



# INDIAN RAILWAYS ANNUAL REPORT & ACCOUNTS 2019-20

(With highlights of the performance for 2020-21)



सत्यमेव जयते

भारत सरकार  
रेल मंत्रालय  
(रेलवे बोर्ड)



एक कदम स्वच्छता की ओर





# INDIAN RAILWAYS

## ANNUAL REPORT & ACCOUNTS

### 2019-20

(With highlights of the performance for 2020-21)



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



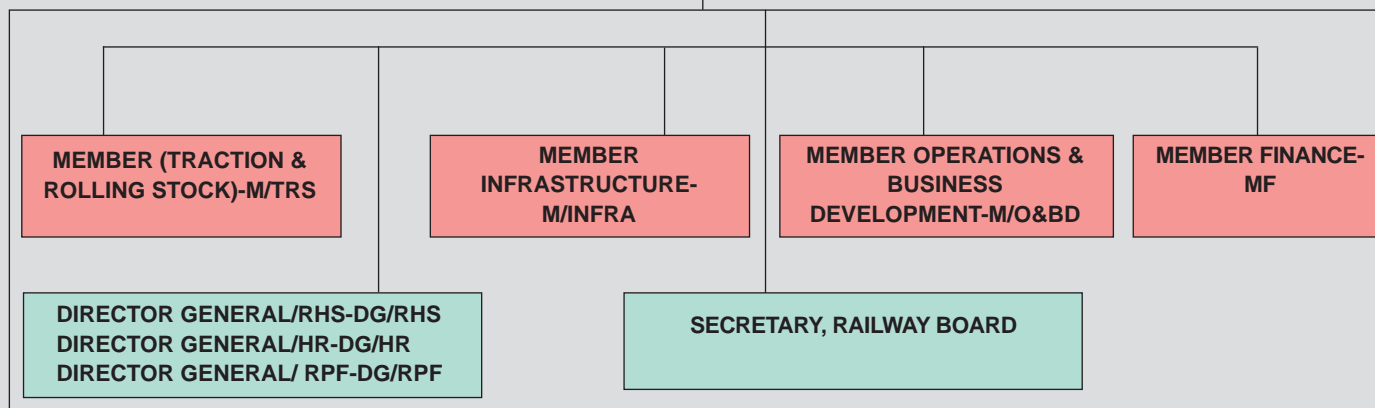
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# ORGANIZATION STRUCTURE OF INDIAN RAILWAYS

**MINISTER OF RAILWAYS**

**CHAIRMAN & CEO,  
RAILWAY BOARD**



**ZONAL RAILWAYS  
(OPEN LINE)**

**PRODUCTION UNITS**

**OTHER UNITS**

**CPSE/CORP &  
AUTONOMOUS BODIES/  
AUTHORITIES**

GENERAL MANAGERS
1. CENTRAL
2. EASTERN
3. EAST CENTRAL
4. EAST COAST
5. NORTHERN
6. NORTH CENTRAL
7. NORTH EASTERN
8. NORTHEAST FRONTIER
9. NORTH WESTERN
10. SOUTHERN
11. SOUTH CENTRAL
12. SOUTH EASTERN
13. SOUTH EAST CENTRAL
14. SOUTH WESTERN
15. WESTERN
16. WEST CENTRAL
17. METRO**
18. SOUTH COAST#

GENERAL MANAGERS
CHITTARANJAN LOCOMOTIVE WORKS, CHITTARANJAN
BANARAS LOCOMOTIVE WORKS, VARANASI
INTEGRAL COACH FACTORY, PERAMBUR
RAIL COACH FACTORY, KAPURTHALA
RAIL WHEEL FACTORY, YELAHANKA
MODERN COACH FACTORY, RAE BARELI
CAO (R)*
DIESEL LOCO MODERNIZATION WORKS, PATIALA
RAIL WHEEL PLANT, BELA

GENERAL MANAGERS
CENTRAL ORGANIZATION FOR RAILWAY ELECTRIFICATION, ALLAHABAD
NF RAILWAY (CONSTRUCTION), GUWAHATI
DG & EX-OFFICIO GM RDSO, LUCKNOW
DIRECTOR GENERAL, NATIONAL ACADEMY OF INDIAN RAILWAYS, VADODARA
CAO (R)*
CENTRAL ORGANIZATION FOR MODERNISATION OF WORKSHOPS (COFMOW)
INDIAN RAILWAY ORGANIZATION FOR ALTERNATE FUELS (IROAF)

BCL
BSCL
BWEL
CONCOR
DFCCIL
IRCON
IRCTC
IRFC
KMRCL
KRCL
MRVC
RCIL
RITES
RVNL
CRIS
RLDA

\*\*METRO RLY, KOLKATA.

\*CHIEF ADMINISTRATIVE OFFICER (RAILWAYS)

#New Zone approved by the Cabinet. Preparatory work is in process.



# Apex Management

## Minister of Railways

**Piyush Goyal**

## Members, Railway Board

Chairman and Chief Executive Officer (CEO)	Suneet Sharma
Member(Finance)	Naresh Salecha
Member (Operation and Business Development)	P.S. Mishra
Member (Traction & Rolling Stock)	Rajesh Tiwari
Member (Infrastructure)	Pradeep Kumar
Secretary	Sushant Kumar Mishra

## Directors-General

DG/RPF	Arun Kumar
DG/RHS	B.P. Nanda
DG/HR	Anand Singh Khati

## General Managers, Zonal Railways

Central	Sanjeev Mittal
Eastern	Manoj Joshi*
East Central	L.C. Trivedi
East Coast	Vidya Bhushan
Metro Rly./Kolkata	Manoj Joshi
Northern	Ashutosh Gangal
North Central	V.K. Tripathi*
North Eastern	V.K. Tripathi
Northeast Frontier	Anshul Gupta
North Western	Anand Prakash
Southern	John Thomas
South Central	Gajanan Mallya
South Eastern	Sanjay Kumar Mohanty
South East Central	Goutam Banerjee
South Western	A.K. Singh
Western	Alok Kansal
West Central	Shailendra Kumar Singh

## General Managers, Production Units

Chittaranjan Locomotive Works	Satish K Kashyap
Banaras Locomotive Works	Anjali Goyal
Integral Coach Factory	Rahul Jain
Rail Wheel Factory	Rajiv Kumar Vyas
Rail Coach Factory, Kapurthala	Ravinder Gupta
Modern Coach Factory, Rae Bareilly	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
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## Director-General and Ex-Officio General Manager

Research, Designs and Standards Organization	Virendra Kumar
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## Chief Administrative Officers (Railways)

Central Organization for Modernization of Workshops	Arun Kumar Sharma
Diesel Loco Modernization works	S.N. Dubey
Rail Wheel Plant, Bela	Shubhanshu

\*Looking after.

(As on 1<sup>st</sup> January, 2021)



# IR GEARED UP TO



# FIGHT COVID-19





# Review-Prospects

## Results : 2019-20

### Financial Performance

The year 2019-20 ended with an excess of earning over expenditure to the tune of ₹1,589.62 crore which was appropriated to Development Fund (₹1,388.86 crore) and Rashtriya Rail Sanraksha Kosh (RRSK) (₹200.76 crore)

### Freight Operation

	2018-19	2019-20	Absolute Variation	% age Variation
Revenue Originating Tonnes (million)	1,221.48	1208.41	-13.07	-1.07
Revenue Net Tonne Kms. (billion)	738.52	707.67	-30.85	-4.18
Goods Earnings @ (₹ in crore)	1,22,580.31	1,11,472.30	-11,108.01	-9.06

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

### Passenger Business

	2018-19	2019-20	Absolute Variation	% age Variation
Number of Passengers carried (million)	8,439	8,086	-353	-4.18
Passenger Kilometers (billion)	1,157	1,051	-106	-9.16
Passenger Earnings (₹ in crore)	51,066.65	50,669.09	-397.56	-0.78

### Engineering Works

During the year 2019-20 the following Engineering Works were accomplished :

	2019-20 (in km.)
Construction of New Lines	359.71
Conversion to Broad Gauge	408.49
Track Renewal	4,500

### Electrification

4,378 kms. of IR's route was electrified during 2019-20.

### Safety, Signal and Telecom

Details of consequential train accidents and train accidents per million train kilometres (an important index of Safety) during 2019-20 as compared to 2018-19 are given below :

	2018-19	2019-20
Consequential Train Accidents	59	54*
Train Accidents Per Million Train Kilometres	0.05	0.05

\*excluding Konkan Railway



Isolation facility in a coach on Indian Railways for COVID-19 patients



A view of Khurda Road Station, ECoR



ER Doctors and medical staff are on duty round-the-clock



In house production of Sanitiser by SER for distribution among front line staff



North Central Railway on the forefront to safeguard Country from COVID-19

Following steps were taken for improving passenger amenities :

Provision	2019-20 (No. of Stations)
Public Address System	4,508
Train Display Board	1,137
Coach Guidance System	649

## Operating Efficiency

Some important efficiency indices for 2019-20 compared to 2018-19 were as follows:

Efficiency Index	Broad Gauge		Metre Gauge	
	2018-19	2019-20	2018-19	2019-20
Net tonne kms. per wagon per day	7,747	7,057	-	-
Speed (kmph) of all goods trains (all traction)	23.2	23.6	-	-
Percentage of loaded to total wagon km	64.9	62.5	-	-
Net load per goods train (tonnes)	1,738	1,728	-	-
Net tonne km per engine hour	16,345*	14,390	-	-
Passenger vehicle km per vehicle per day	533	534	115	114

\*Revised

## 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 15% (without fuel) and 10% (with fuel) during 2019-20 as compared to 9% (without fuel) and 6% (with fuel) during last year. The disposal of condemned Rolling Stock and scrap arising was monitored closely.

## Managing the Environment

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

As on 31<sup>st</sup> March, 2020, IR had 12,53,592 regular employees as against 12,27,713\* as on 31<sup>st</sup> March, 2019 an Increase by 25,879.

\*Revised

Industrial Relation remained cordial during 2019-20. Productivity Linked Bonus equivalent to 78 days' wages was paid to all non-gazetted employees (excluding RPF/RPSF personnel) for 2019-20. RPF/RPSF personnel belonging to Group C and D categories were sanctioned an ad hoc bonus equivalent to 30 days' wages.

### 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.

### Performance: 2020-21 (1st April, 2020-31st December, 2020)

#### Passenger Business\*

During April-December, 2020-21, the number of originating passengers on IR was 453.98 million vis-à-vis 6,280.59 million during the corresponding period of 2019-20, registering a decrease of (-)92.77%. The Passenger earnings during this period was ₹6,718.13 crore showing a decrease by ₹32,768.97 crore (-82.99%) compared to the earnings during the corresponding period of the year 2019-20.

#### Freight Operation\*\*

Loading of revenue-earning traffic for the year 2020-21 (upto December, 2020) compared to the corresponding period of last year, was as under:

Commodity	April to Dec., 2019 2019-20	(Million tonnes) April to Dec., 2020 2020-21
Coal	431.12\$	<b>381.24</b>
Raw material for steel plants Except Iron Ore	19.11	<b>17.30</b>
Pig iron and finished steel	39.39	<b>41.49</b>
Iron ore	112.74	<b>111.32</b>
Cement	79.91	<b>80.43</b>
Food grains	27.69	<b>50.47</b>
Fertilizers	39.45	<b>43.32</b>
P.O.L (Mineral Oil)	33.06	<b>31.08</b>
Balance other goods	106.69	<b>112.20</b>
Total revenue earning traffic	889.16\$	<b>868.85</b>
*Based on Statement of Gross Earning on originating basis.		
**Based on Statement 7-A		
\$ Revised		

Total freight earnings (including 'Other Goods Earnings' such as wharfage, demurrage, etc.) in the first nine months (April-December) of 2020-21 stood at ₹81,764.68 crore which shows a decrease of (-)₹500.17 crore (-0.61%) over the earnings in the corresponding period of the previous year.



A view of Headquarter, SECR, Bilaspur

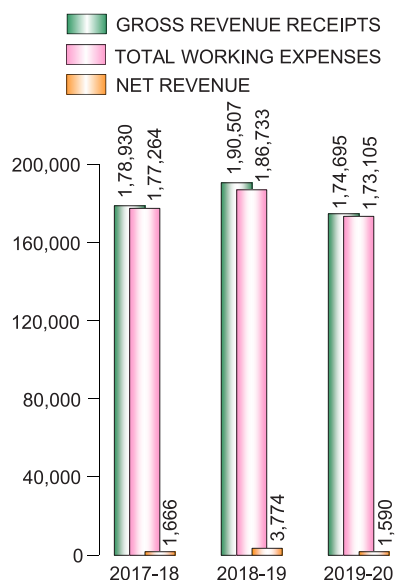


LHB coaches - complete switch over by IR to manufacture



Mechanized Cleaning of coach, ER

**GROSS REVENUE AND  
WORKING EXPENSES  
(INCLUDING MISC.)  
(₹ IN CRORE)**



## Finance

### Results for 2019-20

Gross Traffic Receipts of the Railways went down from ₹1,89,906.58 crore in 2018-19 to ₹1,74,356.60 crore in 2019-20. Total Working Expenses decreased from ₹1,84,780.30 crore in 2018-19 to ₹1,71,319.21 crore in 2019-20. After taking into account the miscellaneous transactions, the Net Revenue Receipts were ₹1,589.62 crore.

There was no dividend payment during 2019-20 as per RCC recommendations, therefore the year ended with an excess of ₹1,589.62 crore which was appropriated to Development Fund (₹1,388.86) crore and Rashtriya Rail Sanraksha Kosh (RRSK) (₹200.76 crore).

The Financial Results for 2019-20 compared to 2018-19 are summarized as below:

	2018-19	2019-20	(₹in crore) Variation
Capital-at-Charge(excluding MTPs and Circular Railway, Udhampur-Baramula project and appropriation to SRSF)	2,95,151.86	<b>3,21,471.67</b>	<b>26,391.81</b>
Investment from Capital Fund	53,449.91	<b>53,449.91</b>	-
Total	3,48,601.77	<b>3,74,921.58</b>	<b>26,319.81</b>
Gross Traffic Receipts	1,89,906.58	<b>1,74,356.60</b>	<b>(-)15,549.98</b>
Total Working Expenses	1,84,780.30	<b>1,71,319.21</b>	<b>(-)13,461.09</b>
Net Traffic Receipts	5,126.28	<b>3,037.39</b>	<b>(-)2,088.89</b>
Miscellaneous Transactions(Net)	-1,352.42	<b>(-)1,447.77</b>	<b>-95.35</b>
Net Revenue Receipts	3,773.86	<b>1,589.62</b>	<b>(-)2,184.24</b>
Dividend Payable to General Revenues	-	-	-
Excess(+)/Shortfall(-)	3,773.86	<b>1,589.62</b>	<b>(-)2,184.24</b>
Percentage of			
(a)Working Expenses to Gross Earnings	97.29	<b>98.36</b>	<b>1.07</b>
(b)Net Revenue to Capital -at-charge and investment from Capital Fund	1.08	<b>0.42</b>	<b>-0.66</b>
Capital-at-charge*(in paise) per NTKM	425	<b>479</b>	<b>(+)54</b>

\*Includes Investment from Capital Fund.

### Revenue

The Gross Traffic Receipts is less by ₹15,549.98 crore (-8.19%) 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 2019-20 were ₹1,71,319.21 crore a decrease of ₹13,461.09 crore(-7.28%) over 2018-19. 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, 2020 and variation over 2018-19 is as follows:

	(₹ in crore)	
<b>Assets</b>	<b>As on March 31, 2020</b>	<b>Variation over Previous year</b>
Block Assets	6,40,408.27	66,766.61
Funds with Central Government:		
(i) Reserve funds	-25,730.65	
(ii) Banking accounts	69,164.17	
	43,433.52	(-)20,092.89
Sundry Debtors, etc.	4,649.96	642.93
Cash in hand	604.78	-772.26
<b>Total</b>	<b>6,89,096.52</b>	<b>46,544.38</b>
<b>Liabilities</b>		
Represented by:		
Capital-at-charge*	3,78,468.48	
Investment financed from internal sources, etc.	2,61,939.79	
<b>Total</b>	<b>6,40,408.27</b>	<b>66,766.61</b>
Reserve Funds	(-)25,730.65	(-)27,636.59
Banking Accounts:		
(i) Provident Fund	39,341.70	
(ii) Misc. Deposits	29,762.66	
(iii) F. Loans and Advances	59.80	
<b>Total</b>	<b>69,164.17</b>	<b>7,534.69</b>
Sundry Creditors, etc.	5,254.73	(-)129.34
<b>Total</b>	<b>6,89,096.52</b>	<b>46,544.38</b>

\*Excludes ₹16,636.14 crore for MTPs, ₹1,898.79 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).

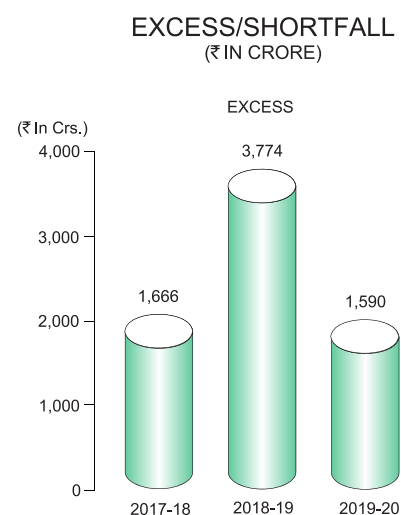
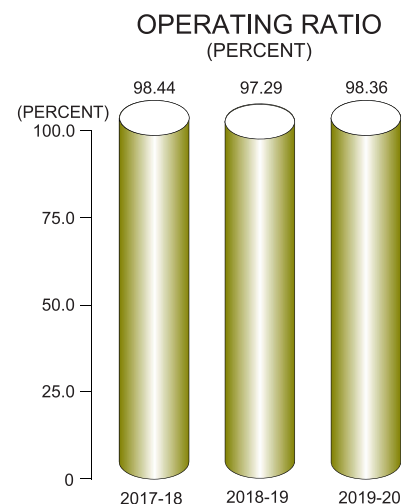
\*Includes ₹40,987.75 crore of investment in DFCCIL and ₹16,026.70 crore of Udhampur-Srinagar-Baramulla Project (National Project).

@ 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 2019-20 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, 2020 compared to March 31, 2019 is as follows:

Name of the Fund	Balance as on 1.4.2019	Contribution to Fund during 2019-20	Withdrawals during 2019-20	(₹in crore)
				Balance as on 31.3.2020
DRF*	718.03	600.00	523.80	833.55
DF*	248.36	1,388.85	1,137.40	519.29
CF*	380.56	0	0	400.35
Pension Fund*	196.11	21,308.00	49,187.89	(-)28,398.46
RSF*	140.99	17,250.00	16,885.74	505.25
DSF*	204.11	0	0	214.73
RRSK	17.79	15,200.76	15,023.88	194.67
Total	1,905.95	55,747.61	82,758.71	(-)25,730.62

\*Includes ₹0.01 crore under DRF & ₹0.03 crore under DF due to TWFA for the year 2019-20 and also includes interest under DRF ₹39.32 crore, DF ₹19.44 crore, CF ₹19.79 crore, Pension Fund ₹-714.68 crore and DSF ₹10.61 crore.

The total balance in the Reserve Funds as on March 31,2020 was ₹-25,730.62 crore, representing a decrease of ₹27,636.61 crore over the previous year.

## Cash Flow

Finance generated through IR's internal resources provided ₹34,601.08 crore during the year 2019-20.

The details of internal resource generation and utilisation of funds for financing the Plan outlay are shown in Statement IV of Financial Statements. During 2019-20, the total Plan investment was ₹34,601.08 crore, (including MTPs, Circular Railways & National Projects). This was financed from Budgetary Support to the extent of ₹28,666.88 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 the total Plan investment was ₹54,467.35 crore (excluding MTPs, Circular Railways and National Project). This was financed from Budgetary Support to the extent of ₹23,876.10 crore (exclusive of capital invested on MTPs & Circular Railways amounting to ₹1,187.21 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 2019-20, a decrease of the fund balance was to the tune of ₹27,636.61 crore to finance the Plan expenditure.

### Audit Objections

IR had a total of 1307 Audit Notes Part I, 873 Special Letters and 4,622 Audit Inspection Reports Part-I as on March 31, 2020 as compared to 1,506, 2,022 and 3,385 outstanding respectively at the end of March 31, 2019.

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 145.

### 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 wholly Government owned 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 2019-20, the fleet 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



Double Stack Container, WR



12000 HP WAG 12B Locomotive in Lucknow Division, NR



First HUMSAFAR Rake fitted out smart coach features turned out from MCF



Dual Mode Locomotive, DLW Banaras



New genre coaches ready for dispatch, RCF

2019-20 and cumulative investment from this source are as under:

Category of assets	Rolling stock taken on lease in 2019-20		Rolling stock under lease at the end of 2019-20	
	Nos.	Value (₹ in crore)	Nos.	Value (₹ in crore)
Elec. Locos	786	9,217.21	6,389	55,422.06
Diesel Locos	196	3,945.99	4,943	45,937.39
<b>Total Locos</b>	<b>982</b>	<b>13,163.20</b>	<b>11,332</b>	<b>1,01,359.44</b>
Wagons	11,245	3,494.71	2,41,060	46,663.16
Coaches	7,278	16,886.20	64,648	78,152.53
Track Machines & Cranes	-	-	85	359.76
Other Misc. Items	-	-	-	1,034.38
<b>Total</b>		<b>33,544.11</b>		<b>2,27,569.27</b>

On the 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 2019-20 was ₹20,006.52 crore, of which ₹9,890.48 crore constituted capital component and ₹10,116.04 crore interest component.

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 2019-20 (₹101.52 crore capital component and ₹195.96 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 2019-20 is ₹5,735.39 crore, including ₹1,407.96 crore in 2019-20. Funds are provided by MOR to RVNL to meet RVNL's debt servicing obligations to IRFC (₹534.31 crore in 2019-20).

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 2019-20 is ₹1,01,234 crore, including ₹36,440 crore in 2019-20. The amount of ₹36,440 crore provided by IRFC in 2019-20 includes ₹2,500 crore for National projects.

