own power over the length of one kilometre.
Gross Tonne Kilometre	Gross tonnage comprising payload and tare weight hauled by a train over one kilometre.
Lead	Average haul of a passenger or a tonne of freight
Loaded Wagon Kilometre	Movement of a wagon loaded with goods over one kilometre.
Net Load or Net Tonnage	Payload of passengers, luggage or goods carried by a vehicle or a train.
Net Tonne Kilometre	Payload of one tonne carried over one kilometre.
Non-Revenue Traffic	Traffic conveyed free for working the Railways.
Passenger Kilometre	A passenger transported over one kilometre.
Revenue Earning Traffic	Traffic which is paid for by the consignor or the consignee.

Route Kilometre	The distance between two points on the Railway irrespective of the number of lines connecting them, whether single line, double line etc.
Running Track Kilometre	The length of all running tracks excluding tracks in sidings, yards and crossings.
Track Kilometre	The length of all running tracks including tracks in sidings, yards and crossings.
Train Kilometre	Movement of a train over one kilometre.
Vehicle/Wagon Kilometre	Movement of a vehicle/wagon over one kilometre.
Wagon Turn-Round	Interval of time between two successive loadings of a wagon.

TRAFFIC

Rate	Price fixed by the tariff for the conveyance of a unit of parcels, luggage and goods.
Fare	Money realized by the Railways from transportation of persons excluding the 'penalty' realized.

OTHERS

Number of Staff	All employees paid directly by the Railway administration.
Stores	Materials or parts either purchased by the Railway or manufactured in Railway workshops for working the Railways.
Tractive Effort	Load-hauling capability of a locomotive expressed in terms of the tractive force exerted by the locomotive at wheel.

Summary of important audit observations from the Report of the Comptroller and Auditor General of India—Union Government (Railways) and Status Report on Pending Action Taken Notes

Audit Report No 5 fo 2021

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

Para 2.1 Provision of Elephant Passages in Indian Railways

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

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

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

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

c) Underpasses/overpasses were constructed for the safe passages of elephant only in respect of two Zonal Railways (East Central and Northeast Frontier Railways). After completion of those underpasses/

overpasses, no elephant death was reported.

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

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

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

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

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

Audit recommendations

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

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

For better security of passengers and to guard the Railway Installations, Ministry of Railways issued instructions to all Zonal Railways to implement Integrated Security System (ISS). All ISS equipment were not installed at once and the System Integration with control room as envisaged in the contract was not achieved in East Coast Railway. Railway Administration neither took any action against the defaulting firm nor reported the progress/

difficulties in installation of ISS equipment to Ministry of Railways. This resulted in security risk in East Coast Railway.

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

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

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

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

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

Railway Administration was responsible to collect Service Tax from the licensees for installing vendor stalls at railway stations and its remittance to Government's exchequer. Audit observed that in four Zonal Railways (Northern, South Eastern, North Eastern and East Central), Railway Administration failed to comply with the provisions of Finance Act as well as Ministry of Railways instructions on Service Tax. This resulted in loss of ₹7.88 crore to Government exchequer due to non-levy and non-recovery of Service Tax from the vendors.

Para 3.1 Price Variation in Works Contracts in Indian Railways

Price Variation Clause (PVC) was incorporated in General Conditions of Contract(GCC) to safeguard against change in prices of labour, material, fuel and other components. Ministry of Railways issued various instructions from time to time in this regard. In violation of Ministry of Railways periodic instructions on price variation, irregularities such as the incorrect adoption of base month and quarter, incorrect application of percentages of components in Price Variation formula etc. were noticed in the Zonal

Railways. Extensions on railway's account were granted in a routine manner. Due to non-fulfilment of pre-requisites such as availability of clear sites, approved drawings and design etc., Railways paid significant amount towards price variation during the extended period of contract.

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

Audit recommendations

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

Para 3.2 Unproductive expenditure on construction of Limited Height Subways

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

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

Ministry of Railways sanctioned the work of Hajipur-Sagauli New Line in 2003-04 with Abstract Estimate of ₹324.66 crore. In October 2007, Ministry of Railways sanctioned the Detailed Estimate of ₹528.65 crore. The Detailed Estimate contained a provision of ₹115.16 crore for land acquisition of 2,043.96 acre. In the meanwhile, Bihar Land Acquisition, Resettlement and Rehabilitation Act, 2007 was enacted and accordingly the State Authority/Champaran revised (March 2007) the cost of land to ₹98.72

crore (962.59 acre) for 49 villages. Railway Administration deposited ₹17 crore (31 March, 2007) for land acquisition of 28 villages. District Magistrate/ East Champaran submitted (January 2012) again a Revised Estimate of ₹350.84 crore for 49 villages. A demand of ₹333.84 crore (₹350.84 crore minus ₹17 crore) which included the remaining amount of ₹3.20 crore for 28 villages was made. In the Revised Estimate, the estimated cost of 28 villages was still ₹20.20 crore. The possession of these land had already been provided to Railways as per sub section 3 (a) of section 17 of Land Acquisition Act, 1894. However, despite demand of the District Magistrate/ East Champaran for ₹3.20 crore for 28 villages which was already acquired by Railway Administration, no payment was made.

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

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

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

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

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

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

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

Ministry of Railways issued a Joint Procedure Order (JPO) in December 2004 for execution of works in the vicinity of working signal and telecommunication cables. In order to minimize and control cable cuts while carrying out digging works near existing S&T and electrical cables, Ministry of Railways issued (June 2013) revised JPO. Review of records

of S&T Department of South Central Railway and East Coast Railway for the period April 2013 to 2019 revealed non-implementation of Ministry of Railways directives. This resulted in non-realization of penalties from the various departments/agencies in South Central and East Coast Railways. An amount of ₹12.59 crore was still outstanding in 1,084 cases.

Para 4.1 Audit of Selected Stations in Indian Railways

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

It was observed that 77 Platforms (PFs) were available in the eight selected stations, but Cement Concrete (CC) Washable Apron had not been provided at 26 Platforms. Despite having facilities of mechanized cleaning in the contract at all selected stations, the facility was underutilized due to non-availability of washable apron at these 26 Platforms in seven stations. Non-availability of CC aprons also resulted in blockage of drains with ballast on the track which ultimately resulted in creating unhygienic surroundings. Indian Railway Water Policy, 2017, stipulate that recycled water was to be used for non-potable purposes. Audit, however, observed that Zonal Railway Administration were yet to install water recycling plants in these stations and groundwater is being used for all purposes.

Water taps (1,316) were to be made available in the eight stations as per prescribed norms, however, the availability of water taps was 1,022 only. Similarly, against the requirement of 154 water coolers as per the prescribed norm (Minimum Essential Amenities -MEA) only 63 water coolers were available.

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

Audit recommendations

- Ministry of Railways needs to frame a separate Waste Management Policy and comply to Board/NGT's instructions to overcome the shortcomings of Waste Management at the Stations.

- Ministry of Railways needs to take adequate measures for planning and implementation of water management which includes availability of sufficient water, water treatment plant, water recycling plant etc.
- Ministry of Railways needs to take appropriate measures to remove encroachments.
- Ministry of Railways needs to provide adequate Integrated Security System as per recommendations of the High Level Committee.

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

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

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

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

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

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

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

The procurement was made in contravention of the CVC guidelines

resulting in avoidable extra payment of ₹15.88 crore.