### Selected Financial Ratios

S. No.	Item	Unit	2018-19	2019-20
<b>(A)</b>	<b>Financial Ratios</b>			
1.	Operating ratio	% Age	97.29	<b>98.36</b>
2.	Rate of return on Capital	% Age	1.08	<b>0.29</b>
3.	Working ratio of IR	% Age	91.9	<b>91.9</b>
4.	Operating ratio with subsidy (Cost recovery)	% Age	77.4	<b>73.71</b>
5.	Operating ratio for Coaching (passenger) and Goods (Freight)			
i.	Goods	% Age	58.72	<b>73.11</b>
ii.	Coaching	% Age	192.49	<b>207.84</b>
6.	Debt Servicing as percentage of OWE and as a percentage of Gross receipts.			
i.	Debt servicing as percentage of OWE	% Age	13.6	<b>13.9</b>
ii.	Debt servicing as percentage of Gross Receipts	% Age	10.0	<b>11.9</b>
7.	Capex to Revenue ratio – Capex ( from internal generation ) / Revenue	% Age	2.5	<b>1.0</b>
<b>(B)</b>	<b>Earning/Yield Ratios (Based on Apportion Earning)</b>			
8.	Passenger yield/ PKMs	In Paise	44.13	<b>48.22</b>
9.	Fright yield/NTKMs	In Paise	165.98	<b>157.52</b>
	Productivity index			
i.	Employee Productivity		668790*	<b>624315</b>
ii.	Infrastructure Productivity		6646180	<b>6193414</b>
<b>(C)</b>	<b>Asset Utilization</b>			
10.	Utilization of Assets			
i.	NTKMs per wagon per day -(BG)	KMs	7747	<b>7057</b>
ii.	Wagon KMs per Wagon day -(BG)	KMs	203.9	<b>188.7</b>
iii.	Wagon turn around - BG	In days	5.00	<b>5.30</b>
iv.	Average Load per Wagon - BG	Tonnes	60.8	<b>61.3</b>
<b>(D)</b>	<b>Operating Indices</b>			
11.	Average speed of Goods Train – (BG) – All traction	KM/hour	23.3*	<b>23.6</b>
12.	Infective percentage of Rolling Stock – (BG)			
i.	Diesel Locos	% Age	8.53	<b>8.19</b>
ii.	Electric Locos	% Age	7.11	<b>6.99</b>
iii.	EMU Coaches	% Age	14.4	<b>12.2</b>
iv.	Passenger Carriages	% Age	6.07	<b>6.14</b>
v.	Other Coaching Vehicles	% Age	5.18	<b>5.08</b>
vi.	Wagons	% Age	3.61	<b>3.07</b>
13.	Specific Fuel Consumption ( Consumption per 1000 GTKMs) – (BG)			
i.	Passenger service Diesel	KLs.	3.74	<b>3.59</b>
ii.	Goods services Diesel	KLs.	1.97	<b>1.92</b>
14.	Specific Energy Consumption ( Consumption per 1000 GTKMs) – (BG)			
i.	Passenger service- Electricity	K.Wt. Hrs.	19.7*	<b>18.4</b>
ii.	Goods services -Electricity	K.Wt. Hrs.	5.83	<b>6.13</b>
15.	Punctuality Index – Punctuality ( M/Exp. Trains) –(BG)	%age	69.23	<b>75.69</b>
16.	Accident per Million train Kilometers		0.05	<b>0.05</b>

\*Revised



Foodgrains Loading at Srikakulam, ECoR

## Freight Operation

In 2019-20 IR loaded 1,212.22 million tonnes of freight traffic of which 1,208.41 Million Tonnes was revenue-earning and 3.81 million Tonnes of non-revenue earning, and achieved total net tonne kilometers (NTKMs) of 708 billion as against 739 billion in 2018-19. The freight earnings went down from ₹1,27,432.72 crore in 2018-19 to ₹1,13,487.89 in 2019-20, registering a decrease of 10.94%.

Commodity wise loading of revenue-earning traffic in 2019-20 as compared to 2018-19 was as follows:

Commodity	Tonnes carried (in millions)	
	2018-19	2019-20
<b>Coal</b>		
(i) for Steel Plants	59.05	<b>57.07</b>
(ii) for Washeries	0.09	<b>0.13</b>
(iii) for Power House	257.76	<b>252.92</b>
(iv) for public use	288.94	<b>276.75</b>
<b>Total</b>	605.84	<b>586.87</b>
<b>Raw material for steel plants except iron ore</b>	25.77	<b>25.57</b>
<b>Pig iron and finished steel</b>		
(i) from steel plants	31.82	<b>31.43</b>
(ii) from other points	22.17	<b>21.70</b>
<b>Total</b>	53.99	<b>53.13</b>
<b>Iron ore</b>		
(i) for export	5.62	<b>17.47</b>
(ii) for steel plants	89.02	<b>85.55</b>
(iii) for other domestic users	42.70	<b>50.35</b>
<b>Total</b>	137.34	<b>153.37</b>
<b>Cement</b>	117.34	<b>110.10</b>
<b>Foodgrains</b>	39.31	<b>37.53</b>
<b>Fertilizers</b>	51.83	<b>51.39</b>
<b>Mineral oil (POL)</b>	43.01	<b>44.68</b>
<b>Container Service</b>		
i) Domestic containers	11.91	<b>11.31</b>
ii) EXIM containers	48.26	<b>49.77</b>
<b>Total</b>	60.17	<b>61.08</b>
<b>Balance other goods</b>	86.88	<b>84.69</b>
<b>Total Revenue earning traffic</b>	1,221.48	<b>1,208.41</b>



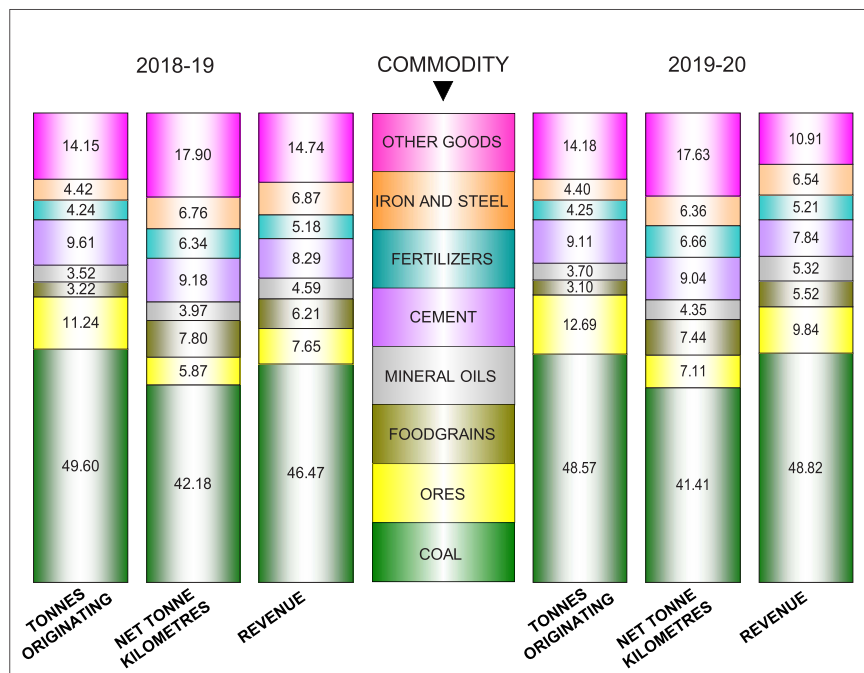
Jai Kishan Special Freight Train, SCR



Food Grains loaded into goods wagon, SCR



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



Loading of essential commodities such as wheat, rice, grains, etc. from Vadodara Yard, WR

Revenue-earning freight traffic for major bulk commodities/ commodity groups in 2019-20 compared with 2018-19 was as follows :

S. No.	Commodity/ Commodity group	Tonnes originating (in million)		Net tonne kilometers (in million)		Earnings \$ (₹ in crore)	
		2018-19	2019-20	2018-19	2019-20	2018-19	2019-20
1	Coal	605.84	<b>586.87</b>	3,11,487	<b>2,93,051</b>	56,963.64	<b>54,426.68</b>
2	Raw material for steel plants except iron ore	25.77	<b>25.57</b>	15,141	<b>14,438</b>	2,359.04	<b>2,216.23</b>
3	Pig Iron & finished steel	53.99	<b>53.13</b>	49,926	<b>45,029</b>	8,422.33	<b>7,286.65</b>
4	Iron ore	137.34	<b>153.37</b>	43,323	<b>50,320</b>	9,376.99	<b>10,965.90</b>
5	Cement	117.34	<b>110.10</b>	67,818	<b>63,933</b>	10,165.60	<b>8,744.82</b>
6	Foodgrains	39.31	<b>37.53</b>	57,575	<b>52,641</b>	7,615.98	<b>6,153.66</b>
7	Fertilizers	51.83	<b>51.39</b>	46,834	<b>47,162</b>	6,348.24	<b>5,807.65</b>
8	Mineral oil (POL)	43.01	<b>44.68</b>	29,333	<b>30,774</b>	5,631.62	<b>5,928.06</b>
9	Container Services	60.17	<b>61.08</b>	57,882	<b>56,686</b>	7,369.20	<b>2,553.95</b>
10	Balance other goods	86.88	<b>84.69</b>	59,204	<b>53,631</b>	8,327.67	<b>7,388.70</b>
11	<b>Total revenue earning traffic</b>	<b>1,221.48</b>	<b>1,208.41</b>	<b>7,38,523</b>	<b>7,07,665</b>	<b>1,22,580.31</b>	<b>1,11,472.30</b>

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

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

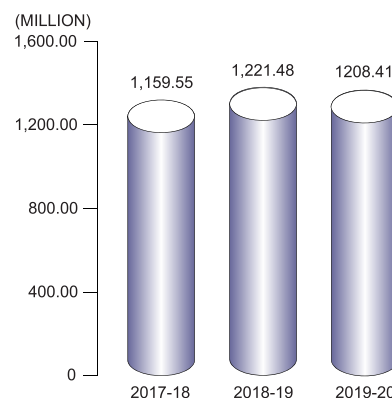
	2017-18	2018-19	2019-20
Tonnes originating (million)	1,159.55	1,221.48	<b>1,208.41</b>
Net tonne kms. (million)	6,92,916	7,38,523	<b>7,07,665</b>
Average lead (kms.)	598	605	<b>586</b>
Goods earnings \$ (₹ in crore)	1,13,523.53	1,22,580.31	<b>1,11,472.30</b>

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

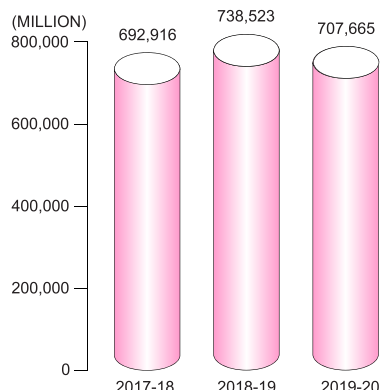


Transportation of essential items, NFR

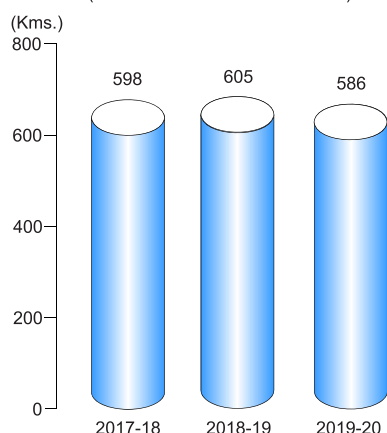
### TONNES ORIGINATING (REVENUE-EARNING)



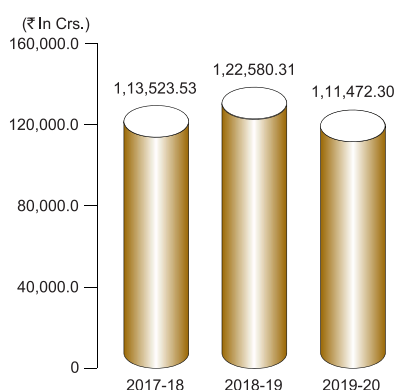
**NET TONNE KILOMETRES  
(REVENUE-EARNING)**



**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 2019-20. However, various initiatives were taken during this period which include Round-trip based charging of ultra short lead (0-50 Km) Container traffic, Large scale de-notification of commodities from notified commodities i.e. lower rates available for transportation of these commodities when transported on container, withdrawal of Busy Season Charge, withdrawal of supplementary charge for Mini Rake/Two point booking, Distance relaxation for Mini rake operation has been increased to 1,500 km and for two point combinations upto 500 km, reduction in levy of Terminal Access charge, etc.

### Freight Marketing

#### 1. Development of Private Freight Terminals (PFT) through private investment

Private Freight Terminal (PFT) policy-Private Freight Terminal (PFT) facilitates rapid development of a network of freight terminals with private investment. The focus of the policy is to provide efficient and cost effective logistics services with warehousing solution to end users. So far, proposals for development of 117 PFTs have been received, out of which 67 PFTs have already been notified/commissioned and operationlized.

During the year 2019-20, 5 PFTs have been commissioned.

#### 2. Procurement of rakes for freight traffic by inviting private investment

(i) **General Purpose Wagon Investment Scheme (GPWIS)** : The scheme allows investment by End users, Public Sector Undertakings (PSUs), Port Owners, Logistics Providers and Mine Owners in General Purpose Wagons. The scheme permits eligible parties to invest in minimum of one rake of general purpose wagons for movement in any of the approved circuit(s) to carry any commodity.

During the year 2019-20, approval has been accorded for 103 rakes, out of which 25 rakes have been inducted and are in operation.

(ii) **Liberalized Wagon Investment Scheme (LWIS)**: The scheme allows investment by End users (viz. producers, manufacturers and consumers of goods) in Special Purpose Wagons (SPW) and High Capacity Wagons (HCW). So far, approval has been accorded for procurement of 133 rakes, out of which 54 rakes have been inducted. During the year 2019-20, approval has been given for 49 rakes and 03 rakes have been inducted.

(iii) **Special Freight Train Operator (SFTO)**: The scheme allows investment in procurement of Special Purpose Wagons (SPW) and High Capacity Wagons (HCW) for transportation of non-traditional commodities like molasses, fly ash, edible oil, caustic soda, chemical, petrochemicals, alumina & bulk cement etc. So far, approval has been accorded for procurement of 37 rakes, out of which 16 rakes have been inducted under the scheme.

During the year 2019-20, approval has been given for 09 rakes and 04 rake have been inducted.

- (iv) **Automobiles Freight Train Operator Scheme (AFTO):** The scheme permits procurement and operation of Special purpose rakes by private parties in transportation of automobile sector. So far, approval has been accorded for procurement of 59 rakes, out of which 27 rakes have been inducted under the scheme.

During the year 2019-20, 08 rakes have been inducted.

- (v) **Liberalized Special Freight Train Operator Scheme (LSFTO):** A liberalized Special Freight Train Operator Scheme has been launched on 16.03.2020, which incorporates positive features of both LWIS and SFTO policies. The liberalized scheme allows investment in procurement of Special Purpose Wagons (SPW) and High Capacity Wagons (HCW) for transportation of non-traditional commodities like Molasses, Fly ash, Edible oil, Caustic soda, Chemical, Petrochemicals, Alumina & Bulk cement etc. Investment under the LSFTO Policy can be done by End Users (viz. producers, manufacturers and consumers of goods), Transport & Logistic company, Port & Land Terminal Operators, Warehousing Companies, Containers Train Operators and Wagon Leasing Companies.

- (vi) **Wagon Leasing Scheme (WLS):** The Scheme introduced the concept of leasing of railway wagons on IR. The scheme aims at induction of rakes through PPP route with the private sector for High Capacity Wagons, Special Purpose Wagons and wagons for container movement. Wagon Leasing Companies can lease wagon under AFTO, GPWIS, SFTO, LWIS, LSFTO schemes and also to container Train Operators.

## Claims

### (A) Claim (2019-20)

The number of claims registered by Railways was 7,251 during the year 2017-18, 5,799 during 2018-19 and 5,640 in 2019-20.

### (B) Claim (April-September, 2020)

The number of claims registered by Railways was 4,055 during the period of April-September 2017, 2,993 during the period of April-September 2018, 3,227 during the period of April-September, 2019 and 1,343 during the period of April-September, 2020.

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

1. Escorting of Goods Train specially when valuable items are being carried.
2. Insistence on provision of dunnage to protect flap doors wherever required to prevent leakage of sugar, pulses and oil seeds etc.
3. Proper marking and labeling of packages to avoid their loss/over-carriage.
4. Claims Inspectors in their inspection, advice on adherence to rules and regulations to prevent claims.
5. Proper documentation to prevent claims.
6. Transit packages are taken care of to avoid claims.
7. To conduct inspections to curb the claim on Shortage/damage/breakage/partial/non-delivery of complete Package/wagons/complete consignment etc.

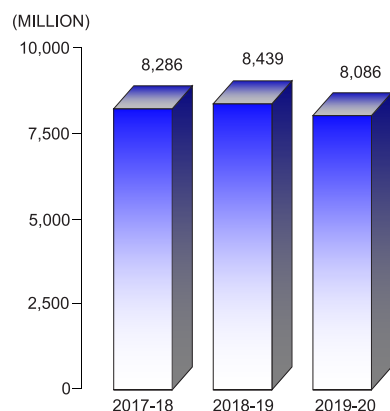


*Car loading at Walajahbad Common user Rail hub near Chennai*



*High Capacity Parcel Van, RCF*

PASSENGER JOURNEYS  
(NUMBER)



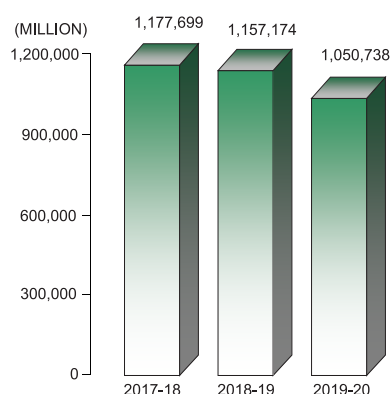
## Passenger Business

The profile of passenger traffic in 2019-20 as compared to 2018-19 is outlined below:

	Suburban		Non-suburban	
	2018-19	2019-20	2018-19	2019-20
Passengers originating (millions)	4,784	4,597	3,655	3,489
Passenger kilometers (millions)	1,46,678	1,37,130	10,10,496	9,13,608
Average lead (kilometres)	30.7	29.8	276.5	261.9
Earnings (₹ in crore)	2,812.75	2,843.09	48,253.90	47,826.01
Average rate per passenger kilometer (paise)	19.2	20.7	47.8	52.4

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

PASSENGER KILOMETRES



	Total suburban and Non-suburban		
	2017-18	2018-19	2019-20
Passenger earnings (₹ in crore)	48,643.14	51,066.65	50,669.09
Passenger journeys (millions)	8,286	8,439	8,086
Passenger kilometres (millions)	11,77,699	11,57,174	10,50,738
Average lead (kilometres)	142.1	137.1	129.9

### Fare Structure

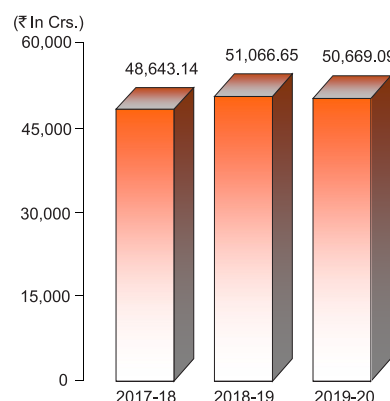
Indian Railways has revised the basic passenger fare w.e.f. 01.01.2020 with following features:-

- 01 paise per kilometer increased in ordinary non-AC classes in Non-suburban.
- 02 paise per kilometer increased in Mail/Express Non-AC classes in Non-Suburban.
- 04 paise 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 2019-20, 20.43 lac checks were conducted against ticketless/irregular travel (including carriage of unbooked luggage). About 350.13 lac cases of ticketless/irregular travel/unbooked luggage were detected and ₹1,497.94 crore were realized on this account.

PASSENGER EARNINGS



## Punctuality

The punctuality of Mail/Express trains (arriving at destinations on right time) during the year 2019-20 was 75.69% as per computer based on-line system 'Integrated Coaching Management System (ICMS)'.

## Unit Revenue

The average rate per passenger kilometer was 48.2 paise in 2019-20 as against 44.1 paise in 2018-19. Average revenue for different classes, was as follows:

	Earnings per passenger kilometer (paise)		Earnings per passenger journey (in ₹)	
	2018-19	2019-20	2018-19	2019-20
Suburban (all classes)	19.2	<b>20.7</b>	5.9	<b>6.2</b>
Non-Suburban:				
AC Ist Class \$	278.8	<b>273.6</b>	1,576.2	<b>1612.6</b>
AC Sleeper	166.2	<b>166.0</b>	1,294.3	<b>1266.7</b>
AC 3-Tier	128.7	<b>129.4</b>	1,065.0	<b>1090.3</b>
Ist class	68.6	<b>83.7</b>	61.1	<b>66.7</b>
AC Chair Car	142.4	<b>164.4</b>	541.6	<b>512.4</b>
Sleeper Class:				
Mail/Express (i)	49.2	<b>50.6</b>	400.3	<b>395.4</b>
(ii) Ordinary	41.5	<b>48.4</b>	102.8	<b>32.4</b>
Second Class:				
Mail/Express (i)	30.9	<b>32.7</b>	101.3	<b>116.2</b>
(ii) Ordinary	21.3	<b>23.8</b>	23.6	<b>16.5</b>
Total Non-suburban	47.8	<b>52.3</b>	132.0	<b>137.1</b>

During the year 2019-20, 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	109	118	38	265
Suburban	44	30	012	86
<b>Total</b>	<b>153</b>	<b>148</b>	<b>50</b>	<b>351</b>

(Trains in singles)

## Catering Services

Indian Railways provide catering services to the travelling passengers through Pantry Cars (in 419 pairs of trains), Train Side Vending (TSV) on 946 trains, E-catering available on 358 stations with an average of 22,203 meals per day, and Static Units at Stations. Static Catering Units include 674 Major Static Units (Food Plaza, Fast Food Units, Jan Ahaa, Cell Kitchens,



Illumination at Jaipur Railway Station, NWR



Improvement in Circulating Area, at Guntakul Railway Station, SCR





Escalator at Jaipur Railway Station, NWR

Base Kitchen, Refreshment Rooms and Automatic Vending Machines) and 8,824 Minor Static Units ( all stall, trolleys) on Indian Railways. In addition, there are 1,804 Water Vending Machines, 4,682 Multi Purpose Stalls, 896 Bookstalls, 71 Miscellaneous/Curio Stalls, 04 exclusive Chemist Stalls and 02 Bookstalls cum Chemist Corners operational at stations to ensure availability of items of travelling needs of passengers.