Status Report on Pending Action Taken Notes (ATNs) as on 05.11.2021

Sl. No.	No. & Year of the Report	No. of paras/ C& AG report on which ATNs have been submitted	Details of the Paras/C&AG report on which ATNs are pending			
			No. of ATNs not sent by the Ministry even for the first time	No. of ATNs sent but returned with observations and Audit is awaiting their resubmission by the Ministry	No. of ATNs which have been finally vetted by audit but have not been submitted by the Ministry to PAC	Audit
1	14, 15, 24, 29, 47, 48 & 53 of 2015	50/49	0	0	0	1
2	13, 14, 32 & 37 of 2016	45/43	0	0	0	2
3	14, 22, 36, 45 & 13 of 2017	43/35	0	2	1	5
4	1, 5, 17, & 19 of 2018	44/30	0	3	0	11
5	10 & 19 of 2019	50/7	1	13	1	28
6	2 & 8 of 2020	4/1	0	2	0	1
	Total	**236/165**	**1**	**20**	**2**	**48**

Financial Statements & Operating Statistics

Contents

Financial Statements

Consolidated Profit and Loss Account..... 158

Statements Supplementary to Profit and Loss Account:

Gross Traffic Receipts 158

Ordinary Working Expenses 159

Contribution to Reserve Funds 159

Dividend and Other Payments to General Revenues.....159

Balance Sheet 160

Value of Railway Assets 162

Railways' Contribution to the Plan—Source of Funds/Application of Funds..... 164

Operating Statistics

Assets 166

Operation 167

Traffic and Earnings 168

Utilisation of Rolling Stock 170

General..... 171

Statistical Summary—Indian Railways

Financial Statements

Consolidated Profit and Loss Account: 2019-20

2019-20 (₹ in crore)	Supporting Statement		2020-21 (₹ in crore)	Supporting Statement
174,356.60	IA	**Gross Traffic Receipts**	**140,570.52**	**IA**
		Ordinary Working Expenses		
150,211.21	IB	(including Payment to Worked Lines)	**135,844.51**	**IB**
		Contribution to Reserve Funds		
21,108.00	IC	(Depreciation Reserve Fund and Pension Fund)	**723.00**	**IC**
171,319.21		Total Working Expenses	**136,567.51**	
3,037.39		Net Traffic Receipts (Operating Profit)	**4,003.01**	
(-)1447.77		Miscellaneous Transactions (Net)	**(-)1,455.53**	
1,589.62		**Net Revenue (Gross Profit)**	**2,547.48**	
		Less		
—	ID	**(a) Dividend and other Payments to General Revenues**	**—**	**ID**
—		**(b) Payment to Deferred Dividend Liability**	**—**	
$(+)1,589.62		**Excess (+)/Shortfall (–)**	**$$(+)2,547.48**	

$$ The excess was appropriated to Development Fund (DF) and Rashtriya Rail Sanraksha Kosh (RRSK)

$$ The excess was appropriated to Development Fund (DF) and Rashtriya Rail Sanraksha Kosh (RRSK)

Statements Supplementary to Profit and Loss Account

2019-20 (₹ in crore)	IA		2020-21 (₹ in crore)	IA
		Gross Traffic Receipts		
		Coaching Earnings		
		Passenger Traffic		
#—		Full fares	**#—**	
#—	50,669.09	Less than full fares	**#—**	**15,248.49**
		Parcels and other coaching traffic		
1,448.06		Parcels	**1,037.06**	
130.69		Luggage	**27.51**	
3,062.04	4,640.79	Others	**1,032.17**	**2,096.74**
		Goods Earnings		
60,668.50		Coal, Coke etc.	**54,922.59**	
52,977.06		General Merchandise	**61,100.98**	
979.68		Other Traffic	**673.11**	
1,486.98		Wharfage and Demurrage	**1,099.10**	
(-)2,024.33	113,487.89	Less refunds	**(-)563**	**117,231.82**
	5,862.75	**Miscellaneous (Sundry) other earnings**		**5,938.61**
	174,660.52	**Total Gross Earnings**		**140,515.66**
	(-)303.92	Suspense (Bills receivable)		**(+)54.86**
	174,356.60	**Gross Traffic Receipts**		**140,570.52**
		(Actually realised)		

Figures not available

2019-20 (₹in crore)	Percentage to total		2020-21 (₹in crore)	Percentage to total
	I B	**Ordinary Working Expenses**		**I B**
8,292.35	5.52	General Superintendence and Services	**8,116.76**	**5.98**
15,824.18	10.53	Repairs and Maintenance of Permanent Way and Works	**15,766.34**	**11.61**
6,686.87	4.45	Repairs and Maintenance of Motive Power	**5,719.89**	**4.21**
16,398.71	10.92	Repairs and Maintenance of Carriages and Wagons	**15,670.86**	**11.54**
8,383.78	5.58	Repairs and Maintenance of Plant and Equipment	**8,157.82**	**6.01**
17,468.30	11.63	Operating Expenses–Rolling Stock and Equipment	**14,447.15**	**10.64**
29,661.88	19.75	Operating Expenses–Traffic	**29,526.32**	**21.74**
28,999.77	19.31	Operating Expenses–Fuel	**19,509.15**	**14.36**
7,865.54	5.24	Staff Welfare and Amenities	**7,922.27**	**5.83**
7,479.72	4.98	Miscellaneous Working Expenses	**7,317.81**	**5.39**
3,633.75	2.42	Provident Fund, Pension and other Retirement Benefits	**4,054.04**	**2.98**
150,694.85		Gross Expenditure	**136,208.41**	
(-)483.64	(-)0.32	Suspense (Bills payable)	**(-)363.90**	**(-)0.27**
150,211.21	100.00	Ordinary Working Expenses (Actually disbursed)	**135,844.51**	**100.00**
		Contribution to Reserve Funds		
400.00		Depreciation Reserve Fund	**200.00**	
20,708.00		Pension Fund	**523.00**	
21,108.00		Total Contribution to Fund	**723.00**	
171,319.21		**Total Working Expenses**	**136,567.51**	
				ID
	ID	**Dividend and Other Payments to General Revenue**		
	—	Dividend Payable (Current)		**—**
—		Payments in lieu of tax on Passanger Fares	**—**	
—	—	On account of assistance to Railway Safety Fund	**—**	**—**
	—	**Total Dividend payable**		**—**
	—	Deferred Dividend paid		**—**
	—	Net Dividend paid		**—**

Balance Sheet

As on March 31, 2020 (₹in crore)			As on March 31,2021 (₹in crore)
		LIABILITIES	
	A.	**Loan Capital**	
#3,78,468.48		advanced by General Exchequer #	*4,06,883.88
	B.	**Investment Financed from**	
53,449.91		Railway Capital Fund	53,449.91
65,272.79		Depreciation Reserve Fund	65,787.66
39,028.17		Development Fund	40,104.06
36,054.67		Railway Safety Fund	36,051.77
15,756.05		Special Railway Safety Fund	15,756.05
1,252.31		Revenue	1,252.31
49,129.96		Rashtriya Rail Sanraksha Kosh	49,444.21
1,995.93		Miscellaneous other sources	1,995.93
261,939.79			263,841.90
	C.	**Reserves**	
833.55		Depreciation Reserve Fund	585.35
519.29		Development Fund	1,016.55
-28,398.47		Pension Fund	3,267.49
400.35		Railway Capital Fund	413.96
505.25		Railway Safety Fund	512.09
194.66		Special Railway Safety Fund	876.47
214.72		Railway Debt Service Fund	222.02
-25,730.65			6,893.93
	D.	**Deposits**	
39,341.70		(i) State Railway Provident Fund	40,292.15
##29,762.66		(ii) Miscellaneous Deposits	**21,974.81
59.80		(iii) F. Loan & Advances	57.08
69,164.17			62,324.04
	E.	**Current Liabilities**	
5,251.48		(i) Undischarged (Demands payable)	5,699.37
3.25		(ii) Outstanding dues payable to other Government Departments	3.25
5,254.73			5,702.62
689,096.52		**Grand Total**	745,646.37

* Excludes: ₹16,686.34 crore of MTPs, ₹1,911.10 crore of circular Railaways and ₹11,954.00 appropriation to SRSF and ₹45,000.00 crore appropriation to RRSK and ₹22,357.03 crore appropriation to RSF and Includes ₹56617.40 crore investment in DFCCIL and ₹16,026.70 crore invstment in Udhampur- Srinagar - Baramula Project (National Investment)

** Net laibility recoverable to end of March 2020 includes ₹5.20 crore and ₹219.81 crore from Pakistan and Bangladesh Railways respectively.

\# Excludes ₹16,636.14 crore of MTPs, ₹1,898.79 crore of Circular Railways and ₹11,954.00 crore appropriation to SRSF and ₹45,000.00 crore appropriation to RRSK, ₹22,357.03 crore appropriation to RSF and includes ₹40,987.75 core investment in DFCCIL and ₹16,026.70 crore investment of Udhampur-Srinagar-Baramula project (National Investment)

Net liability recoverable to end of March 2019 includes ₹5.20 crore and ₹219.81 crore form Pakistan and Bangladesh Railways respectively

As on March 31, 2020 (₹in crore)				II As on March 31, 2021 (₹in crore)
			ASSETS	
	F.		**Block Assets**	
		(i)	**Fixed Assets**	
32,916.24			Land	**34,805.18**
315,922.46			Buildings and track	**318,671.71**
149,677.79			Rolling stock	**160,983.04**
66,215.59			Plant and equipment	**67,063.40**
—			Miscellaneous assets	
564,732.08			Total	**581,523.33**
		(ii)	**Investments**	
3,029.14			Inventory	**3,492.36**
2,029.13			Works in progress (Workshops manufacture)	**2,225.28**
-3,778.24			Miscellaneous Advance (Capital)	**-5,166.83**
1,280.03				**550.81**
		(iii)	**Investment in other undertakings**	
—			Shares in road transport undertakings	**—**
74,396.15			Other Government undertakings	**88,651.64**
640,408.27			Total Block Assets	**670,725.78**
	G.		**Funds lying with Central Government**	
43,433.52			(Contra-items C and D)	**69,217.97**
	H.		**Current Assets**	
1,735.62			Sundry Debtors	**1,819.72**
896.80			Outstanding dues from other Government Departments	**1,571.72**
1,661.09			Outstanding Traffic Earnings	**1,216.24**
604.78			Cash in hand	**703.98**
356.44			Demands Recoverable	**390.96**
689,096.52			**Grand Total**	**745,646.37**

Gross book value as on 31st March, 2020

(₹in crore)

	Capital at-charge (Comprising loan/ account)	Capital Fund	DRF& DF including Improvement element	OLWR	U.S. Machinery and other Misc. Tools	Railway Safety Fund	RRSK	Special Railway Safety Fund	Total
Land	31,421.38	441.51	369.09	3.83	—	539.50	111.45	29.48	32,916.24
Structural Engineering Works									
Stations and offices	21,649.57	1,084.82	19,426.59	319.47	—	2,352.66	3,107.78	154.01	48,074.90
Workshops and stores buildings	13,375.91	403.25	4,284.58	126.29	—	477.95	454.43	38.79	19,161.19
Residential buildings	6,848.56	330.50	4,331.55	75.80	—	863.09	284.53	45.27	12,779.30
Track									
Formation	60,948.39	9,287.18	12,292.63	125.86	0.28	12,382.03	9,485.81	1,873.20	106,395.40
Permanent way materials	33,144.38	4,598.44	21,283.37	146.39	—	6,074.75	22,826.49	6,570.15	94,643.97
Bridges	15,118.33	1,555.74	6,036.51	36.09	—	6,707.57	3,899.06	1,494.41	34,847.71
Rolling Stock									
Locomotives and spare boilers	57,066.98	15,904.89	8,767.68	19.81	—	1,044.04	2,004.07	1,180.26	85,987.72
Carriages including Rail Cars and E.M.U. Stock	18,504.64	5,110.47	5,238.86	0.64	—	4.39	1,246.58	686.02	30,791.61
Wagons	12,859.76	4,750.48	3,638.12	1.04	—	1.02	490.78	985.73	22,726.92
Ferries	189.82	81.95	12.28	0.01	—	3.15	95.75	—	382.96
Rail-cum-road services	2,532.34	1,017.84	1,071.08	21.56	0.23	1,569.25	903.82	63.09	7,179.21
Road motor cars and carriers for public traffic	660.09	136.46	-43.23	—	—	1,828.35	27.70	—	2,609.37
Equipment (Machinery and Plants etc.) Other than Rolling Stock	34,615.02	4,640.14	17,568.27	375.51	3.01	2,206.92	4,171.09	2,635.64	66,215.59
Suspense (Floating Assets like inventories or stores holdings)@									
Stores suspense	2,985.17	—	23.57	—	—	—	20.41	—	3,029.15
Manufacture suspense	2,029.13	—	—	—	—	—	—	—	2,029.13
Miscellaneous advances	12,743.74	20.53	0.01	—	1,992.40	—	—	—	14,756.69
Investment in shares of Govt. & Other Commercial Undertaking- Road service.	38,579.42	2,984.39	0.01	0.01	—	—	0.20	—	41,564.03
Investment in shares of Govt. Commercial and Public Undertaking	31,730.79	1,101.33	—	0.01	—	—		—	32,832.13
Total	397,003.41	53,449.91	104,300.96	1,252.31	1,995.93	36,054.67	49,129.96	15,756.05	658,943.21

Note: @ Includes ₹16,636.14 crore in materopolitan Transporat Projects(Railways), ₹1,898.79 crore of Circular Railways, ₹24,062.87 crore of Udhampur - Srinagar- Baramula Project (National Investment), ₹32,933.94 crore investment in DFCCIL and excludes ₹11,954.00 crore appropriation of SRSF.

III

Gross book value as on 31st March, 2021

(₹in crore)

	Capital at-charge (Comprising loan/ account)	Capital Fund	DRF& DF including Improvement element	OLWR	U.S. Machinery and other Misc. Tools	Railway Safety Fund	RRSK	Special Railway Safety Fund	Total
Land	33,309.84	441.51	369.58	3.83	–	539.50	111.45	29.48	34,805.18
Structural Engineering Works									
Stations and offices	59,213.34	10,069.70	22,221.45	405.74	0.27	4,705.28	5,008.05	561.84	102,185.67
Workshops and stores buildings	14,207.73	403.25	4,407.56	126.29	–	494.00	540.91	38.79	20,218.51
Residential buildings	6,887.99	330.50	4,378.59	75.80	–	861.08	284.62	45.27	12,863.84
Track									
Formation	51,963.93	7,212.75	10,394.77	55.60	0.01	11,142.87	9,070.43	1,558.79	91,399.16
Permanent way materials	33,329.65	4,598.27	21,317.12	146.39	–	6,163.70	21,660.72	6,570.15	93,785.98
Bridges	15,287.39	1,555.91	6,054.93	36.09	–	6,706.49	3,673.14	1,494.41	34,809.07
Rolling Stock									
Locomotives and spare boilers	37,204.41	10,139.39	8,635.53	3.80	–	17.87	1,723.14	1,086.84	58,810.98
Carriages including Rail Cars and E.M.U. Stock	19,372.52	5,110.47	5,230.93	0.64	–	4.39	1,546.56	686.02	31,951.54
Wagons	15,128.44	4,750.48	3,646.57	1.04	–	1.02	817.50	985.73	25,330.77
Ferries	197.53	81.94	12.28	0.01	–	3.15	22.39	–	317.31
Rail-cum-road services	2,549.06	9.34	1,084.87	21.54	0.23	1,469.11	665.21	63.09	5,862.48
Road motor cars and carriers for public traffic	523.09	0.01	-57.49	–	–	1,715.64	-61.81	–	2,119.44
Equipment (Machinery and Plants etc.) Other than Rolling Stock	34,649.40	4,640.14	18,171.45	375.51	3.01	2,227.69	4,360.58	2,635.64	67,063.40
Suspense (Floating Assets like inventories or stores holdings)@									
Stores suspense	3,448.38	–	23.57	–	–	–	20.41	–	3,492.36
Manufacture suspense	2,225.28	–	–	–	–	–	–	–	2,225.28
Miscellaneous advances	12,865.44	20.53	0.01	–	1,992.40	–	–	–	14,878.39
Investment in shares of Govt. & Other Commercial Undertaking- Road service.	53,754.67	2,984.39		0.01	–	–	0.20	–	56,739.28
Investment in shares of Govt. Commercial and Public Undertaking	30,811.02	1,101.33	0.01	0.01	–	–	–	–	31,912.36
Total	426,929.10	53,449.91	105,891.72	1,252.31	1,995.93	36,051.77	49,444.21	15,756.05	690,771.00