In its endeavour to bring noticeable improvement in catering services on Indian Railways, a number of new initiatives have been taken during 2019-20 which include the following:

- 07 Base Kitchens/Kitchen Units have been upgraded during 2019-20 entailing civil works, electrical works and requisite kitchen equipments, reaching a total of 53 upgraded Kitchens.
- CCTV Cameras have been installed in 28 Base kitchens/Kitchen Units to monitor Kitchen activities on real-time basis with live streaming available on the IRCTC website as well as Rail Drishti.
- All food boxes served in mobile (post-paid) and static units to bear QR code or stickers giving details like MRP, name of contractor, weight, date of packing and symbol of veg/non-veg food item. QR Code has been installed in 29 Base Kitchens/Kitchen Units.
- To generate printed bill and invoice reflecting all details of transaction under taken at catering units, hand held POS machines are being provided. Currently, 5,121 POS machines are in operation on 419 pairs of trains. In addition, 3011 POS machines are operational on 2,836 Static Units.
- Awareness Campaigns for passengers like “No Bill- The food is for FREE”, No Tips’ Stitched/displayed on uniforms etc. have been launched. 12,256 nos. of metallic plates displaying these campaigns have been installed in 360 Mail/Express trains.

## Rail Tourism

India is a well-known tourist hub and an exciting holiday destination for exploring the wild, gazing at architectural wonders, undertaking religious pilgrimages, trying new adventures, discovering age-old historic treasures, etc. Travelling through this fascinating journey entails not just finding good transportation but also comfortable hotel stays. Therefore, Indian Railways through IRCTC (the tourism arm of IR), works towards promotion of Rail Tourism through running of Rail Tour Packages, Budgeted Tourist Trains, Chartered Tours, etc. The horizon of tourism activities includes Rail based tourism activities as well as Non-Rail based tourism products to survive and succeed in a competitive market.

In an endeavour to promote tourism in the country IRCTC provides various types of tourism products catering to the needs of budget to luxury class passengers. IRCTC is also involved in construction of budget hotels at prime locations, providing information about various destinations as well as tour packages through its Tourism Information Centres, Executive Lounges

at railway stations, etc.

Indian Railways, being the parent company of IRCTC, has given some special privileges to IRCTC for promotion of Tourism across India which enables it to provide its services on competitive costs when compared to road & air transportation.

The important rail based services offering package tours are (i) Luxury Tourist Trains- Maharajas' Express & Golden Chariot, (ii) Buddhist Rake-Buddhist Circuit Special Train & AC Tourist Train, (iii) Bharat Darshan/Aastha Circuit Tourist Trains, (iv) Rail tour Packages, (v) Online Charter Train/ Coach/ Saloon Car, (vi) IRCTC Corporate Trains and (vii) Election Special Trains.

## **1. Luxury Tourist Trains:**

### **a. Maharajas' Express:**

Indian Railways, through IRCTC, is successfully managing and operating the Maharajas' Express which has been recognised the world over. 'Maharajas' Express has been bestowed with "World's Leading Luxury Train" award at the World Travel Awards for seven consecutive years from 2012 to 2018 and also, been awarded as "Luxury Hospitality and Life Style Awards" for consecutive two years i.e. 2015 & 2016 by Seven Star Luxury Awards.

The Maharajas' Express has redefined the luxury travel experience by offering guests the best in class services so that a person can relax and explore fabled destinations providing a glimpse of the rich cultural heritage of Incredible India. The meticulously planned itinerary of Maharaja express enables one to relax and enjoy and leaves one with fond memories of this train journey. The on-board and off-board services on the train are being provided at substantially lower rates for the same quality / level of services. IRCTC has also evolved a transparent system of empanelling affiliates and preferred sales agents.

The 23 carriage long train houses four different types of accommodation viz. Deluxe Cabins, Junior Suite Cabins, Suites and Presidential Suite which come with en-suite bathrooms. These cabins are provided with lavish interiors, distinct themes supplemented by the latest International safety features such as electronic smoke detection system, CCTV, Pneumatic suspension for superior ride comfort, adequate wardrobe space and luggage holds.

The carriages are named after semi precious & precious gemstones and the interiors of each cabin are tastefully designed and planned. Each class of cabin, although same in terms of size and services, has different upholstery to give it a unique appeal. The train also houses a full kitchen onboard which serves a mix of international and Indian cuisines. The menus change daily and the guests can also make special dietary requests before commencement of the journey.

The itinerary is planned in the form of three packages (based on



*Deccan Queen Express, CR*



*A view of Sealdah Station, ER*



Double Decker Uday Express, ECR

time duration) which cover 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 [www.the-maharajas.com](http://www.the-maharajas.com). The train is operated during the tourist season, from September to April.

In FY 2019- 20, IRCTC had operated 25 trips and provided service to 1149 passengers. The last 03 trips were cancelled due to COVID-19 pandemic conditions in India. During FY 2020- 21 (April-Sept'20), IRCTC has not operated any trip of Maharajas' Express due to restrictions imposed by Government of India on group movements & flights in view of ongoing pandemic.

#### **b. Golden Chariot:**

The Karnataka State Tourism Development Corp (KSTDC) has signed a Memorandum of Understanding (MOU) with the Indian Railway Catering and Tourism Corporation (IRCTC) to market and operate the Golden Chariot train on Revenue Sharing basis. The train was taken over by IRCTC during January 2020 and the first phase of up-gradation of coach interiors and amenities has been completed. High-end domestic tourists are being targeted as clients for the current season as this is the maiden operation of the train after take-over from KSTDC.



IR's largest AC waiting hall at Patna Jn. ECR

## **2. Buddhist Rake:**

### **a. Buddhist Special Trains (Mahaparinirvan Express):**

Buddhist Circuit is a niche product of a 7 Night/8 Days itinerary which covers all major Buddhist Pilgrim locations in India and Lumbini in Nepal. The major destinations covered in the itinerary follow the life span of Lord Gautam Buddha and covers destinations like Bodhgaya, Rajgir, Nalanda, Varanasi, Sarnath, Kushinagar, Lumbini (Nepal), Sravasti and Agra. The tour is mostly patronised by International Tourists and has also been able to attract domestic clients too. The details and online booking is available for Buddhist circuit trains at micro-site "[www.irctcbuddhisttrain.com](http://www.irctcbuddhisttrain.com)".

The LHB rake has been modified by Rail Coach Factory, Kapurthala for operation of Buddhist Circuit Tourist Train with International amenities and accessories. In FY 2019-20, IRCTC has operated 7 trips providing service to 365 passengers. The March' 20 trip was cancelled due to restrictions imposed by Government of India on Group movements & flights in view of ongoing pandemic.

### **b. AC Tourist Trains:**

IRCTC launched and operated AC Tourist trains from Southern and Western India in FY 2019- 20. These tour packages are targeted at mid & high-income domestic tourists who cannot afford the Deluxe trains and also do not want to travel on the budget tourist trains like Bharat Darshan.

The AC Tourist train is being utilized for operations of domestic tourist



Plush Interior of Tejas, RCF

tours and in FY 2019- 20, IRCTC has operated 08 trips of AC Tourist Train and provided service to 1501 passengers. During the FY 2020- 21 (Apr- Sept' 20), IRCTC has not planned and operated any AC Tourist Train due to COVID- 19 pandemic situation in India.

### **3. Bharat Darshan/ Aastha Circuit Tourist Trains:**

Bharat Darshan/ Aastha Circuit is one of the most popular rail based tourism products for the budget segment tourists. These Trains cover major pilgrim and tourist destinations of India, on different itinerary. The tour packages are attractively priced at Rs. 900/- per day per person + GST for non-AC sleeper class passengers. The price is inclusive of rail & road travel, all meals, sightseeing and accommodation. All tourists are also insured for accidental claims upto a sum of Rs. 10 lakhs. Further details and booking of Bharat Darshan/ Aastha Circuit Tourist Trains, can be availed from tourism portal “[www.irctctourism.com](http://www.irctctourism.com)” or one can visit nearest Tourism Facilitation Centres (TFC) of IRCTC.

IRCTC has 5 rakes of Bharat Darshan/ Aastha Circuit Tourist Trains which cater to the demand covering North, East, West, South and South Central India. In FY 2019- 20, IRCTC has operated 92 trips and provided service to 55,115 passengers. During the FY 2020- 21 (Apr- Sept' 20), IRCTC has not planned and operated any Bharat Darshan Tourist Train due to COVID- 19 pandemic situation in India.

### **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, all meals and sightseeing at reasonable rates on the basis of itinerary. Rail Tour Packages (RTP) cover major tourist/ pilgrim destination across India such as Shirdi, Vaishno Devi, Tirupati, Darjeeling, Chennai, Rameshwaram, Gangtok, Ooty, Goa, Puri, Kerala, etc. And such tour package are originating from various parts of India. The details and booking of these packages are available at tourism portal “[www.irctctourism.com](http://www.irctctourism.com)” or one can visit nearest Tourism Facilitation Centres (TFC) of IRCTC.

In FY 2019- 20, IRCTC has provided service to approx. 13,500 passengers through 106 RTP available on IRCTC Tourism portal. During the FY 2020- 21 (Apr- Sept' 20), IRCTC has not planned and operated any Rail Tour Packages due to COVID- 19 pandemic situation in India as restriction was imposed by GOI.

### **5. Online Chartering of Trains and coaches:**

In FY 2017- 18, IRCTC was nominated as Single window agency for booking of FTR Train/ Coach & Saloon Cars. Moving towards Digitalisation, an online website and service of FTR booking service was launched on 18.05.2018 for public, where the public can register their demand for Charter Trains/ Coaches/ Saloon Cars.

The Saloon Cars offer a unique travel experience and have a living



room, two air-conditioned bedrooms – one twin bedroom and the other 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.

During the FY 2019- 20, IRCTC has operated 487 charter coaches/ saloon cars and 81 charter trains, whereas it is nil for the FY 2020- 21 (Apr- Sept' 20) due to travelling and movement restrictions in view of COVID- 19 pandemic situation.

## **6. IRCTC Corporate Trains:**

IRCTC has been given a mandate to operate three passenger trains, listed as under:

- a) Lucknow- New Delhi Tejas
- b) Ahmedabad- Mumbai Tejas
- c) Kashi Mahakaal Express (Varanasi-Indore).

The inaugural run of the first passenger train was on 4<sup>th</sup> Oct, 2019 on the Lucknow - New Delhi - Lucknow Sector. The second and third passenger trains were inaugurated on the Ahmedabad- Mumbai - Ahmedabad Sector on 17<sup>th</sup> Jan, 2020 and Varanasi- Indore- Varanasi Sector on 16<sup>th</sup> Feb, 2020 respectively.

In the FY 2019- 20, these trains were operated by IRCTC till 18th March' 20 in the wake of restrictions imposed in view of COVID- 19 pandemic. In FY 2020- 21 (April to September' 20), no train operation has been done by IRCTC due to restrictions imposed in view of COVID-19 pandemic.

## **7. Election Special Trains:**

IRCTC has been nominated as a single window agency for operation of Election Special trains (General & Assembly elections) entailing movement of para- military forces across India.

In the FY 2019- 20, IRCTC has operated 346 election special trains for General Election in India. During FY 2020- 21 (Apr- Sept' 20), IRCTC has not operated any election special trains.

## **Passenger Amenities:**

The allocation under the Plan Head-53 "Passenger Amenities" in 2019-20 was ₹3,422.57 crore (Budget Estimate) and the same was revised to ₹2,583.39 crore (Revised Estimate).

1,253 stations were identified for development under the Adarsh Station Scheme, out of which 1,196 stations have already been developed under the said scheme.

During the Year 2019-20, 180 stations were provided with water coolers, 41 stations were electrified and 83 passenger lifts and 80 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 3,445 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](http://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										
09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20
2,061	2,355	2,829	3,019	3,146	3,201	3,350	3,422	3,384	3,443	3,445

### 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 6,242 locations 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										
09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20
3,614	4,739	5,256	5,619	5,778	5,835	5,860	5,979	6,000	6,382	6,242

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

So far more than 4000 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](http://www.irctc.co.in) for online booking of reserved tickets. Reserved tickets can also be booked on mobile application. Mobile Apps on Android & Window are available for booking reserved tickets.

#### **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 Services (SMS) sent by IRCTC containing all vital details to the on-board ticket checking staff for undertaking travel in reserved classes subject of 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 72.75% of the total reserved tickets booked during 2019-20.

##### **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)**

To facilitate ticket booking, "Station Ticket Booking Agents" are engaged to issue unreserved tickets at 'E' Category stations.

#### **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**

### **1. Induction of Smart Coaches:**

In view of the latest development in rolling stock technology, its maintenance and increased level of passengers comfort. Indian Railways has introduced 24 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 2019-20, 22 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 modern features like quick acceleration, substantial reduction in travel time, having maximum speed of 160/kmph, 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.

1<sup>st</sup> train started from 17<sup>th</sup> February 2019 between Delhi-Varanasi 2<sup>nd</sup> train started on 5<sup>th</sup> Oct '2019 between New Delhi - Shri Mata Vaishno Devi Katra.

### **3. Increasing production 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 has continually increased during the years: 1469 LHB coaches in 2016-17, 2480 LHB coaches in 2017-18 and 4429 LHB coaches in 2018-19, and 6277 LHB coaches in 2019-20.

### **4. Focus on amenities for unreserved passengers**

#### **a. Antyodaya Train Service**

These are long distance fully unreserved trains 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. 04 Antyodaya trains have been introduced in 2019-20 by conversion of Jan Sadharan Express.

#### **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 2200 Deen Dayalu coaches turned out by Production Units during 2016-17, 2017-18, 2018-19 and are in service. Of these 880 Deen Dayalu coaches turned out in 2019-20.

### **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, passenger announcement System, Closed-Circuit Television (CCTV) based surveillance system, Integrated Braille displays etc. 38 Humsafar trains have been introduced in service till date, including 04 trains in 2019-20.

#### **b. Tejas trains**

Indian Railways has introduced Ultra modern TEJAS trains with speed potential of 200 KMPH. 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. 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 Wifi, 7 dedicated LCD screens provided in coach and Dining table and chairs in middle deck etc.

One Uday rake was introduced in service between Bangalore City – Coimbatore (Train No.22665/56) in the year 2019-20. 2<sup>nd</sup> rake was introduced in service in year 2019-20.

#### **d. Vistadome coaches**

Vistadome coaches with enhanced viewing area including on roof to enable tourists to enjoy panoramic view while travelling. The feature has been well received especially in Railways having scenic beauty and heritage Hill railways. "Him Darshan Express" was introduced on 25.12.2019 with 6 Vistadome coaches and 01 First AC coach between Kalka- Shimla route of Northern Railways. Presently, 24 Vistadome coaches are available over various sections of Indian Railways.

#### **e. 1<sup>st</sup> Shatabdi with Bio-Vacuum toilets**

1<sup>st</sup> in service Train No. 12005 KLK —NDLS Kalka Shatabdi between New Delhi Kalka section fitted with Bio-Vacuum toilets on 27.01.2020.

### **6. Focus on improving safety in new manufactured 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**

### **a. 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, 65 rakes of Rajdhani and Shatabdi have been upgraded. Of these, 10 rakes have been upgraded in 2019-20.

### **b. Upgradation of rakes of Mail/ Express trains (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 385 rakes has already been completed under Project Utkrisht. Out of these, 289 rakes were upgraded in 19-20.

## **8. Other facilities to improve train facilities**

### **a. Quick Watering Facilities**

For effective enroute watering of train within 10 minutes, 44 stations have been provided with Quick Watering Facilities. Out of these, 29 stations have been provided with Quick Watering Facilities in 2019-20.

### **b. Automatic Coach Washing Plants**

For better and quick exterior washing of trains, Automatic Coach Washing Plants have been provided at 18 locations. Out of these, Automatic Coach Washing Plants have been provided in 10 locations in 2019-20.

### **c. Proliferation of Bio- Toilets**

As a part of “Swachh Bharat Mission”, Indian Railways is proliferating bio-toilets on all its coaching stock so that no human waste is discharged from coaches on to the track. IR has fitted 2,42,821 Bio Toilets in 68658 no. of coaches. Of these, 14,734 have been fitted in 2019-20

## **Cleanliness and Hygiene**

### **Cleanliness at Stations**

- Provision of integrated Mechanized cleaning contracts with improved processes, machinery and updated management systems at 953 stations. Award of rag picking/garbage disposal contracts at 1,310 stations.
- Provision of washable concrete aprons at stations.

- Zonal Railways have been authorized regarding operation and maintenance, including cleanliness of toilets through contracts on 'Pay and Use' basis at various categories of stations. More than 848 stations have Normal Pay and Use toilets and about 77 stations have Deluxe Pay and Use toilets.
- Installation of dustbins at stations to facilitate the passengers to throw garbage has been a thrust area of Swachh Bharat Abhiyan. Separate dustbins for biodegradable and non-biodegradable waste are also being provided at major stations.
- About 700 stations are using CCTV cameras for monitoring cleanliness.
- To avoid the dropping of night soils on the PF lines, bio-toilets installed in all passenger coaches under Swachh Bharat Abhiyan.
- Comprehensive pest and rodent control treatment for controlling the menace of bugs and rodents is being carried out.
- 503 Plastic bottle crushing machines installed at 370 stations.
- Independent third party survey of passenger perception on cleanliness standards of 407 major railway stations carried out first time in 2016 and repeated in 2017 and 2018. In 2019, this survey was carried out at 720 stations.

### **Cleanliness On Trains**

- 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 and dry vacuum cleaners, hand held buffing machines etc. are deployed for the purpose.
- On Board Housekeeping Service (OBHS) has been provided in more than 1,100 pairs of important long distance Mail/Express trains for cleaning of coach toilets, doorways, aisles and passenger compartments during the run of the trains.
- 'Clean My Coach' service is now being upgraded to 'Coach Mitra' facility in about 1060 pairs of OBHS trains for any cleaning requirement in the coach through SMS. Clean Train Station (CTS) scheme has been prescribed for limited mechanized cleaning at 39 stations.
- Provision of dustbins is being done in AC and non AC coaches.
- 68 Mechanized laundry for clean supply of linen in AC coaches.
- Standard bid document (SBD) and General Condition of Contract for Services (GCCS) have been issued with enabling provision to improve handling and effectiveness of cleaning contracts.
- Third party audit-cum-survey on cleanliness of 209 important trains covering 485 rakes completed first time in 2018 including survey by independent auditors travelling on all rakes in both directions and

passenger feedback. Next 3rd party audit on cleanliness of 327 trains having 710 rakes has been planned.

- Considering the efforts of Railways, Ministry of Railways has been adjudged as the best by The Ministry for implementation of ‘Swachhta Action Plan’ and was awarded by Hon’ble President of India on 6<sup>th</sup> Sept, 2019.