Note: @ Includes ₹16,886.34 crore of Metropolitan Transport Projects(Raliways), ₹1,911.10 crore of Circular Railways, ₹16,026.70 crore of Udhampur- Srinagar - Baramula Project (National Investment), ₹56,617.40 crore Capital Investment in DFFCCIL and excludes ₹11,954.00 crore appropriation to SRSF.

Railways' Contribution to the Plan: Sources/Application of Funds

2019-20 (₹in crore)	SOURCE OF FUNDS	2020-21 (₹in crore)
	Internal Resources Generation	
1,589.62	Excess(+) for the year	**2,547.48**
	Contribution from Revenues and Capital to Reserve Funds	
600.00	Depreciation Reserve Fund	**400.00**
—	Spl. Railway Safety Fund	**0.00**
—	Capital Fund	**0.00**
-27,879.89	Pension Fund (Net)	**32,086.04**
—	Railway Safety Fund	**0.00**
200.76	RRSK	**0.00**
-625.52	Interest on Fund Balances	**-349.80**
-26,115.04	Total Internal Cash Balances	**34,683.73**
	Borrowing From General Revenues (Dividend Dispensed with)	
28,666.88*	(a) On Capital account	**14,296.04***
	(b) As Temporary Loans:	
—	(i) Reserve Fund	**0.00**
—	(ii) Development Fund	**0.00**
—	(iii) Capital Fund	**0.00**
	Contribution From General Revenues (Non-interest bearing)	**—**
—	(a) On account of SRSF	**0.00**
17,250.00**	(b) On account of RSF	**0.00 ** **
5,000.00	(c) On account of RRSK	**0.00**
50,916.88	Total contribution received from the General Revenues	**14,296.04**
24,801.84	**Total Source of Funds**	**48,979.77**

*Excludes ₹16,924.88 crore (DFCCIL), **₹10000 crore Trfd from RSF to RRSK.

***Excludes ₹15,629.65 crore (DFCCIL).**

2019-20 (₹in crore)	APPLICATION OF FUNDS	IV 2020-21 (₹in crore)
	Acquisition of new assets and replacement of existing assets	
	Acquisition Charged to:	
28,666.88	Capital	**14,296.04**
—	Railway Capital Fund	**—**
1,137.40	Development Fund	**1,075.89**
16,885.74	Railway Safety Fund	**(-)2.9**
15,023.88	RRSK	**314.25**
0.00	Open Line Works (Revenue)	**—**
	Replacement Charged to Depreciation	
523.80	Reserve Fund	**671.92**
62,237.70	Total Investment	**16,355.20**
	Repayment of loans obtained for:	
—	Development Fund	**—**
—	Railway Capital Fund	**—**
	Interest paid on temporary loans	
—	Development Fund	**—**
—	Railway Capital Fund	**—**
(-)27,636.61	Increase(+)/Decrease(–) in Funds Balances	**32,624.57**
34,601.08	**Total Application of Funds**	**48,979.77**
	Note:	
1,905.99	Opening balance in all Funds as on 1st April	**(-)25,730.62**
(-)25,730.62	Closing balance as on 31st March	**6,893.95**
(-)27,636.61	Increase(+)/Decrease (–) in balance comprised of:	**32,624.57**
115.51	Depreciation Reserve Fund	**(-) 248.20**
270.89	Development Fund	**497.26**
(-)28,594.57	Pension Fund	**31,665.95**
19-79	Railway Capital Fund	**13.61**
364.26	Railway Safety Fund	**2.90**
176.88	RRSK	**685.75**
10.62	Debt Service Fund	**7.30**
(-)27,636.61	**Total**	**32,624.57**

Operating Statistics

Assets

2019-20 B.G.	2019-20 M.G.	2019-20 Total including N.G.	Route/Track-kms. (000)	2020-21 B.G.	2020-21 M.G.	2020-21 Total including N.G.
			Route kms.			
39.33	–	39.33	Electrified	**44.80**	**–**	**44.80**
63.95	2.4	67.96	Total	**64.40**	**2.11**	**68.10**
			Running track kms			
67.45	–	67.45	Electrified	**74.53**	**–**	**74.53**
95.16	2.46	99.24	Total	**97.27**	**2**	**100.87**
			Total track kms			
86.25	–	86.25	Electrified	**91.77**	**–**	**91.77**
121.98	2.65	126.37	Total	**122.70**	**2.19**	**126.61**
7,023	140	7,325	**Number of stations**	**7,067**	**118**	**7,337**
			Rolling Stock (in units)			
			Locomotives			
–	26	39	Steam	**–**	**26**	**39**
4	–	87	Diesel Hydraulic & Mechanical	**4**	**–**	**86**
5,750	57	5,811	Diesel Electric	**4,964**	**54**	**5,022**
6,792	–	6,792	Electric	**7,587**	**–**	**7,587**
			Passenger Carriages			
56,658	458	57,060	Loco hauled	**58,064**	**368**	**58,760**
7,345	–	7,345	E.M.U. Trailers	**7,185**	**–**	**7,185**
4,045	–	4,045	E.M.U. Motor Coaches	**3,806**	**–**	**3,806**
1,785	8	1,793	DEMU / DHMU	**1,965**		**1,965**
9	5	23	Rail Cars	**5**	**3**	**17**
			Seats/Berths(000)			
732	0.1	732.1	Air-conditioned	**793.20**	**0.10**	**793.30**
107*	–	107*	Air-conditioned Chair Car	**111.80**	**–**	**111.80**
0.2	0.20*	1.9*	1st Class	**0.20**	**0.20**	**1.60**
3,331.40	24.3	3,370.10	2nd Class	**3,364.70**	**19.0**	**3,398.10**
1,433.70	–	1,433.70	E.M.U. Trailers (all classes)	**1,350.80**	**–**	**1,350.80**
639.10	–	639.1	E.M.U.Motor Coaches(all classes)	**606.70**	**–**	**606.7**
156.5	0.5	157.00	DEMU / DHMU	**159.9**		**159.90**
0.7	0.4	1.2	Rail Cars (all classes)	**0.40**	**0.20**	**0.80**
4,449	50	4,549	Other Coaching Vehicles (in units) (including Brake Vans)	**5,787**	**44**	**5,875**
1,738	58	1,823	Railway Service Vehicles (in units)	**2,186**	**42**	**2,245**
			Goods wagons (000)			
66	1	67	Covered wagons	**67**	**1**	**68**
187.2	0.1	187.3	Open wagons	**194.50**	**0.1**	**194.60**
23.5	0.2	23.70	Live-stock wagons, wagons for explosives, timber rail wagons, tank and misc. wagons	**24.30**	**0.2**	**24.05**
15	0.1	15.10	Departmental wagons (including brake vans)	**15.90**	**0.1**	**16**
			Ferry Stock			
–	–	–	Power Vessel	**–**	**–**	**–**
–	–	–	Dump Craft	**–**	**–**	**–**

*revised

(Figures in million)

Operation

2019-20 B.G.	2019-20 M.G.	2019-20 Total including N.G.	Train-kms.	2020-21 B.G.	2020-21 M.G.	2020-21 Total including N.G.
			Passenger and proportion of mixed			
—	0.02	0.03	Steam	—	0.01	0.03
276.62	1.54*	278.24*	Diesel	44.56	0.03	44.59
348.79	—	348.79	Electric	150.64	—	348.79
88.70	—	88.70	Electric Multiple Units	37.86	—	37.86
29.18*	—	29.18*	MEMU	35.55	—	35.55
—	—	—	DHMU	—	—	—
23.33*	—	23.33*	DEMU	4.52	—	4.52
—	—	0.03*	Rail Cars	—	—	0.04
0.08	0.04	0.12	Rail Bus	0.04	0.04	0.08
			Goods and proportion of mixed			
—	—	—	Steam	—	—	—
139.29	—	139.29	Diesel	112.77	—	112.77
256.47	—	256.47	Electric	304.85	—	304.85
			Departmental			
—	—	0.01	Steam	—	—	0.01
1.33*	—	1.33*	Diesel	3.73	—	3.74
0.51*	—	0.51*	Electric	4.20	—	4.20
0.20	—	0.20	Electric Multiple Units	0.23	—	0.23
0.37	—	0.37	MEMU	1.82	—	1.82
			Shunting and other engine kms.			
			Shunting			
—	—	—	Steam	—	—	—
45.92	0.01	50.82	Diesel	29.78	—	29.79
14.79	—	14.79	Electric	11.36	—	11.36
			Light, assisting required, assisting not required, siding and departmental			
—	—	—	Steam	—	—	—
171.98*	0.05	172.03*	Diesel	133.29	—	133.29
256.29	—	256.29	Electric	289.05	—	289.05
			Engine kms. (excl. EMUs & Rail Cars)			
			Passenger and proportion of mixed			
—	0.02	0.04	Steam	—	0.01	0.02
308.56	1.64	310.30*	Diesel	56.18	0.03	56.22
357.30	—	357.30	Electric	154.87	—	154.87
			Goods and proportion of mixed			
—	—		Steam	—	—	
325.03	—	325.03*	Diesel	264.01	—	264.01
519.02	—	519.02	Electric	600.79	—	600.79
			Departmental			
—	0.01	—	Steam	—	0.01	0.01
1.78*	0.07	1.79*	Diesel	4.10		4.11
0.53*	—	0.54	Electric	4.54	—	4.54
			Total			
—	0.03	0.05	Steam	—	0.02	0.02
635.39*	1.65	637.02	Diesel	324.29	0.04	324.34
876.68	—	876.68	Electric	760.19	—	760.19
			Vehicle kms.			
22,827.61	22.55	22,874.56	Coaching Vehicles	7,513.38	0.34	7,515.19
3,593.36	—	3,593.36	Electric Multiple Units Coaches	1,494.83	—	1,494.83
944.41	—	944.41	MEMU	124.16	—	124.16
—	—	—	DHMU	—	—	—
806.75*	—	806.75*	DEMU	212.88	—	212.88
—	—	0.03*	Rail Cars	—	—	0.04
0.08	0.04	0.12	Rail Bus	0.04	0.04	0.08
			Wagon kms.			
11,782.01	—	11,782.01	Loaded	10,763.48	—	10,763.48
18,845.72	—	18,845.72	Total	17,302.15	—	17,302.15
62.50	—	62.50	% age of loaded to total	62.20	—	62.20

*revised

2019-20 B.G.	2019-20 M.G.	2019-20 Total including N.G.	Passenger Traffic	2020-21 B.G.	2020-21 M.G.	2020-21 Total including N.G.
			Passengers originating (millions)			
			Suburban			
314.76	—	314.76	1st Class	**38.18**	**—**	**38.18**
4,282.25	—	4,282.25	2nd Class	**879.07**	**—**	**879.07**
4,597.01	—	4,597.01	Total Suburban	**917.26**	**—**	**917.26**
			Non-suburban			
3.92	—	3.92	A.C. First Class	**1.06**	**—**	**1.06**
29.83	0.00	29.83	A.C. Sleeper	**8.40**	**0.00**	**8.40**
113.45	—	113.45	A.C. 3-Tier	**32.44**	**—**	**32.44**
4.12	0.10	4.39	1st Class	**0.12**	**0.00**	**0.14**
34.13	—	34.22	A.C. Chair Car	**6.64**	**—**	**6.65**
			Sleeper Class			
342.72	0.02	342.74	Mail/Express	**103.07**	**0.00**	**103.07**
27.64	—	27.64	Ordinary	**7.83**	**—**	**7.83**
			2nd Class			
1,080.60	3.24	1,081.21	Mail/Express	**113.05**	**0.01**	**113.12**
1,835.79	7.02	1,851.28	Ordinary	**57.81**	**2.60**	**60.41**
3,472.22	7.44	3488.71*	Total Non-suburban	**330.45**	**2.61**	**333.15**
8,069.24	7.44	8,085.73	Total Suburban and Non-suburban	**1,247.72**	**2.61**	**1,250.41**
			Passenger kms. (millions)			
			Suburban			
9,937.74	—	9,937.74	1st Class	**1,367.78**	**—**	**1,367.78**
127,192.48	—	127,192.48	2nd Class	**28,707.04**	**—**	**28,707.04**
137,130.22	—	137,130.22	Total Suburban	**30,074.83**	**—**	**30,074.83**
			Non-suburban			
2,312.83	—	2,312.83	A.C. First Class	**742.79**	**—**	**742.79**
22,771.38	—	22,771.38	A.C. Sleeper	**7,608.63**	**—**	**7,608.63**
95,592.73	—	95,592.73	A.C. 3-Tier	**32,173.66**	**—**	**32,173.66**
336.07	2.56	350.21	1st Class	**7.49**	**-0.10**	**7.50**
10,660.97	—	10669.04 *	A.C. Chair Car	**2,151.94**	**—**	**2,152.92**
			Sleeper Class			
267,621.79	0.17	267,629.12	Mail/Express	**98,476.97**	**0.14**	**98,476.55**
1,848.14	0.03	1,848.14	Ordinary	**-14.23**	**0.00**	**-14.23**
			2nd Class			
383,781.40	60.88	383,858.41	Mail/Express	**55,437.75**	**6.61**	**55,447.36**
127,930.19	410.12	128,575.92	Ordinary	**4,323.77**	**132.42**	**4,456.02**
912,855.53	473.74	913,607.82	Total Non-suburban	**200,908.80**	**139.06**	**201,051.23**
1,049,985.76	473.74	1,050,738.05	Total Suburban and Non-suburban	**230,983.63**	**139.06**	**231,126.06**
			Average lead (kms.)			
			Suburban			
31.60	—	31.60	1st Class	**35.80**	**—**	**35.80**
29.70	—	29.70	2nd Class	**32.70**	**—**	**32.70**
29.80	—	29.80	Total Suburban	**32.80**	**—**	**32.80**
			Non-suburban			
588.90	—	589.40	A.C. First Class	**697.20**	**—**	**697.90**
762.30	—	763.30	A.C. Sleeper	**903.70**	**—**	**905.10**
842.20	—	842.60	A.C. 3-Tier	**991.70**	**—**	**991.70**
81.50	25.00	79.70	1st Class	**60.80**	**51.20**	**53.50**
312.30	—	311.70	A.C. Chair Car	**323.80**	**—**	**323.40**
			Sleeper Class			
780.10	855.00	780.80	Mail/Express	**955.10**	**1,460.00**	**955.40**
66.80	—	66.90	Ordinary	**-1.80**	**—**	**-1.80**
			2nd Class			
354.60	176.90	355.00	Mail/Express	**488.80**	**380.20**	**490.20**
69.60	56.90	69.50	Ordinary	**74.50**	**50.90**	**73.80**
262.50	61.90	261.90	Total Non-suburban	**606.80**	**53.10**	**603.50**
130.00	61.90	129.90	Total Suburban & Non-suburban	**185.00**	**53.10**	**184.80**