*A view of a Shramik Train.*

# Planning

In the year 2019-20 the following assets were acquired:-

S. No.	Heads	In Numbers
1.	Wagons (BLC+ Private Wagons)	15,447
2.	Locomotives including Trade	828
3.	Coaches including Trade	7,557
	EMUs	339
	MEMUs	638
	DMUs	54

In addition, the following works were accomplished:-

S. No.	Heads	In Kms.
1.	New lines	359.71
2.	Gauge Conversion to BG from MG/NG	408.5
3.	Double/Multiple lines	1,458.22
4.	Route Electrification	4,378
5.	Track renewals (both primary & secondary renewal)	4,500

The Plan allocation (Revised Estimates) and Actual Net Expenditure for 2019-20 compared with 2018-19, were as follows:

Plan Head		₹ in Crore			
		2018-19		2019-20	
		Allocation (R.E.)	Actual Net Expenditure	Allocation (R.E.)	Actual Net Expenditure
1	New Lines (Construction)	!25,315.39	9,395.53	@22,974.26	&12,683.17
2	Gauge Conversion	@3,486.56	4,055.00	{3,129.27	4,140.15
3	Doubling	#17,254.19	15,168.33	^23,777.58	22,385.67
4	Traffic Facilities- Yard Remodeling and Others	\$2,522.10	1,146.70	%1,941.71	1,626.22
5	Road Safety Works - Level Crossings	742.61	678.45	546.44	570.54
6	Road Safety Works - Road Over/Under Bridges	^6,637.28	3,522.22	**4,718.88	3,520.92
7	Track Renewals	8,471.63	8,241.66	7,068.87	7,802.63
8	Bridge Works	509.05	528.27	751.83	777.50
9	Staff Quarters	274.79	283.39	516.84	480.92
10	Amenities for Staff	271.20	223.24	-	//
11	New Lines (const.)- Dividend free Projects	?1,150.00	1,879.87	##3,300.00	/
<b>TOTAL MECHANICAL</b>		66,634.80	45,122.66	68,725.68	53,987.72
1	Rolling Stock	%32,079.11	28,108.17	vv42,670.58	37,101.78
2	Leased Assets- Payment of Capital Component	9,112.92	9,111.51.	10,557.53	10,462.21
3	Machinery and Plant	441.86	436.34	430.92	448.11
4	Workshops including Production Units	<1,748.92	2,006.60	<>2,121.02	2,119.12
<b>TOTAL</b>		43,382.81	39,662.62	55,780.05	50,131.22



<b>ELECTRICAL ENGINEERING</b>					
1	Electrification Projects	&7,016.50	5,931.32	~~7,593.55	7,124.63
2	Other Electrical Works including Traction Distribution Works	*1,558.80	600.85	!!603.61	481.30++
<b>TOTAL</b>		8,575.30	6,532.17	<b>8,197.16</b>	<b>7,605.93</b>
<b>SIGNAL AND TELECOMMUNICATION</b>					
1	S and T Works	1,256.24	1,537.02	<b>1,374.70</b>	<b>1,620.69</b>
<b>TOTAL</b>		1,256.24	1,537.02	<b>1,374.70</b>	<b>1,620.69</b>
<b>OTHERS</b>					
1	Computerization	227.97	174.37	<b>423.45</b>	<b>282.81</b>
2	Railway Research	18.76	23.68	<b>43.58</b>	<b>26.80</b>
3	User's Amenities	>5,910.71	1,585.76	Σ Σ2583.39	<b>1,902.90</b>
4	Investment in PSUs/JV/SPV etc. (Govt. & Non Govt.)	11,251	12,678.36	<b>16,634.98</b>	<b>16,924.88</b>
5	Other Specified Works	261.98	288.16	<b>708.94</b>	<b>455.73</b>
6	Training/HRD	89.97	56.43	<b>102.55</b>	<b>85.73</b>
7	Inventories	250.00	270.32	<b>200.00</b>	<b>915.50</b>
8	M.T.Ps.	997.98	1,163.97	<b>1,577.50</b>	<b>1,515.18</b>
<b>TOTAL</b>		19,008.37	16,241.05	<b>22,274.39</b>	<b>2,2109.54</b>
<b>GRAND TOTAL</b>		1,38,857.52	1,09,095.52	<b>1,56,351.98</b>	<b>1,35,455.10</b>

#### Revised Estimates (2019-20)

@@ 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 ₹3,098.42 crore reported by Railways under New Lines (Const.) –Dividend Free Projects now merged with New Lines (Const.)  
{{ Includes ₹6 crore for National Projects. It also includes ₹849.10 crore under EBR (IF).  
^ ^ Includes ₹1,407 crore under EBR (IRFC) and ₹21,746.14 crore under EBR (IF).  
%% Includes ₹618.57 crore under EBR (IF) and ₹254.82 crore under EBR (PPP).  
\*\* Includes ₹1,022.51 crore under EBR (PPP).  
// Staff Quarters and Amenities for Staff merged & Reclassified as Staff Welfare  
## Provision for Udhampur- Srinagar-Baramulla.  
/ Merged with Item No.1, i.e., New line (Const.)  
vv Includes ₹32,624 crore under EBR (IRFC) and ₹1,071 crore under EBR.  
<> Include ₹24.38 crore under EBR (IF) and ₹100 crore under EBR (PPP)  
~ ~ Includes ₹7,602.55 crore under EBR (IF).  
!! Includes ₹120 crore under EBR (PPP).  
++ Reclassified as other Electrical works including TRD.  
Σ Σ Includes ₹702 crore under EBR (PPP).

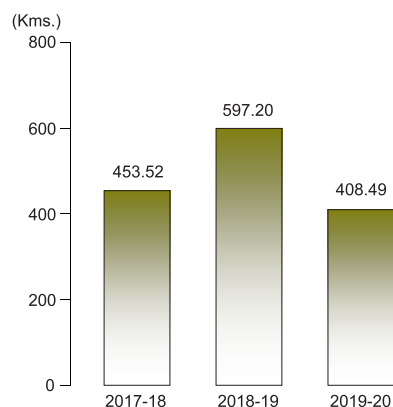
#### Revised Estimates (2018-19)

! Includes ₹385 crore under EBR (IF) and ₹16,930 crore under EBR (PPP). It also includes ₹2,788 crore for National Project & Projects of National projects.  
@ Includes ₹1,736.60 crore under EBR (IF). It also includes ₹310 crore for National Projects.  
# Includes ₹1,046 crore under EBR (Bonds) & ₹15,782.31 crore under EBR (IF).  
\$ Includes ₹25.81 crore under EBR (IF) and ₹1,570 crore under EBR (PPP).  
^ Includes ₹2,000 crore under EBR (PPP).  
? Provision for Srinagar-Baramulla national projects.  
% Includes ₹26,482.96 crore under EBR (Bonds) & ₹2,000 crore under EBR (PPP).  
< Includes ₹61.92 crore under EBR (IF).  
& Includes ₹7,026.44 crore under EBR (IF).  
\* Includes ₹1,000 crore under EBR (PPP).  
> Includes ₹3,500 crore under EBR (PPP).

#### Actual Net Expenditure (2018-19 and 2019-20)

“ Excluding actual expenditure of ₹24,281.14 crore under EBR (PPP) during 2018-19  
“ Excluding actual expenditure of ₹12,609.38 crore under EBR (PPP) during 2019-20.  
/ Merged with item No.1, i.e., New Line (Const.)  
& Includes ₹3,098.42 crore reported by Railways under New Lines (Const.) - Dividend Free Projects now merged with New Line (Const.)  
// Staff Quarters and Amenities for Staff merged & Reclassified as Staff Welfare  
++ Reclassified as other Electrical works including TRD.

## GAUGE CONVERSIONS



Relentless work done by track maintainers, WR

## Engineering

During 2019-20, 359.71 Km new lines were constructed, track of 408.49 Km was converted from MG/NG to BG, and 1,458.22 Km of double/multi-tracking line commissioned. The details of the same are given below:

### Gauge Conversion

During 2019-20, 408.49 Kms of track was converted from MG/NG to BG as detailed below:

S N	Railway	Section	Km.
1	ECR/N	Garhbaruari – Saraigarh	25
2	ECR-N	Mandanmishra – Jhanjharpur	9
3	ECR-N	Garhbaruari – Supaul	11
4	NE	Lakhimpur – Mailani	61.29
5	NER	Pilibhit – Bisalpur	38
6	NWR	Dahar-Ka-Balaji (Jaipur) Ringus	56.5
7	NWR	Himmat Nagar-Raighadh	24
8	NWR	Udaipur-Kharwa chanda	26
9	SECR	Nainpur – Lamta	36
10	SR	Madurai-Usilampatti	37
11	WR	Mahesana to Vadnagar	34
12	WR	Mathela to Nimar kheri	50.7
<b>Total</b>			<b>408.49</b>

### Doubling

During 2019-20, 1,458.22 Kms of double/multiple lines track was completed.

### New Lines

During 2019-20, 359.71 Km of new lines have been completed on the following sections:

S N	Railway	Section	Km.
1	ECoR	Nayagarh Town-Mahipur	12
2	ECoR	Talcher – Sunakhani	20
3	ECoR	Haridaspur-Kendrapara	43
4	ECR	Islampur – Nateswar	21
5	ECR	Ghoswar – Vaishali	30
6	ECR	Sheikhpura-Sarajamalpur	12.5
7	ER	Hansdiha – Prayahat	15.3
8	NFR	Belonia-Sabroom	39



Bilaspur Manali Railways Leh-China Border longest line, NR

S N	Railway	Section	Km.
9	NR	Virbhadra – Yog Nagari Rishikesh	5.7
10	NWR	Thaiyat Hamira-Sanu	58
11	SCR	New Piduguralla – Savalyapuram	45.85
12	SCR	Vellikallu-Chirlopalli	14.86
13	SECR	Kharsia-Korichapper	42.5
<b>Total</b>			<b>359.71</b>

## Track Renewal

During 2019-20, 4,500 kms in Complete Track Renewal (CTR) units of track renewal was carried out. The year-wise details of Track Renewals carried out and expenditures incurred thereon are as under:

Year	Gross expenditure (₹ in crore)	Track Renewal carried out (in kms)
2018-19	9,690.05	4,181
<b>2019-20</b>	<b>9,390.55</b>	<b>4,500</b>

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).

## 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 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 gradually introduced on trunk routes and high density routes. As on 31-03-2020, BG main lines of IR, about 89.61% of the length is covered by long welded rails, 99.34% with PSC sleepers and 97.85% with 52kg/60kg 90 or higher UTS rails.

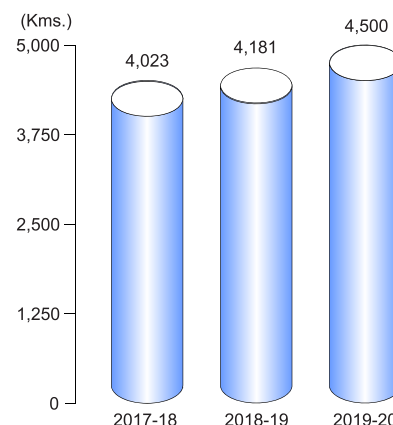
## Welded Rails

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 31.3.2020, total length of welded tracks on main lines of Indian Railways was 90,625.7 km out of which 81,912 km was long welded rails 8,713.7 km was with short-welded rails.

## Track Modernization

Indian Railways is working towards progressive mechanization and

## TRACK RENEWALS



Manoharabad-Kottaalli New rail line connects important towns like Gajwel siddipet of Telangana, SCR



Tunga Bridge, SWR

modernization of maintenance, laying, inspection and monitoring of track. Some of the major steps taken during the year 2019-20 are as below:-

- (i) Rail Milling Machine is being procured for maintenance of rails from scabbing, hatches, wheel burns etc. by removing material from rail head on sharp curves and Ghat sections. This will improve asset reliability and riding comfort.
- (ii) Mechanization of unloading of ballast on track by Automated Ballast unloading kits being procured which can be fitted on existing Ballast Hoppers and can be operated with remote control.
- (iii) Mechanized deep screening of ballast on multiple line sections, yards and platform lines by introducing Muck Disposal Units for collection of muck/spoil after screening by Ballast Cleaning Machines.

### Track Machines

During 2019-20, 78 nos. of track machines were added to the fleet of Track Maintenance Machines on IR taking the total at the end of the year to 989.

**Track Recording Cars (TRC)** are deployed for electronic monitoring of track parameters at periodic intervals to enable planning of maintenance. During 2019-20, a total of 90,729 km track recording was carried out.

### During 2020-21 (upto Sept., 2020)

- (i) As classroom training was discontinued due to COVID-19, all the training for track machine staff have been organized online by Indian Railway Track Machine Training Center (IRTMTC), Prayagraj.
- (ii) Taking advantage of non-operation of passenger trains during lockdown, mechanized track maintenance activities have been speeded up to wipe out track maintenance arrears.

### Bridges

As on 01.04.2020, Indian Railways has a total number of 1,50,390 Bridges out of which 702 bridges are important, 12,256 bridges are major and 1,37,432 bridges are minor. During the year 2019-20 a total of 1,367 bridges were strengthened/rehabilitated/rebuilt.

### 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 01.04.2020 is as under

Total number of level crossings	:	21,323
Number of manned level crossings	:	20,375 (95.6%)
Number of unmanned level crossings	:	948 (4.4%)

Indian Railways has decided to progressively eliminate the level crossings for the safety of Road users and train passengers. During the year



Our Trackman working on the track, ER



2019-20, 1,273 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 2019-20, 145 ROBs and 1,170 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 include testing by non-destructive testing equipments, under water inspections, monitoring the water level with the help of water level system etc.

### Land Management

As on 31.03.2020, Indian Railways (IR) owns about 4.81 lakh hectares of land. About 90% of this land is under Railways' operational and allied usages such as laying of new lines, doubling, gauge conversions, track, stations, workshops, staff colonies, etc.

The break-up of the land is as under:

S. No.	Description	Area (in lakh hectares)
1.	Track and structures including Stations, colonies, etc.	3.67
2.	Afforestation	0.43
3.	'Grow More Food' scheme	0.03
4.	Commercial licensing	0.04
5.	Other uses like pisciculture	0.12
6.	Encroachment	0.01
7.	Vacant land	0.51
	<b>Total</b>	<b>4.81</b>

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 2019-20, Railway did mass plantation of 131.41 lakh trees. Railways have already finalized a model agreement with Ministry of Environment & Forests to be entered by Zonal Railways with State Forest Departments. Plantation will further improve in coming years. 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.



*Digha Rail cum Road Bridge, Patna over River Ganga (second longest bridge of Indian Railways), ECR*



*Doubling work in Ranchi-Bondmunda Section in progress, SER*



*Digital Model Room, IRICEN*





*Going wider: Doubling of railway track at Gooty-Dharmavaram in Andhra Pradesh, SCR*

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 purpose 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. 75 sites measuring 254 hectares (approx.) were entrusted to RLDA for commercial development upto 31.03.2020. 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).

# Railway Electrification

## I Executive Summary of Railway Electrification

With a view to reduce the Nation's dependence on imported petroleum based energy and to enhance energy security of 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, 2020, electrification on Indian Railways has been extended to 39,329 RKMs out of the total Broad Gauge (BG) rail network of 63,950 RKMs including Konkan Railway. This constitutes 61.5% of the total BG Railway Network. On this electrified route, 65.40% of freight traffic & 56.20% 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 balance BG rail routes by 2021-22 to achieve 100% electrification of BG rail routes except some spur routes.

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 Bhigvan-Gulbarga, on which electrification work is in progress.

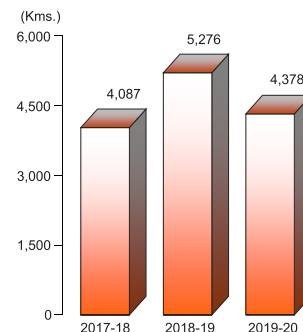
## II Progress of Railway Electrification

(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
<b>2020</b>	<b>39,329</b>

(b) During year 2019-20, 4,378 RKM has been electrified.

ANNUAL RAILWAY ELECTRIFICATION  
(ROUTE KILOMETRES)



Electrification Work, NER



*New Railway line with Electrification between Telapur-Ramachandrapuram facilitating sub urban services in twin cities of Hyderabad, SCR*

### III Sections Opened for Electric Traction after Statutory Inspections in (2019-20):

S N	Section	Rly	State	RKM
1	Pune-Shindawane	CR	Maharashtra	32
2	Kolhapur-Miraj-Dhalgaon	CR	Maharashtra	112
3	Wani-Pimpalkhutti	CR	Maharashtra	66
4	Naupada-Patapatnam	ECOR	Andhra Pradesh	34
5	Talcher-Sunakhani	ECOR	Odisha	18
6	Patapatnam-Gunupur	ECOR	Odisha	56
7	Lanjigarh-Junagarh	ECOR	Odisha	52
8	Khagariya-Samastipur-Darbhanga-Jaynagar	ECR	Bihar	192
9	Maheshpur-Rema-Mahesh Munda	ECR	Jharkhand	88
10	Shanki-Tatisilway	ECR	Jharkhand	30
11	Karaila Rd-Mahadiya	ECR	Madhya Pradesh	18
12	Chopan-Karaila road	ECR	Uttar Pradesh	45
13	Jamalpur-Munger-Sahibpur Kamal	ER	Bihar	21
14	Shivanarayanpur-Ammapali	ER	Bihar	23
15	Bonidanga-Tinpahar-Sahibganj & Tinpahar-Rajmahal	ER	Jharkhand	75
16	Ammapali-Sahibganj	ER	Jharkhand	12
17	Ahmadpur-Katwa	ER	West Bengal	51
18	Thokur-Bijoor	KRCL	Karnataka	109
19	Mandawar-Bandikui	NCR	Rajasthan	29
20	Dingwai-Badausa-Manikpur	NCR	Uttar Pradesh	89
21	Chunar-Chopan	NCR	Uttar Pradesh	100
22	Jalalpur-Thawe-Chhapra Kacheri	NER	Bihar	134
23	Mendu-Farrukhabad-Kalyanpur	NER	Uttar Pradesh	289
24	Mankapur-Katra-Ayodhya	NER	Uttar Pradesh	36
25	Daliganj-Sitapur	NER	Uttar Pradesh	82
26	Aluabari-Dumdangi	NFR	Bihar	26
27	Gunjaria-Aluabari & Dumdangi-NJP	NFR	West Bengal	41
28	Patiala-Dhuri	NR	Punjab	54
29	Batala-Bharoli	NR	Punjab	66
30	Beas-Amritsar	NR	Punjab	72
31	Raja ka Sahaspur-Chandausi-Aonla	NR	Uttar Pradesh	64
32	Utratia-Shrirajnagar	NR	Uttar Pradesh	33
33	Unnao-Unchahar	NR	Uttar Pradesh	110
34	Rewari-Mahendragarh-Sadulpur	NWR	Haryana	139
35	Suratgarh-Biradhwai	NWR	Rajasthan	20

<b>S N</b>	<b>Section</b>	<b>Rly</b>	<b>State</b>	<b>RKM</b>
36	Alwar-Bandikui-Bassi	NWR	Rajasthan	<b>118</b>
37	Kanakpura-Phulera	NWR	Rajasthan	<b>49</b>
38	Bhinwalia-Rani-Swarupganj	NWR	Rajasthan	<b>116</b>
39	Sawai Madhopur-Sheodaspura	NWR	Rajasthan	<b>106</b>
40	Madar-Ajmer-Adarsh Nagar	NWR	Rajasthan	<b>13</b>
41	Obulavaripalli-Krishnapatnam	SCR	Andhra Pradesh	<b>7</b>
42	Nadikudi-Macherla	SCR	Andhra Pradesh	<b>34</b>
43	Kukkadam-Vishnupuram	SCR	Telangana	<b>28</b>
44	Gangadhara-Lingampet-Jagityal	SCR	Telangana	<b>26</b>
45	Lakholi-Raipur	SECR	Chhattisgarh	<b>29</b>
46	Kharsia-Korichapper	SECR	Chhattisgarh	<b>43</b>
47	Kelod- Bhimalgoni	SECR	Madhya Pradesh	<b>45</b>
48	Part of Mangaluru-Panambur	SR	Karnataka	<b>13</b>
49	Thanjavur-Thiruvarur	SR	Tamil Nadu	<b>54</b>
50	Cuddalore Port-Thiruvarur	SR	Tamil Nadu	<b>113</b>
51	Obalapuram-Rayadurga	SWR	Andhra Pradesh	<b>38</b>
52	Hosapete-Toranagallu-Ranjitpura	SWR	Karnataka	<b>57</b>
53	Ballari-Obalapuram	SWR	Karnataka	<b>15</b>
54	Baiyyappanahalli-Anekal	SWR	Karnataka	<b>35</b>
55	Chachaura Binaganj-Pachora	WCR	Madhya Pradesh	<b>61</b>
56	Sagma-Satna-Rewa	WCR	Madhya Pradesh	<b>56</b>
57	Khanna Banjari-Joba-Majholi	WCR	Madhya Pradesh	<b>181</b>
58	Badarwas-Shivpuri	WCR	Madhya Pradesh	<b>53</b>
59	Ohan-Bansapahar	WCR	Uttar Pradesh	<b>6</b>
60	Jakhvada-Viramgam-Sanand	WR	Gujarat	<b>41</b>
61	Rajkot-Hapa	WR	Gujarat	<b>72</b>
62	Mahesana-Viramgam	WR	Gujarat	<b>67</b>
63	Mahesana-Vadnagar	WR	Gujarat	<b>35</b>
64	Viramgam-Surendranagar-Dhola	WR	Gujarat	<b>187</b>
65	Dhrangadhra-Surendranagar	WR	Gujarat	<b>31</b>
66	Dosawas-Nimach-Nimbahera	WR	Madhya Pradesh	<b>157</b>
67	Fatehabad-Laxmibainagar	WR	Madhya Pradesh	<b>33</b>
68	Nimbahera - Chittaurgarh	WR	Rajasthan	<b>41</b>
<b>Total</b>				<b>4,378</b>

#### **IV Important Electrification Projects Completed during 2019-20:**

##### **(i) Vizianagaram - Rayagada - Titlagarh - Raipur rail line**

Railway Electrification of Vizianagaram - Rayagada - Titlagarh - Raipur rail line of East Coast & South East Central Railways covering 465 Route kilometers and passing through the states of Andhra Pradesh, Chhattisgarh & Odisha has been completed.



*India's longest Electrified Rail tunnel of 6.6 Kms between Rapuru - Cherlopalli, SCR*

(ii) **Mankapur-Katra-Ayodhya rail line**

Railway Electrification of Mankapur-Katra-Ayodhya rail line of North Eastern Railway, covering 38 Route kilometers and passing through the State of Uttar Pradesh has been completed.

(iii) **Samastipur-Khagaria rail line**

Railway Electrification of Samastipur-Khagaria rail line of East Central Railway, covering 85 Route kilometers and passing through the State of Bihar has been completed.

(iv) **Chunar-Chopan rail line**

Railway Electrification of Chunar-Chopan rail line of North Central Railway, covering 100 Route kilometers and passing through the State of Uttar Pradesh has been completed.

(v) **Guntakal - Bellari - Hosapete including Toranagallu - Ranajitpura rail line**

Railway Electrification of Guntakal - Bellari – Hosapete including Toranagallu - Ranajitpura Branch Line rail line of South Central & South Western Railways, covering 138 Route kilometers and passing through the State of Andhra Pradesh & Karnataka has been completed.

(vi) **Mathura- Kasganj-Kalyanpur rail line**

Railway Electrification of Mathura-Kasganj-Kalyanpur rail line of North Eastern Railway, covering 338 Route kilometers and passing through the State of Uttar Pradesh has been completed.

(vii) **Beas-Goindwal Sahib-Taran Taran-Amritsar rail line**

Railway Electrification of Beas-Goindwal Sahib-Taran Taran-Amritsar rail line of Northern Railway, covering 72 Route kilometers and passing through the State of Punjab has been completed.

(viii) **Unnao-Unchahar rail line**

Railway Electrification of Unnao-Unchahar rail line of Northern Railway, covering 113 Route kilometers and passing through the State of Uttar Pradesh has been completed.

(ix) **Ratlam-Fatehabad-Laxmibainagar rail line**

Railway Electrification of Ratlam-Fatehabad-Laxmibainagar rail line of Western Railway, covering 115 Route kilometers and passing through the State of Madhya Pradesh has been completed.

(x) **Peddapalli - Lingampet – Jagityal rail line**

Railway Electrification of Peddapalli - Lingampet – Jagityal rail line of South Central Railway, covering 83 Route kilometers and passing through the State of Telengana has been completed.

(xi) **Darbhanga-Jaynagar rail line.**

Railway Electrification of Darbhanga-Jaynagar rail line of East Central



Railway, covering 69 Route kilometers and passing through the State of Bihar has been completed.

**(xii) Wani-Pimpalkhutti rail line.**

Railway Electrification of Wani-Pimpalkhutti rail line of Central Railway, covering 66 Route kilometers and passing through the State of Maharashtra has been completed.

**(xiii) Katwa-Ahmadpur rail line**

Railway Electrification of Katwa-Ahmadpur rail line of Eastern Railway, covering 52 Route kilometers and passing through the State of West Bengal has been completed.

**(xiv) Kaptanganj-Thawe-Khairah-Chhapra Kacheri rail line**

Railway Electrification of Kaptanganj-Thawe-Khairah-Chhapra Kacheri rail line of North Eastern Railway, covering 206 Route kilometers and passing through the State of Bihar & Uttar Pradesh has been completed.

**(xv) Naupada-Gunupur rail line**

Railway Electrification of Naupada-Gunupur rail line of East Coast Railway, covering 90 Route kilometers and passing through the State of Andhra Pradesh & Odisha has been completed.

**(xvi) Utretia - Rae Bareli - Amethi - Janghai rail line**

Railway Electrification of Utretia Rae Bareli - Amethi - Janghai rail line of Northern Railway, covering 214 Route kilometers and passing through the State of Uttar Pradesh has been completed.

**(xvii) Bandikui-Bharatpur rail line**

Railway Electrification of Bandikui-Bharatpur rail line of North Central Railway, covering 97 Route kilometers and passing through the State of Rajasthan has been completed.

**(xviii) Jhansi - Manikpur including Khairar - Bhimsen rail line**

Railway Electrification of Jhansi - Manikpur including Khairar - Bhimsen rail line of North Central Railway, covering 409 Route kilometers and passing through the State of Uttar Pradesh has been completed.

**(xix) Pagidipalli - Nallapadu rail line**

Railway Electrification of Pagidipalli - Nallapadu rail line of South Central Railway, covering 285 Route kilometers and passing through the State of Andhra Pradesh & Telangana has been completed.

**(xx) Amritsar-Batala-Bharoli rail line**

Railway Electrification of Amritsar-Batala-Bharoli rail line of Northern Railway, covering 104 Route kilometers and passing through the State of Punjab has been completed. This has resulted in smooth and seamless flow of electric trains in the section.



Automatic Signaling between Bilaspur  
Chord Cabin-Uslapur section, SECR

## Signal and Telecom

### Signalling

To enhance efficiency and safety in train operations, Modern Signaling Systems comprising of Panel Interlocking/Route Relay interlocking/Electronic Interlocking (PI/RR/EI) with Multi Aspect Colour Light Signals are being progressively provided. So far, 6,018 stations (covering about 96% of interlocked Broad Gauge stations) on Indian Railways have been provided with such systems, replacing the obsolete Multi Cabin Mechanical Signaling System, thus optimising operational cost involved in its operation as well as enhancing safety by reducing human intervention. During 2019-20, 12 Major Stations namely, Tilak Bridge, Faridabad, Ballabgarh, Madurai, Bhilai Marshaling, Jabalpur, Chakradharpur, Jaipur, Abu Road, Tundla, Danapur and Patratu have been provided with Route Relay Interlocking (RRI)/Electronic Interlocking (EI). Panel Interlocking and Electronic Interlocking have been provided at 55 and 350 stations, respectively.

**Complete Track Circuiting:** To ensure track occupation verification, Track Circuiting has been completed at about 34,597 locations up to 31.03.2020 covering 'A', 'B', 'C', 'D Special' and 'E Special' routes. Total 6,147 stations have been provided with complete track circuiting.

**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 31.03.2020, BPAC has been provided on 5,663 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 31.03.2020, Intermediate Block Signaling has been provided in 602 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 31.03.2020, Automatic Block Signalling has been provided on 3,309 Route Km.

**Train Collision Avoidance System (TCAS)** has been developed by RDSO. Successful trials have been completed on 250 Route Km. Works are in progress on 1200 Route km of section on South Central Railway. It has now been decided to adopt TCAS as National ATP for implementation on Indian Railways. It shall be provided on High Density Network (HDN) & freight dense Highly Utilized Network (HUN) routes on priority in next 4-5 years.

**Centralized Traffic Control (CTC):** It is a computer based system which facilitates direct control and management of multiple Signaling 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 operationalised.

Further works of CTCs on about 7,000 Route Km covering all Zonal Railways are sanctioned and entire HDN Routes covering GQ & GD shall be provided with CTC.

**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.

**Interlocking of Level Crossing Gates:** Indian Railways have provided interlocking with Signals at 11,639 Level Crossing Gates as on 31.03.2020, to enhance the safety at Level Crossings.

**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, Signaling System continues to function normally with minimum effect on train operation. 5,092 Nos. of busy interlocked gates have been provided with Sliding Booms as on 31.03.2020 in addition to lifting barriers and further busy gates are also being progressively covered.



*Route Relay Interlocking at Bhilai Exchange Yard, SECR*

<b>Growth of deployment of Signaling on Indian Railways (As on 31.03.2020)</b>					
<b>Item</b>	<b>March' 16</b>	<b>March' 17</b>	<b>March' 18</b>	<b>March' 19</b>	<b>March' 20</b>
Panel Interlocking (Stations)	4,107	4,155	4,130	4,052	<b>3,863</b>
Route Relay Interlocking (Stations)	281	281	282	228	<b>228</b>
Electronic Interlocking (Stations)	1,005	1,148	1,358	1,606	<b>1,927</b>
PI/RR/IEI (Stations)	5,393	5,584	5,770	5,886	<b>6,018</b>
Block Proving by Axle Counter (Block sections)	4,640	4,976	5,058	5,363	<b>5,663</b>
Automatic Signalling (Route Km)	2,752	2,866	2,901	3,039	<b>3,309</b>
Intermediate Block Signalling (Block sections)	489	501	532	574	<b>602</b>
Interlocked level Crossing Gates (Nos.)	10,776	10,826	11,006	11,375	<b>11,639</b>

### **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 signaling, 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, Token less 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 2020, Indian Railways has about 59,105 Route Kilometers of Optical Fiber Cable (OFC) that is carrying Gigabits of traffic. Railways Control Communication which is quintessential for train operation and control is also being transferred to 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 Government of India. Wi-Fi internet facility at 5,819 stations has been provided till 31.10.2020. Work is in progress at remaining 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 Railways has planned to provide Video Surveillance System at 6,124 (A1, A, B, C, D & E category) stations. Video Surveillance (CCTV) System has been provided at 627 stations till 31.08.2020. In addition, CCTV was 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 and voice needs.

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. Besides, IR network uses 16,880 data circuits that power its various data and voice networks across the country.

Railways have also established their Multi-Protocol Level Switching (MPLS) based Next Generation Network (NGN) for voice traffic. This Next Generation Network (NGN) has been used to interconnect more than 100 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 using 1.54 lakh VHF walkie-talkies sets to ensure

safety and enhance reliability.

Telecom also plays a major role in ensuring passenger comfort. For the convenience of passengers, Train Information Boards have been provided at 1,137 Stations, Public Address (PA) Systems at 4,508 stations and Coach Guidance System at 649.

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 30.09.2020, 106 locations including all zonal & divisional headquarters have been connected through e-Office over Indian Railways.

#### Important Telecom assets are tabulated below:-

S N.	Installation	Units	As on 31.03.2019	As on 31.03.2020
1.	Optical Fiber Cable	Rkms	55,835	<b>59,105</b>
2.	Quad Cable	Rkms	62,571	<b>62,732</b>
3.	Railway Telephone Subscribers Lines	Nos.	3,95,816	<b>3,56,910</b>
4.	No. of Control Sections provided with Dual Tone Multiple Frequency (DTMF) control equipment	Nos.	322	<b>323</b>
5.	Mobile Train Radio communication System (Route kms.)			
	a. GSM (R) based	Rkms	2,461	<b>3,445</b>
	b. TETRA based	Rkms	53	<b>53</b>
6.	Digital Microwave (7 GHz)	Rkms	1,178	<b>498</b>
7.	Public Address System	Nos. of STNs	5,206	<b>4,508*</b>
8.	Train Display Boards	Nos. of STNs	1,113	<b>1,137</b>
9.	Coach Guidance System	Nos. of STNs	583	<b>649</b>
10.	VHF Sets			
	a. 5 Watt sets (Hand held)	Nos.	1,44,040	<b>1,53,999</b>
	b. 25 Watt sets (At Stations)	Nos.	7,795	<b>9,767</b>
11.	V SAT	Nos.	635	<b>635</b>
12.	Railnet Connections	Nos.	1,31,502	<b>1,53,999</b>
13.	UTS/PRS Circuits	Nos.	11,044	<b>11,044</b>
14.	FOIS Circuits	Nos.	2,454	<b>3,030</b>
15.	NGN & Exchange Circuits	Nos.	2,536	<b>2,536</b>
16.	Wi-Fi at Stations	Nos. of STNs	1,372	<b>5,661</b>
17.	CCTV at Stations	Nos. of STNs	453	<b>598</b>

\*Revised



## Safety

There were 54 consequential train accidents in the financial year 2019-20 as compared to 59 accidents in 2018-19. Train Accidents per Million Train Kilometers, an important index of safety, was 0.05 during the year 2019-20, which is at the same level as was during the year 2018-19.

Category-wise and Cause-wise analysis of consequential train accidents during the last two years i.e. 2018-19 & 2019-20 is given as under:

Categories	No. of consequential train accidents	
	2018-19	2019-20
Collisions	-	5
Derailments	46	40
Accidents at level crossings	6	1
Fire in trains	6	7
Miscellaneous	1	1
<b>Total</b>	59	54*
<b>Causes of train accidents:</b>		
Human failures:		
(a) failure of railway staff	42	44
(b) failure of persons other than railway staff	9	5
Equipment failures:		
(a) Rolling stock	1	3
(b) Track	1	1
(c) Electrical	-	-
(d) S&T	-	-
Sabotage	-	-
Combination of factors	-	-
Incidental	6	1
Cause not established/non held	-	-
Under Investigation	-	-
<b>Total</b>	59	54*
<b>Casualties:</b>		
Passengers:		
Killed	16	00
Injured	90	73
Railway Employees:		
Killed	1	4
Injured	2	7
<b>Others:</b>		
Killed	20	1
Injured	20	2

\*Excluding one accident (Fire in train) of Konkan Railway.

## Compensation

A sum of ₹\*376.10 lac (approximately) was paid as compensation under section 124 of Indian Railways Act, 1989 for death/injury in train accidents to the next of kin/victims during 2019-20 as compared to ₹641.15 lac (approximately) in 2018-19. The compensation paid during a year relates to cases settled and not necessarily to the number of accidents/casualties during that year.

\*Excluding Konkan Railways and Metro Railway, Kolkata.

## 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 2018-19 and 2019-20 were as under:

Year	Rolling stock (In lac)	Permanent Way (In lac)	Interruption to through communication (In Hrs)
2018-19	2,219.84	833.95	555.55
<b>2019-20</b>	<b>3,232.97</b>	<b>566.87</b>	<b>309.47</b>

## Rashtriya Rail Sanraksha Kosh (RRSK)

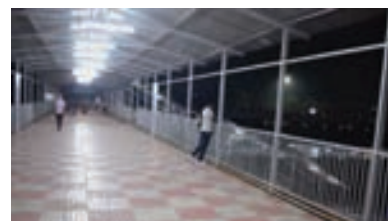
‘Rashtriya Rail Sanraksha Kosh (RRSK)’ has been introduced in 2017-18 for replacement/renewal/upgradation of critical safety assets, with a corpus of ₹1 lac crore for five years, having annual outlay of ₹20,000 crore. Since its inception, expenditure of ₹16,091 crore in 2017-18, ₹18,015 crore in 2018-19 and ₹15,025 crore in 2019-20 (Prov.) has been made out of the Fund for safety works. In 2020-21 also, a provision of ₹20,000 crore has been made, against which expenditure of approximately ₹5,966 crore has been incurred till June, 2020.

The 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 headed by Hon’ble Prime Minister.

## Measures to Improve Safety

- **Safety Focus** - to reduce accidents caused by human errors, a multi-pronged 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.



Foot Over Bridge at Ranchi Station, SER



Road Over Bridge between Gundlapochampalli-Bolarum, Rly

- **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 2019-20, 85 Internal Safety Audits and 31 Inter-Railway Safety Inspections were carried out.
- **Training facilities** - No. of non-gazetted staff who were imported Refresher training during 2019-20 is 1,69,061.

## II Measure To Avoid Collisions

To avoid collisions, Provision of technological aids pertaining to Signalling are briefly enumerated in the provision of chapter 'Signal and Telecom' under "Signalling" Section at page no. 46 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. 36 of this book.

## IV Measures To Improve Safety Of Coaches

There are several measures taken to strengthen the safety and reliability of Railway passengers and coaches to prevent fire in coaches as given below:-

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

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 2,063 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. Also, Pantry Cars are 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 1,128 Power cars and 278 Pantry cars are fitted with this system. The work of retro fitment is being carried out progressively. Further, instructions have 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.

#### **v) 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 and 6,277 coaches in 2019-20.

#### **vi) 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. All LHB coaches have been provided with balanced draft gear.

#### **vii) 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 EMU & DMU 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 manufactured LHB coaches.

#### **viii) 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. Three air-conditioned EMU (Electric Multiple Unit) rake with Automatic doors have 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. Automatic door closure mechanism has also been provided in the coaches



*Isolation ward in Dhanbad Railway Hospital, ECR*



RPF dressed as 'Yamraj' spreading awareness on trespassing, WR

of Tejas rake running between Mumbai - Goa and Chennai-Madurai. Select variants of the main line coaches will be provided with Automatic door closure mechanism. Automatic coach entry doors have also been provided in the rake of Vande Bharat train running between New Delhi and Varanasi. Further, instructions have been issued to Production Units (RCF & MCF) to turn out all future Humsafar and Uday train coaches with Automatic Plug type doors (4 nos. per coach).

#### ix) 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.

Sanction under the Rolling Stock Programme (RSP) exists for the provision of Double Acting doors in 6,500 coaches. The work is being carried out in a phased manner and in 3,124 nos. of coaches it has been provided. Further, instructions have been issued to Production Units that all newly manufactured AC coaches shall be provided with Double Acting doors only.

### V Measures To Curb Accidents At Unmanned Level Crossing

Various measures taken by Indian Railways to prevent accidents at level crossings, are as under:

- **Level Crossing:**

Level crossings are meant to facilitate the smooth running of traffic in a regulated manner governed by specific rules & conditions. Status of level crossings on IR as on 01.04.2020 is as under:

Total Number of level crossings	:	21,323
Number of manned level crossings	:	20,375 (95.6%)
Number of unmanned level crossings	:	948 (4.4%)

Indian Railway has decided to progressively eliminate the level crossings for the safety of Road users and train passengers. During the year 2019-20, 1,273 Nos. of manned level crossings have been eliminated. All unmanned Level Crossings on Broad Gauge have already been eliminated on 31.01.2019.

### Bridges – Inspection and Management System

Modern Bridge Inspection techniques have been adopted, which includes testing by non-destructive testing equipments, under water inspections, monitoring the water level with the help of water level system etc.

As on 01.04.2020, Indian Railways has a total number of 1,50,390 Bridges, out of which 702 bridges are important, 12,256 bridges are major and 1,37,432 bridges are minor.



During the year 2019-20, a total number of 1,367 Bridges are strengthened/Rehabilitated/Rebuilt.

- **Road Over/Under Bridges:**

To improve safety of train operations 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 2019-20, 145 ROBs and 1,170 RUBs/subway have been constructed under cost sharing, railway cost/accommodation works, Deposit/BOT term and by NHAI over Indian Railway.

## **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** - As per the provision of Disaster Management Act, 2005, Ministry of Railways has prepared Disaster Management for Ministry of Railways. All Zonal Railways and divisions have also prepared their Disaster Management Plan.
- **Mock Drills/Exercises** - For coordination and management during Disaster/major train accidents, Indian Railways has started 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 teams, institutional mechanisms, and the equipment. 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 Train (ART), Accident Relief Medical Van (ARMV) etc. Shortcomings noticed and lessons learnt during the Mock drill are documented for corrective action and to improve SOPs.

## Rolling Stock

New Rolling Stock placed on line during the year 2019-20 is given in the following table:

Type of Rolling Stock	Year	Replacement account			Units placed on line		
		B.G.	M.G.	N.G.	B.G.	M.G.	N.G.
Diesel Locos	2018-19	92	-	3	10	-	2
	<b>2019-20</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>189</b>	<b>-</b>	<b>-</b>
Electric Locos	2018-19	40	-	-	478	-	-
	<b>2019-20</b>	<b>56</b>	<b>-</b>	<b>-</b>	<b>830</b>	<b>-</b>	<b>-</b>
Wagons@ (in vehicle units)	2018-19	12,649	-	-	-	-	-
	<b>2019-20</b>	<b>15,443</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Electric Multiple Units							
Motor Coaches	2018-19	112	-	-	51	-	-
	<b>2019-20</b>	<b>56</b>	<b>-</b>	<b>-</b>	<b>42</b>	<b>-</b>	<b>-</b>
Trailer Coaches	2018-19	245	-	-	89	-	-
	<b>2019-20</b>	<b>112</b>	<b>-</b>	<b>-</b>	<b>130</b>	<b>-</b>	<b>-</b>
Main line Electric Multiple Units							
Motor Coaches	2018-19	4	-	-	148	-	-
	<b>2019-20</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>170</b>	<b>-</b>	<b>-</b>
Trailer Coaches	2018-19	10	-	-	446	-	-
	<b>2019-20</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>513</b>	<b>-</b>	<b>-</b>
Passenger Carriages	2018-19	1,350	-	-	2,548	4	-
	<b>2019-20</b>	<b>1,612</b>	<b>-</b>	<b>-</b>	<b>3,787</b>	<b>-</b>	<b>-</b>
Other Coaching Vehicles	2018-19	239	-	-	292	-	-
	<b>2019-20</b>	<b>229</b>	<b>-</b>	<b>-</b>	<b>649</b>	<b>-</b>	<b>-</b>

@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.	
	2018-19	<b>2019-20</b>	2018-19	<b>2019-20</b>	2018-19	<b>2019-20</b>
Diesel Locos	92	<b>123</b>	27	<b>01</b>	03	<b>04</b>
Electric Locos	40	<b>56</b>	-	<b>-</b>	-	<b>-</b>
Wagons (in Vehicle Units)	3,248	<b>2,490</b>	206	<b>04</b>	-	<b>-</b>
Electric Multiple Units						
Motor Coaches	99	<b>191</b>	-	<b>-</b>	-	<b>-</b>
Trailer Coaches	191	<b>12</b>	-	<b>-</b>	-	<b>-</b>
Passenger Carriages	1,350	<b>1,612</b>	38	<b>28</b>	61	<b>09</b>
Other Coaching Vehicles	239	<b>229</b>	7	<b>02</b>	7	<b>-</b>

## 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, 2020, in comparison to the previous year, is as follows:

Locomotive	As on March 31, 2019	(in units)
		As on March 31, 2020
Steam	39	39
Diesel	6,049	5,898
Electric	6,059	6,792
<b>Total</b>	<b>12,147</b>	<b>12,729</b>



Inside Shell Shop, Modern Coach Factory, Rae Bareilly

## Manufacturing of Rolling Stock

The performance of Production Units during 2019-20 was as under:

- **Chittaranjan Locomotive Works (CLW), Chittaranjan** manufactured 431 nos stat-of-the-art BG 3-phase HHP electric locomotives equipped with IGBT technology based propulsion system & auxiliary converters.
- **Diesel Locomotive Works (DLW), Varanasi** manufactured 306 locomotives including 27 locomotives for Non-Railway Customers (NRC). The turnover for NRC/Exports was ₹515 crore. DLW also converted 04 Nos WDG4 diesel locomotives to WAG11 electric locomotive.
- **Integral Coach Factory (ICF), Chennai** manufactured 4,204 coaches including 312 EMUs, 54 DEMUs (42 for Haldia), 24 high speed Self Propelled Accident Relief Train (SPART), 40 coaches for Kolkata Metro, 3,419 LHB coaches, 224 three phase MEMUs, 16 Train set coaches, 49 (DETC) and 49 coaches for Sri Lankan Railways. The turnover for NRC/Exports customers was ₹340.21 crore.
- **Rail Coach Factory (RCF), Kapurthala** manufactured 1,342 coaches including 414 MEMU and 928 LHB coaches.
- **Modern Coach Factory (MCF), Raebareilly** manufactured 1,930 LHB coaches during 2019-20.
- **Rail Wheel Factory (RWF), Bengaluru** assembled 58,868 wheel-sets. RWF manufactured 1,76,387 wheels and 80,849 (units) axles during the year 2019-20. The turnover for NRC customers was ₹212.41 crore.
- **Rail Wheel Plant (RWP), Bela** produced 29,563 wheels during 2019-20.
- **Diesel Loco Modernisation Works (DMW), Patiala** rebuilt and upgraded 06 diesel electric locomotives from 2,600 HP to 3,100/3,300 HP along with fitment of Microprocessor Based AC-DC Power Transmission system resulting in improved fuel efficiency and enhanced reliability. DMW manufactured 81 nos 3-phase (WAP-7) High Horse Power (HHP) BG electric locomotives, 48 nos DETC tower cars including one DETC for NRC. The turnover for NRC/Export customer was ₹29.62 lac during 2019-20.