*revised

Traffic and Earnings

2019-20 B.G.	2019-20 M.G.	2019-20 Total including N.G.	Passenger Earnings (₹crore)	2020-21 B.G.	2020-21 M.G.	2020-21 Total including N.G.
			Suburban			
433.00	—	433.00	1st Class	58.86	—	58.86
2,410.08	—	2,410.08	2nd Class	530.43	—	530.43
2,843.08	—	2,843.08	Total Suburban	589.30	—	589.30
			Non-suburban			
632.82	—	632.82	A.C. First Class	260.67	—	260.67
3,778.96 *	—	3,778.96	A.C. Sleeper	1,472.01	—	1,472.01
12,369.94	—	12,369.93	A.C. 3-Tier	4,750.48	—	4,750.48
15.51	2.09	29.30	1st Class	1.28	-0.03	2.65
1,751.07	—	1,753.78	A.C. Chair Car	390.27	—	390.47
			Sleeper Class			
13,551.10	0.01	13,551.60	Mail/Express	5,435.90	0.01	5,435.88
89.54	0.00	89.54	Ordinary	-1.54	0.00	-1.54
			2nd Class			
12,559.79	2.34	12,563.05	Mail/Express	2,130.93	0.35	2,131.53
3,038.28	12.40	3,057.01	Ordinary	213.24	3.74	216.99
47,787.02	16.83	47,826.01	Total Non-suburban	14,653.28	4.08	14,659.18
50,630.11	16.83	50,669.09	Total Suburban and Non-suburban	15,242.59	4.08	15,248.48
			Average rate/passenger km. (paise)			
			Suburban			
43.6	—	43.6	1st Class	43.0	—	43.0
18.9	—	18.9	2nd Class	18.5	—	18.5
20.7	—	20.7	All Classes (suburban)	19.6	—	19.6
			Non-Suburban			
273.6	—	273.6	A.C. First Class	350.9	—	350.9
166	—	166	A.C. Sleeper	193.5	—	193.5
129.4	—	129.4	A.C. 3-Tier	147.7	—	147.7
46.2	813.1	83.7	1st Class	171.2	283.6	354.5
164.3	—	164.4	A.C. Chair Car	181.4	—	181.4
			Sleeper Class			
50.6	46.8	50.6	Mail/Express	55.2	63.7	55.2
48.4	66.7	48.4	Ordinary	108.3	100	108.3
			2nd Class			
32.7	38.4	32.7	Mail/Express	38.4	54.4	38.4
23.7	30.2	23.8	Ordinary	49.3	28.3	48.7
52.3	35.5	52.3	All Classes (Non-suburban)	72.9	29.4	72.9
48.2	35.5	48.2	Total Suburban and Non-suburban	66.0	29.4	66.0
			Freight Traffic			
			Tonnes originating (000's)			Total of BG
1,208,415.00	—	1,208,415.00	Revenue earning	1,230,944.00	—	1,230,944.00
3,809.00	—	3,809.00	Non-revenue	2,905.00	—	2,905.00
1,212,224.00	—	1,212,224.00	Total	1,233,849.00	—	1,233,849.00
			Net tonne kms. (millions)			
707,665.00	—	707,665.00	Revenue-earning	719,762.00	—	719,162.00
369.00	—	369.00	Non-revenue	292.00	—	292.00
708,034.00	—	708,034.00	Total	720,054.00	—	720,054.00
111,472.30		111,472.30	Earnings from carriage of goods traffic	115,738.00		115,738.00
			Average lead (kms.)			
586.00	—	586.00	Revenue-earning	585.00	—	585.00
97.00	—	97.00	Non-revenue	100.00	—	100.00
584.00	—	584.00	Total	584.00	—	584.00
157.52	—	157.52	Average rate/tonne km. (paise)	160.80	—	160.80

*revised

Utilisation of Rolling Stock

VID

2019-20				2020-21		
B.G.	M.G.	N.G.	**Vehicle and Wagon usage**	**B.G.**	**M.G.**	**N.G.**
			Vehicle kms./Vehicle day			
534	114	77	Passenger vehicles	**185**	**113**	**14**
439	9	49	Other coaching vehicles	**439**	**–**	**41**
188.7	–	–	Wagon kms./wagon day	**181.5**	**–**	**–**
5.30	–	–	Wagon turn-round (days)	**5.43**	**–**	**–**
7057	–	–	Net tonne kms./wagon day	**6861**	**–**	**–**
61.3	–	–	Avgerage wagon load during the run (tonnes) (in terms of 8-wheelers)	**68.8**	**–**	**–**
			Average speed of goods trains (kms. per hour)			
			Through goods trains			
–	–	–	Steam	**–**	**–**	**–**
23.4	–	–	Diesel	**40.6**	**–**	**–**
25.4	–	–	Electric	**45.8**	**–**	**–**
23.6	–	–	All Traction	**43.2**	**–**	**–**
			All goods trains			
–	–	–	Steam	**–**	**–**	**–**
23.4	–	–	Diesel	**40.6**	**–**	**–**
25.4	–	–	Electric	**45.8**	**–**	**–**
23.6	–	–	All Traction	**43.2**	**–**	**–**
			Engine usage			
			Engine kms./day/engine on line			
–	35*	–	Steam	**–**	**10**	**17**
380*	–	–	Diesel	**646**	**186**	**61**
336*	–	–	Electric	**524**	**–**	**–**
			Net tonne kms./goods loco day on line			
–	–	–	Steam	**–**	**–**	**–**
240,027	–	–	Diesel	**4,92,526**	**–**	**–**
293,461	–	–	Electric	**3,67,735**	**–**	**–**
			Net tonne kms./goods loco day in use			
–	–	–	Steam	**–**	**–**	**–**
255,927	–	–	Diesel	**5,83,477**	**–**	**–**
316,362	–	–	Electric	**4,16,434**	**–**	**–**
14,287*	–	–	Net tonne kms./goods engine hour (All traction)	**13,881**	**–**	**–**
			Average load of goods trains (tonnes)			
1,763*	–	–	Net Load	**1,738**	**–**	**–**
3,025*	–	–	Gross load (incl. weight of engine)	**2,925**	**–**	**–**

*revised

General

2019-20 B.G.	2019-20 M.G.	2019-20 Total including N.G.		2020-21 B.G.	2020-21 M.G.	2020-21 Total including N.G.
			Density-			
33.52*	1.70*	32.24*	Train kms./running track kms./day	**18.62**	**0.10**	**17.96**
22.08*	1.74*	21.30*	Passenger train kms./running track kms./day	**8.98**	**0.05**	**8.57**
11.43*	0.01*	10.96*	Goods train kms./running track kms./day	**15.40**	**0.02**	**14.67**
			Repair of Rolling Stock (ineffective %age)			
7.54	2.08*	7.63	Locomotives	**9.77**	**31.9**	**8.78**
6.14	6.92	6.15	Passenger Carriages	**6.17**	**10.36**	**6.20**
5.08	—	5.30	Other Coaching Vehicles	**5.22**	**—**	**5.38**
12.20	—	12.20	E.M.U. Coaches	**10.0**	**—**	**10.0**
3.07	79.10	3.07	Wagons	**4.52**	**85.71**	**3.45**
			Fuel consumption by locos			
—	—	1.00	Coal (000 tonnes)	**—**	**—**	**1.00**
2,373.00	2.00	2,380.00	Diesel oil (000 kilolitres)	**954.00**	**—**	**954.00**
18,409.00	—	18,409.00	Electricity (million kwt. hrs.)	**14,092.00**	**—**	**14,092.00**
1,268.00	—	1,268.00	Electricity consumed by E.M.U. suburban services (million kwt. hrs.)	**5,566.00**	**—**	**5,566.00**
			Consumption/1,000 gross tonne km.			
—	—	536.40	Passenger and proportion of mixed Coal (kg.)	**—**	**—**	**536.40**
3.59	5.84	3.60	Diesel oil (litres)	**3.31**	**5.84**	**3.32**
18.40	—	18.40	Electricity (kwt. hrs.)	**15.60**	**—**	**15.60**
			Goods and proportion of mixed Coal (kg.)			
—	—	—	Diesel oil (litres)	**—**	**—**	**—**
1.92	—	1.92	Electricity (kwt. hrs.)	**1.92**	**—**	**1.92**
6.13	—	6.13		**7.09**	**—**	**7.09**