WAP-5 Passenger Loco of 5400 HP

## **The details of innovations and new initiatives of EMU, MEMU and Vande-Bharat (T-18) Express train during 2019-20 is as under**

### **Vande-Bharat (T-18) Express train**

2<sup>nd</sup> Electric Train set i.e. Vande Bharat express has been introduced on NDLS-SVDK route on 3rd Oct., 2019. This train has been manufactured on EMU platform and having very high acceleration/deceleration characteristics resulting in saving in journey time as compared to existing Rajdhani/ Shatabdi train running on same route. It has several unique features as given below:

- Fully automatic doors and AC coaches
- Onboard Wi-Fi access
- GPS based advanced system
- Speed potential of 160 kmph
- Discharge less Bio-Vacuum toilets
- CCTV cameras providing smart security in the train

### **Air conditioned EMU**

During 2019-20, Seven Air conditioned EMU rakes with indigenously developed 3-phase IGBT based on-board propulsion system have been turned out from ICF (4-WR & 3-CR), out of which 3 rakes have been introduced in service (2-WR & 1-CR).

### **3-phase non AC EMU rakes**

During 2019-20, eighteen non AC EMU rakes with 3 phase IGBT based propulsion system have been further introduced over Indian Railways.

### **3-Phase MEMU rakes**

In 2019-20, 29 Main Line Electrical Multiple Unit (MEMU) rakes equipped with indigenously developed 3 phase IGBT based on-board propulsion system have been introduced over Indian Railways.

### **Head –On-Generation system (HOG)**

End on Generation (EOG) trains are converted to Head on Generation (HOG) trains which may result in huge saving of diesel consumption. So far, 1,096 trains (674 in 2019-20) have been converted to HOG system. There is projected saving to the tune of `2,680 crore per annum, when these trains will work end to end on electrified route.

### **LED lights in coaches**

During 2019-20, 36,500 coaches have been fitted with energy efficient LED lights. There is likely saving of ₹25,500 per coach per annum in energy bills.

### **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

2019-20 is furnished below:

	<b>LOCOMOTIVES/COACHES</b>	2018-19	<b>2019-20</b>
DLW	WDP-4D	7.65	<b>9.36</b>
	WAP-7	0.91	<b>1.08</b>
	WAG-9	1.36	<b>1.63</b>
	WDG-3A	2.96	<b>9.12</b>
	WDS-6	2.94	<b>4.5</b>
	Sri Lanka Loco	0.45	<b>0.74</b>
	WDG-4D	8.84	-
	WDG-5	40.75	-
	WAG-11	5.25	-
RCF	LGS	2.17	<b>1.41</b>
	LSLRD (LC)	-	<b>1.33</b>
	EOG/LHB/FAC	-	<b>1.14</b>
	SCZAC/EOG/LHB	-	<b>1.18</b>
	VPHX	-	<b>1.91</b>
	LWSCZ	2.23	<b>1.43</b>
	LWSCN	2.22	<b>1.46</b>
	LFCWAC	-	<b>1.13</b>
	ACCB/EOG/LHB	-	<b>1.13</b>
	WLRRM/EOG/LHB	-	<b>0.86</b>
	ACCW/EOG/LHB	-	<b>1.09</b>
	RA AC	-	<b>1.45</b>
	EOG/LHB/ACCN (Humsafar)	-	<b>1.01</b>
	LGS (Antyodya)	-	<b>1.44</b>
	DD UDAY	-	<b>0.81</b>
	LACCNX	-	<b>1.11</b>
	LWACCN	1.70	-
	LWACCW	1.74	-
	LWCBAC	1.67	-
	LWFAC	1.73	-
	LWFCWAC	1.75	-
	LWFCZAC	1.75	-
	LWFCZAC	1.40	-
	LWFCZACHS	1.40	-
	LWLCBRRM	1.22	-
	LWLRRMHS	1.24	-
	LWS	2.34	-
	LWSCZAC	1.73	-
	LWSCZACHS	1.73	-
CLW	WAG-9	2.65	<b>2.84</b>
	WAP-7	2.35	<b>2.37</b>
	WAP-5	3.92	<b>8.25</b>
MCF	LWACCW	3.62	<b>1.72</b>
	LWACCN	3.62	<b>1.73</b>
	LWSCN	4.71	<b>2.34</b>
	HUMSAFAR TURNKEY	3.37	<b>1.54</b>



WAP-7 Passenger Loco of 6000 HP





The 3-phase EMUs introduced in Chennai suburban promises greater speed and comfort

<b>LOCOMOTIVES/COACHES</b>		<b>2018-19</b>	<b>2019-20</b>
ICF	DEEN DAYALU	3.61	<b>2.07</b>
	TRC	3.68	-
	TRSC	3.58	-
	LWSCN(G)	4.68	<b>2.00</b>
	LWLRRM	2.95	<b>1.24</b>
	LDSLRL	2.24	<b>1.28</b>
	LWSCZ	5.06	<b>2.43</b>
	LWSZAC	-	<b>1.81</b>
	LWFAC	-	<b>2.27</b>
	LWLBAC	4.04	<b>1.65</b>
	LACCN	2.87	<b>0.65</b>
	LACCW	2.65	<b>0.69</b>
	LFCWAC	-	<b>0.25</b>
	LS	-	<b>0.28</b>
	LSCN	2.39	<b>0.61</b>
	LSCZ	2.08	<b>0.28</b>
	LSCZ AC	2.58	<b>0.69</b>
	LWCB AC	-	<b>1.28</b>
	LWFAC	-	<b>1.65</b>
	LWLRRM	1.81	<b>0.46</b>
	LWLRRM TEJAS	1.85	-
	AC EMU B	0.39	-
	LFCZAC	2.37	-
	LGS	2.00	-
	LOMS	1.16	-
	MEMU DMC US	0.29	-
	MEMU TC US	1.06	-
	TRAIN 18 DTC	0.55	<b>0.52</b>
	TRAIN 18 MC	0.26	<b>0.25</b>
	TRAIN 18 MC EC	0.56	<b>0.54</b>
	TRAIN 18 TC	0.52	<b>0.53</b>
	TRAIN 18 NDTC	0.53	<b>0.54</b>
	TRAIN 18 NDTC EC	0.53	<b>0.53</b>
	AC EMU NDMC US	0.50	-
	AC EMU TC US	0.86	-

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 2019-20, 15,443 wagons were inducted in Indian Railway System. Out of these, 1,243 wagons (including 255 BLC wagons) were manufactured by Railway Workshops and the remaining 14,200 wagons (including 1,141 BLC wagons) were manufactured by wagon industry.

During the year 2020-21 (upto September,2020) 5,052 wagons were inducted in Indian Railways System. Out of these, 432 wagons (including 10 BLC wagons) were manufactured by Railway Workshops and the remaining

4,620 wagons (including 220 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	
	2018-19	2019-20
Diesel Locos	440	423
Electric Locos	465	490
Coaches	30,649	30,533
Wagons	53,903	55,433

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.	
	2018-19	2019-20	2018-19	2019-20
Steam Locos	-	-	32.90	30.79
Diesel Locos	8.53	8.19	1.89	2.08
Electric Locos	7.11	6.99	-	-
EMU Coaches	14.4	12.20	-	-
Passenger Carriages	6.07	6.14	4.74	6.92
Other Coaching Vehicles	5.18	5.08	-	-
Wagons	3.61	3.07	100.00	79.10

### Export Order

The total value of exports of rolling stock during 2019-20 was ₹548.04 crore. The cumulative value of export of rolling stock/spares up to the end of March, 2019 and March, 2020 was ₹3,355.22 crore and ₹3,903.26 crore, respectively.

The export during 2019-20 includes Diesel Electric Locos and Diesel Electric Multiple Units to Sri Lanka

### Modernization of Workshops

Central Organisation for Modernisation 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 23,644 machines valued at ₹7,018.39 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 specialised technical projects allotted by Ministry of Railways.



WAG 9 with IGBT based propulsion system



Introduction of First AC EMU Train on CR

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.	2017-18	436.53	679.67
2.	2018-19	448.61	1,096.38
3.	<b>2019-20</b>	<b>587.58 (Best Ever)</b>	<b>802.29</b>

### 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).

#### 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 BG coaches POH capacity from 50 coaches to 100, Bhavnagar (₹48.71 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 NKJ in WCR (₹76.77 crore)

### **Other Projects in Pipeline**

- 3<sup>rd</sup> Axle Machining Line for RWF/Bengaluru (₹221.42 crore).
- Creation of facility of Maintenance of LHB Coaches at Matunga/CR (₹82.4 crore)

### **Special Projects in new technology areas in hand**

- Procurement of Simulator in motion type for training of Loco Pilots (₹350 crore)
- Procurement of Trolley Mounted Sewage Evacuation Machines (₹30 crore)
- Fitment of RFID in Wagons (₹12.11 crore)
- Fitment of Bio Vacuum Hybrid-Toilet System in 500 LHB Coaches (₹55 crore)
- Smart Yard facilities at DDU/Mugalsarai (₹36 crore)
- Procurement of Hot Axle Box Hot Wheel Detector
- Automation of Bogie Assembly in JUDW, PL and MTN workshops (₹50.82 crore)
- 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 2019-20 was ₹63,843.58 crore. A broad classification of procurement of such goods is given below:-

	(in crores of ₹)	
	2018-19	2019-20
Stores for operation, repairs and maintenance	13,424.45	<b>18,497.38</b>
Stores for construction	2,955.54	<b>2,210.58</b>
Fuel	16,564.64	<b>14,049.91</b>
Stores for manufacture of Rolling Stock and purchase of Complete units	29,189.11	<b>29,085.71</b>
Total	63,843.58	<b>63,843.58</b>

## Procurement of Iron and Steel Material

During the year 2019-20, Indian Railway's requirement of iron and steel material was met with indigenously. Procurement during 2019-20 was 55,842 MT valued at ₹312 crore.

## 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 2019-20, was ₹4,332.69 crore, as against ₹4,192.07 crore during 2018-19.



## **Digitisation**

Transparency and efficiency in public procurement and enhancing the Ease of Doing Business is an endeavour which is directly in line with 'Digital India' initiative of the Government. Digital journey of Materials Management on Indian Railways that started with roll out of e-procurement system in the year 2011-12 with limited scope of e-tendering has now extended to encompass the complete Materials Management cycle which includes demand generation, tendering, purchase decision, contracting, inspection, material 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](http://www.ireps.gov.in). An Android app "IREPS – आपूर्ति" has been launched which enables access to useful information related to Railways procurement and disposal, "on the go."

System of online processing of non-stock demand generation, online indenting and processing of imprest stores, online generation of requisition cum issue note has been rolled out by IR during 2019-20.

## **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 ₹63,843.58 crore worth of stores procured in 2019-20, 78% was done by Zonal Railways and Production Units, 22% by Railway Board.

Stores worth ₹6,503.54 crore were bought from Small Scale Sector and Khadi and Village Industries in 2019-20.

Public Sector Undertakings contributed 20% and other industries contributed 80% towards supplies.

## **Indigenous Vendor Development**

Indian Railways has fully implemented Public Procurement (Preference to Make in India) Order. The value of Indigenous stores at ₹63,052.32 crores during 2019-20 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 2019-20 was 15% (without fuel) and 10% (with fuel), as against 9% (without fuel) and 6% (with fuel) during 2018-19.



LDLRA Coach



LSLRD Coach



LWLRRMD Coach

## Research and Development

Research Designs Standards Organisation, 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 equipments 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:-

### A. Safety and Reliability

#### i. IP Based Video Surveillance System

IP Based Video Surveillance System is a complete solution for monitoring and safety of the passengers and establishment of Indian Railways. IP Based Video Surveillance System is to be provided at Main entrance/exit, Platforms, Waiting hall, Reservation counter, Parking area, Railway yards, Foot over bridges etc. of Railway stations and other Railway establishments.

#### ii. Development of EP (Electro-Pneumatic) Assisted Brake System

#### iii. Provision of LED type Light for Exchanging Signals with Train Passing Staff

To avoid the frequent opening of windows of air conditioned cab for exchanging the signals, a LED based signal exchange lamp is required to be provided outside the cabs with control push button at the Loco Pilot/ Assistant Loco Pilot desk for exchange of signals.

**iv. Development of Specification of ‘TRI-NETRA’- Terrain Imaging for Locomotive Drivers Infrared Enhanced Optical & Rangefinder Assisted. :**

A system which shall be capable to enable the Locomotive Driver to visualize and warn about infringing objects from a reasonable far away distance so as to enable him/her to apply brakes sufficiently in advance to stop the train well short of the infringement in all-weather condition including day and night.

**v. Specification for 3-Coach Diesel Electric High-Speed Self-Propelled Accident Relief Train (HS SPART) with 160 kmph**

New SPART in a single rake alongwith medical van & tool van shall be capable to reach the accident site within the shortest possible time and also within the “Golden Hour” of accident.

**vi. Rationalization of Formation Layer Thickness on Indian Railway Track:**

RDSO developed and issued a document titled “Rationalisation of Formation layer thickness on Indian Railway track” following the UIC code of International Practices to optimize the formation layer thickness on IR. This new document contains provisions for construction of formation for 25T and 32.5T axle load.

**vii. Benchmarking of Rail cum Road Vehicle (RCRV) for Ultrasonic Testing of Rail & Weld**

Benchmarking of Rail cum Road Vehicle (RCRV) for Ultrasonic Testing of Rail & Weld at speed of 40 Kmph has successfully done by RDSO. This technology will enhance the speed of Ultrasonic testing of Railway Track as compared to manual Ultrasonic testing of Railway Track at a speed of 5-6 Track Km/day/ equipment.

**viii. Development of Automatic Phase Switching Section (APSS)**

RDSO has developed Bi-directional logic relay for providing power to locomotives without break in Automatic Phase Switching Section (APSS) having insulated overlaps (IOLs) required for separating different phase supply from adjacent traction sub-stations. With this system, trains having multiple electric locomotives, EMUs etc. can easily and safely negotiate the IOLs without interruption of power for the rolling stock. Trials have been conducted in Asaudah (ASE) Traction Substation (TSS) of Northern Railway.

**B. Passenger Amenities**

**i. IP Based Integrated Passenger Information System**

IP Based Integrated Passenger Information System has been developed by RDSO. The system consists of networked Indoor & Outdoor Video Display Boards, Train Indication Displays, Coach Guidance Displays and PC Based Announcement System.



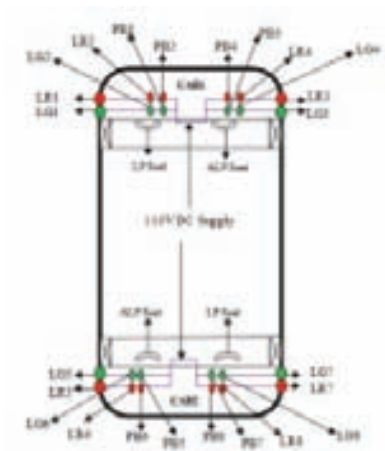
*LWRMDAC Coach*



*Control Panel*



*Pinch valve and vacuum ejector*



Location of LED lamps for signal exchange

## ii LVPH Coach

In series of developments of rolling stock on LHB platform, RDSO has designed and developed parcel van on LHB platform (LVPH), which is highest loading capacity parcel van on Indian Railways.

## iii. Bio-Vacuum Toilets

Vacuum Toilets use vacuum for transfer of fecal matter thus reducing water consumption used for flushing. Indian Railways has already completed the fitment of IR-DRDO bio toilets for greener environment. By use of hybrid bio-vacuum toilets, Indian Railways will be deriving the benefits of both technologies, i.e. Vacuum toilets adopted worldwide and provision of Environment friendly IR-“DRDO bio toilets in Indian Railway passenger coaches.

## iv Development of HOG/EOG Compatible LHB SLRs with Facilities for Divyangjan Passengers

To cater the mobility requirements of Divyangjan passengers in Trains with LHB design coaches on IR Traffic system & to operate trains with HOG compliant locomotives, RDSO has designed LSLRD, LDSLRA, LWLRRMD & LWLRRMDAC coaches with providing a separate compartment for Divyangjan passengers with minimum acceptable space & necessary facilities conceptualized after detailed interaction with NGO ‘SAMARTHAYA’ a National Centre for promotion of barrier free environment for persons with disabilities (Divyangjan) based in Delhi.

## C. Operational Efficiency

### i. Air Conditioning of Driver’s Cab in HHP Class of Diesel Electric Locomotive

Railway Board advised RDSO to work on Air Conditioning of Driver’s cab in existing fleet of HHP locomotives which have been earlier turned out by DLW without having provision of HVAC. This shall be applicable to single as well as dual cab WDG4 and WDP4B BG diesel electric HHP locomotives. This will render comfort to cabin crew during train operation.

### ii. Development of End of Train Telemetry (EoTT)

End to Train Telemetry (EoTT) is a device which could work as an alternative of freight running trains without guard.

### iii. Development of 8-Wheeler Diesel Electric Tower Car (8W-DETC)

Based on the Prototype testing, oscillation trial and CRS sanction, RDSO has developed Self-propelled 8-Wheeler Diesel Electric Tower Car (8W-DETC) with maximum operational speed of 110 kmph. 8-Wheel DETC is used for maintenance & Inspection of Over Head Equipment (OHE). This development will facilitate Zonal Railway in carrying out inspection & maintenance of OHE as well as early restoration of traffic in case of breakdowns/accidents.



LVPH Coach



## D. Indigenous Development

### i. Development of Digital Ultrasonic Single and Double Rail Tester with B-Scan

Developmental work for Digital Ultrasonic Single and Double Rail Tester as per revised specifications containing new technology i.e. B-Scan (continuous recording facility upto 50 km), GPS location, Real time recording for future analysis etc has been successfully completed.

### ii. Adoption of modified Design of Ballastless Track with indigenous Fastening System (BLT-IFS) for speed upto 50 kmph for 25T axle load over Indian Railways

RDSO designed & developed a Ballastless Track with indigenous fastening system (BLT-IFS) for trial for 'at-formation' tracks and for platform lines as washable apron for speeds upto 110 kmph. The BLT-IFS design had been approved by Railway Board for trial in Zonal Railways & PSUs and 100 m track on mainline at RVNL project.

### iii. Unique Identification (UID) Number of CMS Crossing

In view of digitizing of IR track's data, it was necessary to allot a Unique Identification (UID) Number of CMS crossings for their easy identification in field. This UID number may be dove-tailed with the IR Track Management System (TMS) applications so that the data regarding performance/GMT/ life/ wear/replacement reported from the field shall be directly available to all concerned for detailed analysis.

### iv. Indigenous development of Radio equipment for Distributed Power Wireless Control System (DPWCS)

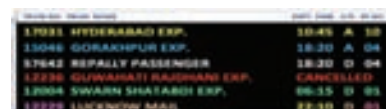
The requirement of the interoperability feature is desirable for flexibility in operation of locomotives fitted with Distributed Power Wireless Control System (DPWCS). This is because different Radio Equipment does not have common communication protocol for ensuring interoperability. Common RF devices in DPWCS will help in achieving objectives such as Interoperability among various make of DPWCS, Common communication protocol and simplifying the requirements for obtaining an operator's license for radios from Wireless Planning & Co-ordination (WPC) wing of Telecommunication Department.

## E. Inspection & Quality Audit

i. In RDSO, all the product inspection modules have been made online. Inspection calls are placed online and after inspection, Inspection Certificates are issued online.

### ii. 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 (Cartridge Tapered Roller Bearing) overhauling, interior furnishing coaches, ICF bogie overhauling



17031 HYDERABAD EXP.	18:45 A 10
15046 GORAKHPUR EXP.	18:30 A 04
87642 REPAALY PASSENGER	18:30 O 04
12236 GUWAHATI RAJDHANI EXP.	CANCELLED
12004 SWARN SHATABDI EXP.	06:55 O 03
12229 LUCKNOW MAIL	22:30 O 03

IP Based Integrated Passenger Information System (IPIS)



Digital Ultrasonic Double Rail Tester new technology B-Scan



Indigenous data radio





Prototype WAP-7HS Locomotive

has been considered for Quality Audit. The audit reports are uploaded on railnet (10.100.2.19) for perusal by all Railway Units.

### iii. 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 (Quality Assurance Programme).

## F. Test & Trials

### i. Trial of USP for Ballast Reduction Purpose Over Indian Railways

Indian Railway is the first Railway system in the world trying use of Under Sleeper Pad for ballast thickness reduction upto 100 mm looking after non-availability of ballast in future due to environment reasons.

### ii. Oscillation Trials

RDSO conducts various trials to assess the riding behavior of rolling stock for safe running. Such trials are conducted on all new designs of all rolling stock as well as all major design modifications affecting safety of running. Different types of trials conducted to ensure safety of rolling stocks both new and existing trials viz. 3 LHB Trials, 11 various type axle load trials, 2 Broad Gauge Bogie Open wagon, Locomotive Trials etc. conducted during the year 2019.

## G. Metro Rail Systems

RDSO is giving technical approval to various technical documents of Metro Rail Systems as Design Basis Report, Schedule of Dimension, Track Structure, Signalling and Control, Technology of Traction and Power Supply & Rolling Stock and its Maintenance Manual.

## H. Track Recording

To ensure safety of traffic periodic track monitoring of Indian Railway track, RDSO has conducted track recording of 72,738 Km up to January, 2020.

## I. Consultancy

Other than this, other Rolling Stocks like Catenary Maintenance Vehicle of Maha Metro (Nagpur project) and Diesel Shunting Loco of Mumbai Metro-1 have been given technical clearance. Through these consultancies by December 2019, during the Financial Year 2019-20, RDSO has earned ₹17.84 crores as consultancy charges, which is about ₹4.5 crores higher than the previous year.

## J. Export

### Design and Development of AC-AC 3000 HP Cape Gauge Diesel Electric locomotive for Export

M/s RITES has requested RDSO for development of 3000 HP AC - AC



Development of 8-Wheeler Diesel Electric Tower Car (8W-DETC)

traction Cape gauge diesel electric locomotive for export to Mozambique. In this regard, RDSO has prepared a specification no. MP-0.0800.115 (Rev.00) May, 2019 for this locomotive.

**K. Finite element analysis (FEA) & Dynamic simulation of modified Cape gauge locomotive bogie for export requirement of Australia**

RDSO has developed a design of CG bogie compatible with old serviceable WDM2/3A locomotives, to be supplied to Australia as per export requirements of RITES.