Groups A&B	Group C	Group D	Total	**Personnel**	**Groups A&B**	**Group C**	**Group D**	**Total**
				Number (000)				
14.17	1,165.15	–	1,179.32	Open line	**14.25**	**1,163.275**	**–**	**1,177.53**
1.74	13.89	–	15.63	Construction	**1.78**	**13.61**	**–**	**15.39**
1.00	41.53*	–	42.53*	Production Units	**0.97**	**41.02**	**–**	**41.98**
1.59	15.32*	–	16.41*	Railway Board and other Railway offices	**1.61**	**15.84**	**–**	**17.45**
18.50	1,235.89*	–	1,254.39*	Total	**18.61**	**1,233.74**	**–**	**1,252.35**
6,344.46*	1,49,898.70*	–	1,56,243.06*	Total wage (₹in crore)	**5,693.80**	**1,51,036.506**	**–**	**1,56,730.29**
3,415.48	1,199.50	–	1,230.64	Average annual wage/employee (₹in '000)	**3,057.40**	**1,222.51**	**–**	**1,249.75**
				Stores purchases (₹in crore)				
	63,052			Indigenous		**63,052**		
				Imported				
	486			Direct		**486**		
	305			Purchased in India		**305**		
	63,843			Total		**63,843**		

*revised

Statistical Summary—Indian Railways

As on March 31	1950-51	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	As on March 31
Assets																	**Assets**
@ Capital-at-charge (₹in crore)	827	1,520.90	3,330.30	6,096.30	16,125.80	43,051.88	1,43,220.57	1,83,488.08	2,08,844.28	2,42,116.97	2,75,135.23	3,02,457.78	3,24,725.64	3,48,601.77	3,74,591.87*	**3,87,689.69**	@ Capital-at-charge (₹ in crore)
Total Investment (₹in crore)	855.20	1,868.60	4,099.40	7,448.40	22,200.50	63,341.01	2,31,615.25	2,89,374.87	3,24,662.40	3,68,758.21	4,19,123.61	4,71,776.39	5,17,324.19	5,73,641.66	6,40,408.27	**6,70,725.78**	Total Investment (₹ in crore)
Route kilometres–																	**Route kilometres–**
Electrified	388	748	3,706	5,345	9,968	14,856	19,008	20,884	21,614	22,224	23,555	25,367	29,228	34,319	39,329	**44,802**	Electrified
Total	53,596	56,247	59,790	61,240	62,367	63,028	64,173	65,080	65,426	65,600	66,252	66,918	66,935	67,415	67,956	**68,103**	Total
Running Track kms–																	**Running Track kms–**
Electrified	937	1,752	7,447	10,474	18,954	27,937	36,007	38,524	39,661	41,038	43,357	48,239	51,242	59,142	67,452	**74,534**	Electrified
Total	59,315	63,602	71,669	75,860	78,607	81,865	87,114	89,236	89,919	90,803	92,084	93,902	94,270	95,981	99,235	**1,00,866**	Total
Number of stations	5,976	6,523	7,066	7,035	7,100	6,843	7,133	7,172	7,112	7,137	7,216	7,309	7,318	7,321	7,325	**7,337**	**Number of stations**
Rolling Stock (in units)–																	**Rolling Stock (in units)–**
Locomotives:																	Locomotives:
Steam	8,120	10,312	9,387	7,469	2,915	54	43	43	43	43	39	39	39	39	39	**39**	Steam
Diesel	17	181	1,169	2,403	3,759	4,702	5,137	5,345	5,633	5,714	5,869	6,023	6,086	6,049	5,898	**5,108**	Diesel
Electric	72	131	602	1,036	1,743	2,810	4,033	4,568	4,823	5,016	5,214	5,399	5,639	6,059	6,792	**7,587**	Electric
Coaching stock–																	Coaching stock–
Passenger carriages	13,022	20,062	24,591	27,410	28,677	33,236	45,048	48,037	50,194	51,798	53,140	53,638	54,059	55,258	57,121*	**58,760**	Passenger carriages
EMU/DMU/DHMU	460	846	1,750	2,625	3,142	4,668	8,053	9,184	9,371	9,725	10,210	10,617	11,246	12,315	13,234*	**12,956**	EMU/DMU/DHMU
Rail Cars	87	116	85	68	24	22	34	35	35	35	31	30	21	24	23	**17**	Rail Cars
Other coaching vehicles	6,059	7,415	8,719	8,230	6,668	4,731	6,500	6,622	6,792	7,000	6,704	6,699	6,499	6,406	6,611*	**8,102**	Other coaching vehicles
Wagons	2,05,596	3,07,907	3,83,990	4,00,946	3,46,102	2,22,193	2,29,997	2,44,818	2,52,833	2,54,018	2,51,295	2,77,992	2,79,308	2,89,175*	2,93,011*	**3,02,624**	Wagons
Personnel																	**Personnel**
No. of employees (in thousands)	914	1,157	1,374	1,572	1,652	1,545	1,332	1,307	1,334	1,326	1,330	1,309	1,270	1,228*	1,254	**1,252**	No. of employees (in thousands)
Wage Bill (₹ in crore)	113.8	205	460	1,317	5,166	18,841	51,777	67,004	75,893	84,760	93,001	1,18,501.74	1,28,714.74	1,35,171.13*	1,56,243.06*	**1,56,730.29**	Wage Bill (₹ in crore)
Average wage per employee (in ₹)	1,263	1,799	3,398	8,435.00	31,864.00	1,21,281.00	3,94,112.00	5,27,295.00	5,85,620.00	6,51,376.00	7,15,726.00	9,08,263	10,18,501	11,02,934*	12,45,328*	**12,49,755**	Average wage per employee (in ₹)
For the year																	**For the year**
Transportation output																	**Transportation output**
Train kms. (excl.deptt.) (in millions)–																	Train kms. (excl.deptt.) (in millions)–
Passenger and proportion of mixed	163.4	205.1	248.7	294.6	364.5	453.2	655.4	703.8	733.4	760.8	770.3	788.45	768.64	777.88*	770.41*	**244.72**	Passenger and proportion of mixed
Goods and proportion of mixed	111.5	161.2	202.4	199.5	244.9	261.1	368.9	400.8	418.8	401.9	393.44	391.09	393	413*	397*	**418**	Goods and proportion of mixed
Vehicle and wagon kms. (excl. deptt. and brake vans) (in millions)–																	Vehicle and wagon kms. (excl. deptt. and brake vans) (in millions)–
Vehicle kms.	2,802	3,799	5,011	6,189	8,585	12,067	19,646	22,309	23,542	24,812	25,327	26,332	26,191	26,463	26,398*	**8,114**	Vehicle kms.
Wagon kms.	4,370	7,507	10,999	12,165	19,230	27,654	17,749	18,912	19,546	18,930	18,708	18,403	18,461	19,364	18,846	**19,020**	Wagon kms.
NTKms./Wagon day (BG) (8-wheelers)	710	998	908	986	1,407	2,042	9,247	9,267	8,547	8,113	7,510	7,359	7,405	7,747	7,057	**6,861**	NTKms./Wagon day (BG) (8-wheelers)
Volume of traffic																	**Volume of traffic**
Passenger traffic–																	Passenger traffic–
No. of passengers originating (in millions)	1,284	1,594	2,431	3,613	3,858	4,833	7,651	8,421	8,397	8,224	8,107	8,116	8,286	8,439	8,086	**1,250**	No. of passengers originating (in millions)