# Managing the Environment



World Environment Day, ECoR

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

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, 114.07 MW of solar plants (107.37 MW on Roof tops + 6.7 MW on land) have already been commissioned over IR. 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 action plan has been prepared:

- There is about 51,000 hectare of Railway land which has a potential of installing 20 GW land based solar plants.
- The Solar power so generated will be fed to CTU/STU Grid or directly to 25 kV AC traction system.
- 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 of 3 GW are being planned in 3 phases as under:-
  - **Phase- I:** 1.6 GW capacity in railway plots for Open access States under developer model.
  - **Phase- II:** 400 MW capacity in railway plots for non open access States under ownership model (captive use).
  - **Phase- III:** 1 GW capacity in railway plots along the tracks under developer model for open access States.

### a) 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.



Clean and Green RCF Township

## b) Energy Conservation

- ❖ Implementation of various energy conservation efforts is yielding fruitful results as the energy consumption 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 conservation measures has 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 Railways 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. have also been 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.

## Green Environment

Assessment and rating of IR's major Workshops and Production Units as Green Industrial units started with 'GreenCo' Certification of 2 Workshops and 1 Production Unit in 2016-17, 39 Workshops, 7 Production Units, 6 Diesel Sheds and 1 Stores Depot have been 'GreenCo' certified. 24 of these 53 units were certified in 2018-19 and 08 more in the year 2019-20.

16 Railway Station have achieved Green Certification, 7 out of these achieved Green Certification in 2018-19 and 5 more in 2019-20. 21 more Railway Buildings, Offices, Campuses and other establishments are also Green Certified including 4 Railway Schools, 2 Supervisor Training Centres (STCs), and 2 Railway Hospitals.

More than 235 Railway Stations have been certified for implementation of Environment Management System to ISO:14001 in the year 2019-20.

**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 control 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 lakhs/year on account of savings in fuel oil only. So far, APUs units have been fitted in 1,167 Diesel Locomotives. Further all the new diesel locomotives being manufactured at Marhowra plant have this system.



Solar panel installed at Howrah railway station



Bio-Toilet



Solid Waste Plant at ECR





Oxygen Park at Asansol, ER



Solar Panels at Headquarters Building, SECR



Solar panels installed at PRS Building at Danapur Station, ER

- **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. Two such 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. Another one multi-genset locomotive has been manufactured in 2019-20 and one more multi-genset locomotive is planned for manufacture in year 2020-21.
- **Bio - Diesel** - Indian Railways had started using HSD oil blended with 5% bio- diesel (B5) mixture on World Environment day i.e on 05.06.2015 at two locations Itarsi/WCR and Sanathnagar/SCR. Subsequently, 76 locations on all Zonal Railways have started using the blended oil. Use of bio-diesel results in reduction of Greenhouse Gases emissions, earning of carbon credits & saving of foreign exchange.
- **Toilet onboard 4500 HP WDG4D Diesel Electric Locomotive** - Keeping in view the inherent need for improving crew comfort, DLW has designed and manufactured a HHP Diesel Electric Freight locomotive fitted with Vacuum type toilet having microprocessor based controls and inbuilt safety interlocks onboard. It is equipped with environment friendly and self-sustaining bio-digester technology for onboard sewage treatment. First WDG4D HHP locomotive No. WDG4D-70486 fitted with vacuum based toilet and bio-digester system has been flagged off on 06th May 2016. DLW has fitted Water Closets in five Diesel locomotives.
- **Compressed Natural Gas (CNG)/ Liquid Natural Gas (LNG) Diesel electric Multiple Unit (DEMU)** - Indian Railways has already embarked on its journey to use alternate source of energy like CNG in its fleet of DEMUs. Presently, CNG DEMU rake are running in four sections viz., Rewari- Rohatak, Delhi-kurukshetra, Delhi-Samli and Farukhnagar- Garhi Harsaru- Delhi Sarai-Rohilla section of Northern Railway. A total of 100 DPCs (Diesel Power Cars) have been sanctioned for conversion to dual fuel with CNG/LNG under RSP. Work has been completed on 26 DPCs for CNG and work of conversion on two more DPCs is under progress. Further Tender for conversion of 20 nos. DPC dual fuel with CNG/LNG has been awarded. Out of these, 02 nos. kits have been received at Shakurbasti/DLI.  
  
CNG is not only cheaper fuel than diesel but is also more environment-friendly. In comparison to diesel engine, a saving in fuel cost of 6% has been realized with use of CNG engines in dual fuel mode.
- **Solar Panels**

**DEMU with Solar Power panel** - First 1600 HP DEMU rake with



solar powered Panel hotel load system was dedicated to the nation on 14th July, 2017 at Safdurjung railway station, New Delhi. Total 20 such trailer coaches are fitted by IROAF at ICF, Chennai.

Further sanction is available for provision of Solar Panels on 530 Nos. trailing Cars of DEMUs.

**a) Solar Panels on trains –**

Solar Panels have been installed on 10 Nos Exhibition Coaches of Swachhata Express.

In addition to above, flexible solar panels have also been retrofitted on 13 coaches of Sitapur- Rewari passenger.

50 nos. of Guard vans have been retrofitted with solar panel.

Further RSP sanctions are available for provision of Solar panels on 750 Nos. Guard Brake vans.

10 nos. solar panels fitted on non AC Passenger coaches of Lucknow under trial at Raebareli.

**b)** The work of retro fitment of solar panels will be done in different workshops and DEMU sheds of Indian Railways.

**Afforestation**

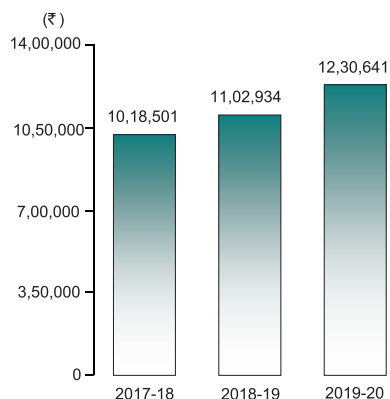
During 2019-20, Railway did mass plantation of 131.41 lakh trees. Railways have already finalized a model agreement with Ministry of Environment & Forests to be entered by Zonal Railways with State Forest Departments. Plantation will further improve in coming years. Moreover, now instructions have been 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.



Water Recycling Plant- Danapur Depot, ECR

## AVERAGE ANNUAL WAGE PER EMPLOYEE



## Personnel

### Industrial Relations

Industrial Relations on Indian Railways remained cordial throughout 2019-20. 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 31-03-2020 vis-a-vis 31-03-2019 are as follows:

Group-wise break-up	As on 31-3-2019	As on 31-3-2020
Group A	10,025*	<b>11,303</b>
Group B	6,731*	<b>7,195</b>
Group C:		
(i) Workshop & Artisan	2,76,336*	<b>1,56,037</b>
(ii) Running	1,16,545	<b>1,48,624</b>
(iii) Others	6,82,951*	<b>9,30,433</b>
Group D:		
(i) Workshop & Artisan	34,659*	<b>\$</b>
(ii) Others	1,00,468*	<b>\$</b>
Total	12,27,713*	<b>12,53,592</b>
*revised		
\$Erstwhile Group D is merged in Group C		
Department-wise break-up	As on 31-3-2019	As on 31-3-2020
Administration	36,695	<b>42,258</b>
Accounts	21,980	<b>45,246</b>
Engineering	2,92,862	<b>2,84,165</b>
Signal and Telecom	61,488	<b>53,766</b>
Transportation	1,62,418	<b>1,65,765</b>
Commercial	79,287	<b>68,072</b>
Mechanical Engineering	2,81,914	<b>2,82,482</b>
Stores	21,306	<b>24,611</b>
Electrical	1,62,557	<b>1,58,394</b>
Medical	34,471	<b>31,328</b>
R.P.F.	54,357	<b>67,074</b>
Construction	@	<b>14,310</b>
Railway Board/other railway offices, including RPSF	18,378	<b>16,121</b>
Total	12,27,713	<b>12,53,592</b>
*revised		
@ Merged in other Departments		

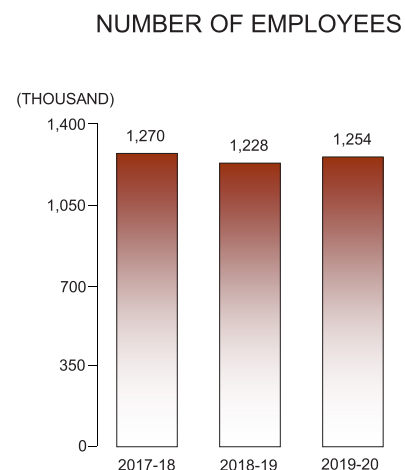


International Yoga Day, CR

## Wage Bill

Wage bill including pension etc. at ₹1,54,214.71 crore increased by ₹19,043.58 crore-registering a rise of 14.09% over the previous year. The average wage per employee was up by 11.58% from ₹11,02,934 per annum to ₹12,30,641 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 60%. The total number of personnel as on 31<sup>st</sup> March and the average annual wage per employee for the last two years are as follows:

	2018-19*	2019-20
Total number of personnel (in thousands)	1,228	<b>1,254</b>
Average annual wage per employee (in ₹)	11,02,934	<b>12,30,641</b>
*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 2019-20 as compared to the previous year is given below:

	Number of SC Employees		Number of ST Employees	
	As on 31.03.2019	As on 31-3-2020	As on 31.03.2019	As on 31-3-2020
Group A	1,462 (14.58)	<b>1,413 (12.50)</b>	748 (7.46)	<b>736 (6.51)</b>
Group B	1,262 (18.75)	<b>1,236 (17.18)</b>	543 (8.07)	<b>558 (7.76)</b>
Group C #	2,04,939 (16.92)	<b>2,03,931 (16.51)</b>	95,918 (7.92)	<b>96,621 (7.82)</b>
Grand Total	2,07,663 (16.91)	<b>2,06,580 (16.48)</b>	97,209 (7.92)	<b>97,915 (7.81)</b>
# Including erstwhile Group 'D'				
Note: Figures mentioned in brackets indicate the percentage of SCs/STs to total number of employees.				

A fully dedicated reservation cell exists each at the level of Ministry/ Railway/Zones/ Divisions/Workshops/Production Units, for dealing with the reservation matters.

## Railway Recruitment Boards:

During 2019-20, panels of 76,581 candidates have been supplied to the Indenting Railway(s)/Production Unit(s) by 21 RRBs across India

## Productivity Linked Bonus

For the financial year 2019-20, 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 11,58,205 Railway employees. Further, Group 'C' & 'D' RPF/RPSF Personnel have been sanctioned ad-hoc-bonus equivalent to 30 (thirty) days emoluments for the year 2019-20. 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 ₹2,081.68 crore and ₹43.58 crore respectively.



Outstanding sports infrastructure, RCF



*New Railway Hospital building at Perambur, Southern Railway*

## **Human Resource Development and Manpower Planning: Training**

Indian Railways have Training Centres for Gazetted and Non-Gazetted Staff. These Training Centres located all over Indian Railways impart various types of training 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 of new developments in technology) and Specialized training (for Specialized courses). During 2019-20, around 4,24,000 non-gazetted employees have been provided these training.

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 stress 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 sent for foreign trainings under transfer of technology and are also provided inputs through leading training institutes within India.
- d) In view of the success and positive outcome of "Project Saksham, 2018", "Project Saksham-II, 2019" was launched w.e.f. 01.04.2019. This was a five day on the job training at workplace or as classroom training in Railway Training Center depending on the nature of training. Around 11,68,000 employees have been trained under Project Saksham-II.

## Apprenticeship Training

Apprenticeship training is one of the most effective ways to develop skilled manpower for industry by using training facilities available in the 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 has 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, Personnel, Signal & Tele and Finance were reviewed, updated & uploaded on Railway's website, after converting them into online mode.

## Online Training

The training material for different categories of staff have 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 their remote place of posting. Most of the trainings are now being conducted in online/blended mode.

## Indian Railway Medical Service

From a humble beginning in 1853, Indian Railway Medical Service has taken great strides to become a modern well organized three tier Comprehensive Health Care System.

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

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.

With a sanctioned strength of 2592 Medical Officers it is the largest industrial health service in the world. It is running 24x7 round the year, 128 hospitals & 586 health units spread throughout the length & breadth of country. Indian Railway Medical service also employs 41,000 paramedical staff for the 13,639 indoor beds. It attends to roughly 67 lakhs beneficiaries.



*'Pradeep'- Rail Mobile Medical Van of Sealdah Division, ER*



A number of Zonal Railway hospitals are recognized centers of excellence in the field of medical care where post graduate medical students are also trained. Railway Medical Officers are regular contributors to international journals & conferences in the field of Medical Science.

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 for non-railway patients.

COVID-19 patients are also being treated in the Railway identified hospitals including the CGHS beneficiaries.

Nine 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. Many of IR's senior doctors are examiners for Diplomate of National Board (DNB). Every year, IR's institutes are producing post graduate specialist and super specialist doctors who ultimately are the assets for the nation.

### **Services Provided by Health Directorate**

Before independence, there were forty two Railway systems, each following a separate health policy. Post-independence it was integrated into one dedicated Indian Railway Health Service erstwhile (IRMS), providing modern allopathic treatment. Today IRHS is providing comprehensive health care to nearly 1 crore beneficiaries, using the latest technology, treatment protocol, implants, surgical techniques, medicine etc. which is at par with any world class health service provider.

Healthy workforce is the most important asset of any organization. Keeping the same in view apart from periodic medical examination (PME), annual health check-up of all Railway employees is being ensured by IRHS. There are a host of other activities carried out by IRHS, in addition to preventive, promotive and curative care; like first aid to travelling passengers, attending accidents, colony sanitation, implementation of Food Safety Standards Act (FSSA), various National Health programmes and providing post- graduation training & study program.

### **A. Performance Statistics (January 2019 – December 2019)**

No of Hospitals / Indoor Beds	128 /13,639
No of health Units	586
No of Doctors / Paramedical staffs and other staff	2,592 / 41,000
Approximate no of total beneficiaries	1 crore
Total OPD Cases attended	2,03,99,566
Total Indoor cases admitted	5,26,273
Total no. of Surgeries performed	1,79,235
Percentage of man days lost due to sickness	1.29
No. of New Candidates examined for fitness	1,70,599
No. of employee examined under Periodical medical Examination (PME)	1,20,211
No. of food samples collected/ found faulty	3,670/137

Water sample for residual chlorine tested/fit	12,00,389/10,67,531
Water sample for bacteriological tested/fit	82,691/774,36
No. of Sick Passengers attended by Railway Doctors	67,231
No. of Children immunized	12,881
No. of multipurpose health drives conducted	26,030
Total no. of persons examined in the multipurpose health drives above	97,2446

### **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 40.34% staff have been provided with railway quarters, as on 31.03.20. In total, 2,150 staff quarter were electrified during 2019-20.

Co-operative societies of various types are functioning on Indian Railways. These Cooperative Societies are registered under the Multi-State Cooperative Societies Act, 2002 and are under overall supervision of the Central Registrar of Cooperative Societies, Department of Agriculture & Cooperation., Krishi Bhawan, New Delhi There are 46 Thrift and Credit Societies, 136 Railway-men's Consumer Cooperative Societies, 25 Labour Cooperative Societies and 4 Railway-men's Housing Societies functioning on Indian Railways during 2019-20.

IR attaches due importance to recreation for its employees and provide excellent facilities through Institutes/Clubs for sports, libraries, etc. as also Holiday Homes to enable the employees and their families to enjoy vacations at nominal expenses.

### **Pension Adalats**

In accordance with the directives of Department of Pension & Pensioners' Welfare (DOP&PW), instructions were issued to Zonal Railways & Production Units to conduct Pension Adalats on 23.08.2019 to examine and settle the grievances of pensioners. Every effort is made to settle these cases on the spot. A no. of 4418 cases were taken up in the All India Pension Adalat held on 23.08.2019.

### **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 99 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 2019-20**

#### **I At International Level**

1. In the AWF Senior Asian Weightlifting Championship held at Ningbo, China from 17<sup>th</sup> to 29<sup>th</sup> April, 2019, Indian Railways Sportsperson won Silver Medal.
2. In the 23<sup>rd</sup> Asian Athletics Championship held at Doha (Qatar) from 21<sup>st</sup> to 24<sup>th</sup> April, 2019, one Gold Medal, 2 Silver and 1 Bronze Medal were won by Railway Sportspersons.
3. In the Asian Wrestling Championship held at Xian (China) from 23<sup>rd</sup> to 28<sup>th</sup> April, 2019, Railway Sportspersons won 1 Gold, 2 Silver and 5 Bronze Medals.
4. Indian Railway Tennis team won Gold Medal in the 21<sup>st</sup> USIC (World Railway) Tennis Championship held at Albena (Bulgaria) from 28<sup>th</sup> May to 3<sup>rd</sup> June, 2019.
5. Raiwlay Sportsperson won Bronze Medal in the 8<sup>th</sup> Senior Asian Gymnastic Championship held at Ulaanbaatar (Magnolia) from 19<sup>th</sup> to 22<sup>nd</sup> June, 2019.
6. Indian Railway Cueist player represented India in the ACBS 8<sup>th</sup> Asian 6 Red Snooker Championship 2019 held at Doha (Qatar) from 22<sup>nd</sup> to 26<sup>th</sup> June, 2019 and won Bronze Medal in the said Championship.
7. Indian Railways Chess player won Bronze Medal in the Commonwealth Chess Championship held at Delhi from 30<sup>th</sup> June to 7<sup>th</sup> July, 2019.
8. Indian Railway Weightlifters won 4 Gold Medals and 2 Silver Medals in the Commonwealth Senior (Men & Women) Championships held at Apia (Samoa) from 6<sup>th</sup> to 14<sup>th</sup> July, 2019.
9. Indian Railway Volleyball (Men) team won Gold Medal in the 17<sup>th</sup> USIC (World Railway) Volleyball Championship held at Albena Bulgaria from 24<sup>th</sup> to 29<sup>th</sup> August, 2019.
10. Indian Railway Athletics (Men & Women) teams won the 17<sup>th</sup> USIC Men and 14<sup>th</sup> USIC Women (World Railway) Athletics team Championships held at Trutnov, Czech Republic from 10<sup>th</sup> to 13<sup>th</sup> September, 2019.
11. Indian Railway Snooker player partidcipated in IBSF World Six Red and World Team Snooker Championship held at Mandalay (Myammar) from 16<sup>th</sup> to 25<sup>th</sup> September, 2019 and Won Bronze Medal in the team Event.

12. Indian Railway Football (Men) team won fair play trophy in the 21<sup>st</sup> USIC (World Railway) Football Championship held at Saint Mandrior (France) from 6<sup>th</sup> to 12<sup>th</sup> October, 2019.
13. Indian Railway Body Building Players won 2 Gold Medals and 1 Bronze Medal in the Asian Championship held at Indonesia from 27<sup>th</sup> September to 3<sup>rd</sup> October, 2019.
14. Indian Railway Chess Player won Gold Medal in the 1<sup>st</sup> World Individual Rapid and Blitz Chess Championship held at Torre Vieja, Spain from 21<sup>st</sup> to 25<sup>th</sup> November, 2019.

## **II At National Level :-**

During 1<sup>st</sup> April, 2019 to 31<sup>st</sup> March, 2020, Indian Railways participated in total 46 National Championships, out of which IR was semi-finalist in 03 Championships, 3<sup>rd</sup> Position in again 03 Championships, Runners-up in 11 Championships and Winners in 18 Championships.

## **III Following Railway players have been honored with National Sports Awards during 2019-20:-**

<b>S. No.</b>	<b>Name</b>	<b>Game</b>	<b>Award</b>	<b>Railway</b>
i.	Sh. S. Bhaskaran	Body Building	Arjuna Award	Southern Railway
ii.	Ms. Sonia Lather	Boxing	Arjuna Award	North Western Railway
iii.	Sh. Chinglensena Singh	Hockey	Arjuna Award	Western Railway
iv.	Ms. Poonam Yadav	Cricket	Arjuna Award	North Central Railway
v.	Sh. Nitten Kirrtane	Tennis	Dhyanchand Award	Central Railway
vi.	Sh. Bajrang	Wrestling	Rajeev Gandhi Khel Ratna	Northern Railway
vii.	Sh. Bajrang	Wrestling	Padma Shree	Northern Railway
viii.	Ms. L. Bombayla Dev	Archery	Padma Shree	Eastern Railway

## Welfare, Development and Empowerment of Women



*Railway women corona warrior, CR*

IR is the largest civil employer in the country with 12,53,592 employees of which 99,240 are women employees as on March 31, 2020. 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 Organizations' 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.

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



*View of a baby feeding centre at a railway station*



*Women Engine Drivers in Railways*



## 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.
- Specially designed coaches known as SLRD coaches with wider entrance doors to allow a wheel chair to enter, wider aisles and modified toilet with 4 berths, the lower two berths for Divyangjan and upper berths for attendants have been attached in almost all Mail/Express trains except Rajdhani, Shatabdi, Jan Shatabdi Express and Durgam Express trains.
- Instructions have been issued that in all Mail/Express trains, the SLRD coaches should be treated as unreserved coaches earmarked for exclusive use of Divyangjan. In case of Garib Rath Express trains which are fully reserved trains, these 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 to various Passenger Reservation System (PRS) centers for dealing with the reservation requisitions received from Divyangjan, Female Passengers, Senior Citizens, Ex. M.Ps, MLAs,



*FOB with Ramp and Escalator at Sambalpur Railway Station, ECR*



*Braille Information Boards installed at Coimbatore Junction, SR*



Tactile map for Divyang at Uslapur Station, SECR

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.	<ul style="list-style-type: none"> <li>75% in 2nd, SL, Ist Class, 3 AC, AC Chair Car..</li> <li>50% in Ist AC and 2AC.</li> </ul>
2	Mentally retarded persons who cannot travel without escort – for any purpose. However, can book ticket with or without escort.	<ul style="list-style-type: none"> <li>25% in 3AC and AC Chair Car of Rajdhani/Shatabdi trains</li> <li>50% in MST* and QST**.</li> </ul>
3	Persons with visual impairment with total absence of sight travelling alone or with an escort for any purpose.	<ul style="list-style-type: none"> <li>One escort is also eligible for same element of concession.</li> </ul>
4	Persons with hearing and speech impairment totally (both afflictions together in the same person), travelling alone or with an escort – for any purpose.	<ul style="list-style-type: none"> <li>50% in 2nd, SL and Ist Class</li> <li>50% in MST and QST.</li> <li>One escort is also eligible for same element of concession.</li> </ul>

\*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. 184 Battery Operated Vehicles (BOVs) are already provided at 82 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.
- Regular drives are conducted by RPF against persons travelling unauthorisedly in compartments reserved for Divyangjans. During the year 2019-20, total 1,63,619 cases were registered with arrest of 17,738 such offenders and realization of fine of ₹4.10 crore. On the “International Day of Divyangjan” on 03.12.2019, a Special drive

against persons travelling in Coaches/Seats reserved for Divyangjan on 'All India' basis was conducted. Proper videography/photography was done by RPF during the drive with the registration of 4,788 no. of cases against offenders. During the drive 5,674 persons were arrested under Section 155 of the Railways Act for unauthorisedly travelling in coaches reserved for Divyangjan, with realization of fine of ₹5.33 lac.