Passenger kms. (in millions)	66,517	77,665	1,18,120	2,08,558	2,95,644	4,57,022	9,78,508	10,98,103	11,40,412	11,47,190	11,43,039	11,49,835	11,77,699	11,57,174	10,50,738*	**2,31,126**	Passenger kms. (in millions)
Passenger earnings (₹ in crore)	98	132	296	828	3,145	10,483	25,706	31,323	36,532	42,190	44,283	46,280	48,643	51067*	50,669*	**15,248**	Passenger earnings (₹ in crore)
Average lead (in kms.)	51.8	48.7	48.6	57.7	76.60	94.60	127.90	130.40	135.80	139.50	141.00	141.70	142.10	137.1	129.9	**184.8**	Average lead (in kms.)
Average rate per passenger-km. (in paise)	1.48	1.71	2.5	3.97	10.64	22.94	26.3	28.5	32	36.8	38.7	40.3	41.3	44.1	48.2	**65.97**	Average rate per passenger-km. (in paise)
Freight Traffic–																	Freight Traffic–
Tonnes originating (in millions):																	Tonnes originating (in millions):
Revenue earning traffic	73.2	119.8	167.9	195.9	318.4	473.5	921.73	1,008.09	1,051.64	1,095.26	1,101.51	1,106.15	1,159.55	1,221.48	1,208.41	**1,230.94**	Revenue earning traffic
Total traffic	93	156.2	196.5	220	341.4	504.2	926.43	1,014.15	1,058.81	1,101.09	1,108.62	1,110.95	1,162.64	1,225.29	1,212.22	**1,233.85**	Total traffic
Net tonne kms. (in millons):																	Net tonne kms. (in millons):
Revenue earning traffic	37,565	72,333	1,10,696	1,47,652	2,35,785	3,12,371	6,25,723	6,49,645	6,65,810	6,81,696	6,54,481	6,20,175	6,92,916	7,38,523	7,07,665	**7,19,762**	Revenue earning traffic
Total traffic	44,117	87,680	1,27,358	1,58,474	2,42,699	3,15,516	6,26,473	6,50,625	6,66,728	6,82,612	6,55,605	6,20,858	6,93,281	7,38,923	7,08,034	**7,20,054**	Total traffic
Earnings from freight carried excl.																	Earnings from freight carried excl.
wharfage & demurrage charges (₹ in crore)	139.3	280.5	600.7	1,550.90	8,247.00	23,045.41	60,687.05	83,478.83	91,570.85	1,03,100.15	1,06,940.55	1,02,027.82	1,13,523.53	1,22,580.31	1,11,472.30	**1,15,738.38**	wharfage & demurrage charges (₹ in crore)
Average lead-Total traffic (in kms.)	470	561	648	720	711	626	676	642	630	620	591	559	596	603	584	**584**	Average lead-Total traffic (in kms.)
Average rate per tonne km. (in paise)	3.16	3.87	5.43	10.5	35	73.78	96.99	128.5	137.53	151.24	163.4	164.51	163.83	166	158	**161**	Average rate per tonne km. (in paise)
Quantity of fuel consumed by locomotives																	**Quantity of fuel consumed by locomotives**
Coal (in thousand tonnes)	9,504	14,800	14,338	11,079	4,483	4	1	1	1	1	1	1	1	1	1	**1**	Coal (in thousand tonnes)
Diesel oil (in kilo-litres)	N.A	62,771	5,69,025	10,67,477	17,12,816	19,99,262	25,16,044	26,99,616	2,789.26	28,56,185	28,74,950	27,92,963	27,78,431	27,49,003	23,79,865	**9,54,161**	Diesel oil (in kilo-litres)
Electricity (Million KWH)	N.A	N.A.	N.A.	N.A.	4,249	7,933	13,572	13,853	15,169.16	15,743	15,701	15,666.46	16,634.17	17,681.79	18,409.90	**14,092.42**	Electricity (Million KWH)
Stores purchases (₹ in crore)																	**Stores purchases (₹ in crore)**
Indigenous	63.2	158.1	331.1	1,233.30	4,749.20	10,381.80	28,017	33,780	40,258	41,351	41,802	41,854	48,495	61,078	63,052	**49,640**	Indigenous
Total	81.6	177.9	363.7	1,337.10	5,189.30	10,835.20	29,099	36,027	42,447	42,764	43,131	43,347	49,485	62,134	63,844	**50,092**	Total
Operating Revenue and Expenditure (₹ in cr)																	**Operating Revenue and Expenditure (₹ in crore)**
Gross revenue receipts	263.3	460.42	1,006.95	2,703.48	12,451.55	36,010.95	96,681.02	1,26,180.43	1,43,213.87	1,61,017.25	1,68,379.60	1,65,382.48	1,78,929.64	1,90,507.37	1,74,694.69	**1,40,783.55**	Gross revenue receipts
Working expenses incl. depreciation etc. and miscellaneous expenses	215.74	372.55	862.22	2,575.99	11,337.77	34,939.72	90,334.88	1,12,565.24	1,31,464.80	1,44,178.76	1,49,151.13	1,60,469.48	1,77,264.03	1,86,733.51	1,73,105.07	**1,38,236.06**	Working expenses incl. depreciation, etc. and miscellaneous expenses
Net revenue receipts	47.56	87.87	144.73	127.49	1,113.78	1,071.23	6,346.14	13,615.19	11,749.07	16,838.49	19,228.48	4,913.00	1,665.61	3,773.86	1,589.62	**2,547.48**	Net revenue receipts
Percentage of net revenue receipts to the Capital-at-charge	5.75	5.77	4.35	2.09	6.91	2.49	4.43	7.42	5.63	6.95	7	1.62	0.51	1.08	0.42	**0.66**	Percentage of net revenue receipts to the Capital-at-charge/Capital Investment
Operating ratio (per cent	81	78.75	84.13	96.07	91.97	98.34	94.59	90.19	93.6	91.3	90.5	96.5	98.4	97.3	98.4	**97.4**	Operating ratio (per cent)
Dividend to General Revenues and payment to States in lieu of tax on passenger fares	32.51	55.86	164.57	325.36	938.11	307.64	4,941.25	5,348.94	8,008.67	9,173.55	8,722.51	–	–	–	–	**–**	Dividend to General Revenues and payment to States in lieu of tax on passenger fares
Excess(+)/Shortfall(-)	(+) 15.05	(+) 32.01	(-) 19.84	(-) 197.87	(+) 175.67	(+) 763.59	(+) 1,404.89	(+)8,266.25	(+)3,740.4	(+)7,664.94	(+)10,505.97	(+)4,913.00	(+)1,665.61	(+)3,773.86	(+)1589.62	**(+)2,547.48**	Excess(+)/Shortfall(-)
Output Cost (BG)																	**Output Cost (BG)**
Cost/Vehicle km (₹)	N.A	N.A.	0.84	2.09	6.05	13.83	26.15	30.72	35.06	36.88	38.46	40.27	40.05*	43.24*	46.25	**114.02**	Cost/Vehicle km (₹)
Cost/Wagon km (₹)	N.A	0.33	0.57	1.24	3.2	6.52	23.35	25.79	30.85	35.3	35.46	34.95	38.54*	39.57*	44.97	**52.56**	Cost/Wagon km (₹)

@ From 2016-17 Capital-at-charge to be read as capital Investment
* revised



Published by Directorate of Statistics and Economics
Ministry of Railways (Railway Board), Government of India, New Delhi