- 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.
- Security Helpline "182" has been made functional round the clock through 'Divisional Security Control Rooms' of RPF over entire network of Indian Railways to provide security related assistance to all passengers including Divyangjan.



*Specially designed toilet for Divyangjan on Indian Railways*

## Special Coach Design

Around 3,382 Disabled friendly ICF design coaches SLRD(Second Class cum Luggage cum Guard Van & Disabled Friendly Compartment) are available in the fleet of Indian Railways. These coaches have a suitably designed compartment & toilet adapted to the needs of the disabled/wheel chairs borne 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.

Further, Production Units have already started manufacturing LHB type coaches for Divyang Passenger on similar lines as in ICF design coaches, which are inducted in IR progressively. 08 such coaches manufactured in the year 2018-19 and 20 such coaches have been manufactured in the year 2019-20. At present, 90 LHB type LSLRD/LDSLRL are functional over Indian Railways and further proliferation of LSLRD with augmentation in production plan has been planned.

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 manufactured coaches. This will ensure improved accessibility to Divyangjan passengers insides coaches.

For assistance of the visually impaired travelers, integrated Braille Signages, i.e. signages superimposed with Braille scripts, are being provided in all the newly manufactured coaches. Further, retrofitment of the same in existing coaches is also under progress in a phased manner.

## Amenities at Railway Stations

Indian Railways is committed to make its stations and trains accessible for Divyangjan as a 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. Recently in



*Low Height Disabled friendly W/C with Hand Rails, ER*

February, 2020 the Harmonized guidelines and standards of accessibility & provisioning of facilities for Divyangjan in Railway System has been circulated for implementation over Indian Railways as composed in 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 Circulation)**

- 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. Consequent upon Government's decision to unify eight organized services of Indian Railways and introduce Indian Railways Management Services w.e.f the year 2021, direct recruitment will be done through Civil Services Examination. The modalities will be finalized in consultation with Committee of Secretaries and with the approval of Alternate Mechanism which has since been constituted by the Government.





RPF's monitoring cell at Howrah station, ER

## 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.

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' level for collection of special and criminal intelligence respectively. Besides above, Stores, Dog Squad and Band are other specialized units of the Force located at Divisional, Battalion and Zonal levels, as per requirements of the Force.

On 14.08.2019, the first Commando force for Railways- CORAS (Commandos for Railway Security) - was inducted. 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.

Registration of FIRs, their investigation and maintenance of law & order in Railway Station premises as well as in running trains are the statutory responsibility of State Governments, which they discharge through the respective Government Railway Police (GRP). RPF supplements the efforts of the GRPs of different States by deploying its staff for strengthening of security over Railways. 50% of the expenditure on GRPs is shared by the Railways with respective states.

### Round the clock security related assistance to passengers by RPF

- **All India Security Help-Line-** A 24x7 security helpline has been

made functional through Security Control Rooms of RPF to provide round the clock security related assistance to passengers. This Helpline is functioning through a three digit no. 182. Security helpline system has been upgraded to include features like automated phone call distribution system, auto generated SMS, computerized registration of complaints, voice recording, dashboard and its integration with a dedicated App.

- **Twitter-** Complaints/suggestions, relating to Security, received through MR Twitter handle @RailMinIndia, are swiftly attended and necessary follow-up action is initiated.



*Train escorting by RPF at Rourkela station*

### **Details of complaints attended over Twitter and Security Helpline No. 182:**

Year	No. of complaints attended on Twitter	No. of complaints attended on Help Line No. 182
2018	30,894	48,712
2019	35,092	73,795
<b>2020 (upto Aug)</b>	<b>4,418</b>	<b>86,078</b>

- **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 and the Ministry of Women and Child Development (MoWCD). Under the SOP, Railways have provided space for setting up of Child Help Desk/Kiosk (CHD) at the nominated stations. The scheme has been implemented at 88 Railway stations.

### **Details of children rescued by RPF in the year 2018, 2019 & 2020 (upto August):**

Year	No. of children rescued by RPF
2018	17,479
2019	16,294
<b>2020 (Upto August)</b>	<b>3,641</b>

- **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 627 Railway stations. Similarly, CCTV cameras have been provided in about 2,688 coaches.

### **Measures initiated by RPF for security of passengers and passenger area**

- Escorting of major trains by RPF/ GRP personnel.
- Access control at important Railway stations.
- Implementation of Station Security Plan over identified Railway stations.



CCTV surveillance as part of Integrated Security system (ISS) at Stations

- Keeping vigil at station platforms, yards and circulating areas and surveillance through CCTV cameras, provided at 627 Railway stations over Indian Railways.
- 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.
- Liaison/Coordination has been maintained with GRP/State Police/ Central Intelligence Agencies to strengthen Railway security.

### **Women security**

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

- i) Special Lady Squads like 'Bhairvi', 'Virangana', and 'Shakti' have been formed by Northern, Central and North Central Railways respectively to ensure safety & security of women passengers.
- ii) All 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.
- 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) "Meri Saheli" initiative aimed at focused attention on women passengers' security has been implemented on a pilot basis over Indian Railways.

### **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 2018, 2019 & 2020 (upto Aug) is as under:

Year	No. of cases detected under the RP (UP) Act	Value of property recovered (₹in crore)	No. of persons arrested
2018	4,569	3.28	6,820
2019	3,501	3.86	6,782
<b>2020 (upto August)</b>	<b>1,472</b>	<b>3.51</b>	<b>3,347</b>



*Distribution of food packets by RPF, SER*

### Setting-up of Cyber Cells :

Cyber cells are being commissioned over all zonal railways to enhance the cyber investigative skills of RPF. Staff are being trained to be able to tackle cyber crime effectively. Coordination is also maintained with cyber coordination centre, Ministry of Home Affairs and other units to curb cyber crime.

### Action against touts :

Intensive drives were launched by RPF against toutting activities and use of illegal softwares used by touts to confirm bulk tickets. Technological surveillance and use of PRS data led to identification of suspects who used to confirm berths under Tatkal Quota & General Quota within a few seconds at the at online booking window.

The first success came on 02.12.2019 when RPF arrested developers of illegal softwares 'I-Ball' & 'Red Bull' from UP, thereby causing these softwares to crash. Due to effective action by RPF, several illegal softwares like ANMS, MAC, N-GET, Cycle, Star-V2, Jaguar etc. stopped functioning.

In the nationwide action against illegal softwares by RPF, about 207 persons have been arrested so far and future journey tickets purchased through these softwares worth crores of rupees were got blocked.

Several cases have been registered across Indian Railways against toutting activities and use of these illegal softwares. Ministry of Railways has handed over cases registered by RPF to CBI so that deterrent action is taken against touts. Efforts are continuously being made by RPF to curb toutting activities so that journey tickets may be easily available to common passengers.

### Recruitment:

For the purpose of filling up of the vacancies of Constables & Sub Inspectors in executive category, Constable (Ancilliary) & Constable (Band) in RPF & RPSF, general recruitment drives were launched in the year 2018. In all, 1,121 Sub Inspector, 8,543 Constables (Executive) & 796 Constables (Ancilliary) have been empanelled in RPF & RPSF.

For better safety and security of women passengers, more and more women are being recruited in RPF. During the aforesaid recruitment drives, total 298 & 4,078 women personnel have been empanelled for the post

of Sub- Inspector and Constable respectively. Similarly, total 46 women personnel have been empanelled for the post of Sub-Inspector and Constable respectively. Similarly, total 46 women personnel have been empanelled for the post of Constable (Ancillary). After the current recruitments the percentage of women in RPF shall increase significantly from about 3% to 9% of the total sanctioned strength of RPF.

### **Training:**

At present 13 RPF Training Centers, including one Centralized Training Institute (CTI), are catering to the training needs of RPF personnel. Initial as well as on the job refresher courses are conducted for RPF personnel to enhance capability and skill development. Training curriculum includes Outdoor drill, PT, Parade, weapons training, field craft, etc. and indoor training includes Law, Railway working, Passenger interface, Soft skill, Yoga, Gender sensitization, Human-rights, computer applications etc. Specialized training/courses are also conducted for RPF Officers and staff at training institutes of other CPOs, CBI etc. RPF personnel are also undergoing training as per the training schedule chalked out by BPR&D for Police/ Central Armed Police Forces.

### **Commando Training:**

All the directly inducted Sub Inspectors and Constables are scheduled to undergo 30 days' Commando Training. A proposal for setting up of Commando training centre at 9 BN/ RPSF/ Jagadhri is under process.

### **Meritorious Service:**

During the years 2018 & 2019, 05 RPF/RPSF personnel have been awarded President's Police Medal for Distinguished Service and 60 RPF/RPSF personnel have been awarded Police Medal for Meritorious Service. 03 RPF personnel have awarded Uttam Jeevan Raksha Padak in the years 2018 & 2019 for life saving acts. Late Shri Jagbir Singh Rana, Constable/ Northern Railway was awarded Sarvottam Jeevan Raksha Padak (2019) and Police Medal for Gallantry on the occasion of Republic Day, 2020.

RPF is toiling 24x7 to secure the Indian Railways in every possible manner so as to ensure smooth movement of freight and passenger traffic. The efforts of the Force are well coordinated with the sister departments of Railways, Government Railway Police/District Police and the civil administration. Our collective endeavor is to serve the Railway passengers and the Nation in consonance with our motto "Yasho Labhasva".



# 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 during the year 2019-20 were:

- ❖ In 2019-20, a total of 17,541 preventive checks were conducted throughout the Railways.
- ❖ In 2019-20, a total of 27 Vigilance Bulletins, including “Chetna Aahwan” by the Railway Board, were released for circulation. These Bulletins contain case studies, dos & don’t etc. related to various Railway departments.
- ❖ Print and electronic media was extensively utilized by all Zonal Railways, Production Units and Public Sector for conducting extensive public campaigns during Vigilance Awareness Week, 2019.

## (2) Participative Vigilance

- (a) **24 Hours Vigilance Helpline:** 24 hour vigilance helpline (Helpline No.155210) 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 28<sup>th</sup> October and 02<sup>nd</sup> November in the year 2019.
- (c) **Counselling:** As many as around 250 Workshops/seminars/interactive sessions were conducted on topical issues by Vigilance in 2019-20 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.

In the training programme that is conducted annually for Vigilance Inspectors and Investigating Inspectors at the Diesel Loco Shed/Tughlakabad,

a total of 85 personnel participated in two schedules from 19<sup>th</sup>-23<sup>rd</sup> August, 2019 and 26<sup>th</sup>-30<sup>th</sup> August, 2019.

### (3) Punitive Vigilance

A statement showing number of officials against whom disciplinary action in vigilance-investigated cases was initiated/finalized during April 2019 to March 2020 is given below:

<b>Vigilance investigated cases</b>	<b>2019-20</b>
Number of officials against whom disciplinary proceedings were initiated.	<b>4,704</b>
Number of officials against whom disciplinary proceedings resulted in imposition of major penalty	<b>1,106</b>
Number of officials against whom disciplinary proceedings resulted in imposition of minor penalty	<b>4,104</b>

### (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 2019, these measures resulted in realization of revenues to the tune of ₹263.11 crore.

(b) **Scrutinizing** of more than 2,968 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 31<sup>st</sup> March, 2020 the total number of notified Railway offices is 3,588. 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 there. In the year 2019-20, a total number of 1,054 inspections have been carried out by these officers and the second Sub-Committee of Parliamentary Committee on Official Language has inspected 07 Railway offices and has appreciated the use of Hindi in these offices. In addition to this, Grih-Patrika 'Rail Rajbhasha' in Hindi is also published by Railway Board Office. Till now, 124 editions of the patrika have been published and circulated to all the Railway offices. 'E-Rajbhasha' web magazine is also being brought out regularly in every quarter. Till now, 28 editions of this patrika have been brought out. About 89 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 2019-20 as compared to 2018-19 as follows:

Activity	As on March 31, 2019	As on March 31, 2020
Working knowledge/ Proficient in Hindi	8,87,806	<b>8,62,446</b>
Hindi Typing	7,414	<b>7,942</b>
Hindi Stenography	3,065	<b>3,112</b>

### Other activities

The existing policy of purchasing bilingual electronic equipments, like computers etc. is being followed. During 2019-20, 42,994 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 6,592 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, about 17 lac books in Hindi are available in 967

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 functioning on the Zonal Railways, in Production Units etc and meetings of these committees are being organized regularly. Besides this, Railway Board Official Language Implementation Committee has been constituted at Railway Board level also and its meetings were conducted regularly in the year 2019.

### **Railway Hindi Salahakar Samiti**

In order to propagate the use of Hindi in Ministry of Railways and Zonal Railways, Railway Hindi Salahakar Samiti was 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 Individual Cash Awards Scheme, Railway Minister Rajbhasha Shield/Trophy Scheme, Lal Bahadur Shastri Takniki Molik Lekhen Scheme, Premchand and Maithili Sharan Gupt Award Scheme, Rail Yatra Vritant Scheme, Hindi Essay competition and other schemes for Elocution, Noting and Drafting in Hindi. In the year 2019, Director General National Academy of Indian Railways, Vadodara was awarded 'Kamlapati Tripathi Rajbhasha Swarn Padak' and 30 Silver Medals under 'Rail Mantri Rajbhasha Rajat Padak' were given to officers working in Zonal Railways including Railway Board for the outstanding work in Hindi on the occasion of Railway Board Official Language Implementation Committee's Meeting held on 16.09.2019 under the chairmanship of Member Staff, Railway Board.

On the occasion of Munshi Prem Chand and Acharya Shiv Pujan Sahay's birth anniversary "Hindi Prashanmmanch" was organised in Rail Bhawan on 01.08.2019. Besides this, Rajbhasha Exhibition of literary work of Munshi Prem Chand and Acharya Shiv Pujan Sahay was also organised.

Hindi Essay, Elocution, Noting and Drafting competitions were organised on 8<sup>th</sup> and 9<sup>th</sup> August, 2019 at the all Indian level in N.F. Railway, Maligaon, Guwahati.

In order to promote usage of Hindi 'Rajbhasha Pakhwara' was organised from 09<sup>th</sup> to 20<sup>th</sup> September, 2019 in the Ministry of Railways. During this period, Hindi Essay Writing, Elocution, Noting and Drafting competitions, Antakshari, Hindi Workshop and Kavi Sammelan were organised. On the occasion of Hindi Diwas on 14<sup>th</sup> September, 2019, a message from Hon'ble Minister of Railways was circulated to all the offices of Indian Railway to work in Hindi.

On the occasion of the meeting of Railway Board Official Language Implementation committee held on 19.12.2019, the certificates were given to winners by the Chairman, Railway Board under Individual Cash Award

Scheme, Lal Bahadur Shastri Takniki Molik Lekhen Scheme and Rail Yatra Vritant Scheme.

During the year 2019-20, total 707 Workshops on different subjects were also organised on all Zonal Railways including Railway Board, in which 15,205 officers/employees were participated.

‘Akhil Rail Hindi Natyotsava’ was successfully organised at East-Coast Railway, Bhubaneswar from 08<sup>th</sup> to 10<sup>th</sup> January, 2020, in which 19 teams participated and won many prizes.

Hindi translation of commonly used sentences in Railway Board’s office were uploaded on the website of the Ministry of Railways and the link (URL) was made available to the Department of Official Language, Ministry of Home Affairs.



## North Eastern Region

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, 19 Railway projects (13 New Lines and 6 Doubling), costing ₹75,579 crore for 2,008 km length, falling fully/partly in Assam and North Eastern Region are under different stages of planning/approval/execution.

The brief positions of the ongoing projects are as under:-

S. No.	Project	Length (in km)	Latest Anticipated Cost (₹ in crore)	Expenditure upto March, 2020 (₹ in crore)	Outlay for 2020-21 (₹ in crore)
<b>New Line</b>					
1	New Maynaguri-Jogighopa New Line with Gauge conversion of new Mal-Moynaguri Road and New Changrabandha-Changrabandha	285	4,100	3,462	100
2	Jiribam-Imphal	111	12,264	10,089	800
3	Dimapur (Dhansiri)-Kohima (Zubza)	82	6,986	963	300
4	Tetelia-Byrnihat	22	1,348	727	100
5	Bhairabi-Sairang	51	5,021	3,608	475
6	Sivok-Rangpo	44	4,086	682	607
7	Byrnihat-Shillong	108	6,001	267	0.0001
8	Murkongselek-Pasighat	27	661	141	200
9	Agartala (India) – Akhaura (Bangladesh)	5.46	580	218	100
10	Dimapur-Tizit#	257	4,274	0	0.0001
11	Salona-Khumtai#	99	5,958	0	0.0001
12	Sibsagar-Jorhat#	62	2,696	0	0.0001
13	Tezpur-Silghat#	25	3,582	0	0.0001



Trains passing through lush green terrain of NE region

### Doubling

1	New Bongaigaon-Kamakhya via Rangiya	143	2,043	1	200
2	New Bongaigaon - Kamakhya via Goalpara-	176	2,232	1,056	450
3	Digar-Hojai	102	2,136	804	400

4	Saraighat Bridge (doubling)#	7	1,677	0	1
5	Kamakhya-New Guwahati Quadrupling#	21	6,124	0	1
6	Lumding-Tinsukia Jn. Doubling#	381	3,810	0	0.0001

# Project included in Railway Budget subject to requisite Government approvals.

The detailed positions of the ongoing projects are as under:-

## NEW LINES

### 1. Bhairabi-Sairang

Length	51 km
Anticipated Cost	₹5,021 crore
Expenditure upto 31.03.2020	₹3,608 crore
Outlay 2020-21	₹475 crore

**Status:** Work on entire project has been taken up.

### 2. Agartala (India) - Akhaura (Bangladesh)

Length	12.3 km (5.5 km in India + 6.8 km in Bangladesh)
Anticipated Cost	₹580 crore (Indian portion)
Expenditure upto 31.03.2020	₹218 crore
Outlay 2020-21	₹100 crore

**Status:** Entire land has been acquired. Works have been taken up on this project.

### 3. Byrnihat-Shillong

Length	108 km
Anticipated Cost	₹6,001 crore
Expenditure upto 31.03.2020	₹267 crore
Outlay 2020-21	₹1,000

**Status:** Khasi Hills Development Autonomous Council (KHDAC) has to issue NOC for land to be acquired. There is acute Law and Order problem created by Khasi Students Union (KSU) which is not supporting the Railway line coming into Meghalaya with the apprehension that it will increase the influx of outsiders. Final Location Survey has not been allowed (by local people) to be conducted in around 5 km length and also not allowing land acquisition to fix center line pillars in alignment. All activities including land acquisition is held up on this account.

### 4. Dimapur (Dhansiri) - Kohima (Zubza)

Length	82 km
Anticipated Cost	₹6,986 crore
Expenditure upto 31.03.2020	₹963 crore
Outlay 2020-21	₹300 crore

**Status:** Work has been taken up on this project.



Beautiful sight of 100m tall Rail Bridge over Makru River in Manipur



Compact Automatic Bottle Flaking Machine, NFR

## 5. Jiribam-Imphal

Length	111 km
Anticipated Cost	₹12,264 crore
Expenditure upto 31.03.2020	₹10,089 crore
Outlay 2020-21	₹800 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 31.03.2020	₹682 crore
Outlay 2020-21	₹607 crore

**Status:** Work has been taken up on this project.

## 7. Tetelia-Byrnihat

Length	22 km
Anticipated Cost	₹1,348 crore
Expenditure upto 31.03.2020	₹727 crore
Outlay 2020-21	₹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	₹661 crore
Expenditure upto 31.03.2020	₹141 crore
Outlay 2020-21	₹200 crore

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

## 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	₹4,100 crore
Expenditure upto 31.03.2020	₹3,462 crore
Outlay 2020-21	₹100 crore

**Status:**

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

## 10. Dimapur-Tizit

Length	257 km
Anticipated Cost	₹4,274 crore
Outlay 2020-21	₹1,000

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



*Solar powered Rolling In/Out huts, NFR*

## 11. Salona-Khumtai

Length	99 km
Anticipated Cost	₹5,958 crore
Outlay 2020-21	₹1,000

**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 2020-21	₹1,000

**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 2020-21	₹1,000

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

## DOUBLING

### 1. New Bongaigaon-Kamakhya via Rangiya

Length	143 km
Anticipated Cost	₹2,043 crore
Expenditure upto 31.03.2020	₹1 crore
Outlay 2020-21	₹200 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	₹2,232 crore
Expenditure upto 31.03.2020	₹1,056 crore
Outlay 2020-21	₹450 crore

### Status:

8.55 km section commissioned. Work taken up in remaining section 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	₹2,136 crore
Expenditure upto 31.03.2020	₹804 crore
Outlay 2020-21	₹400 crore

### Status:

**Phase-I: Digaru - Jagiroad (23.52 Km):** Section completed and commissioned in October, 2020. Earthwork, minor bridges and major bridges work taken up in remaining length.

## 4. Kamakhya – New Guwahati Quadrupling

Length	21 km
Anticipated Cost	₹6,124 crore
Expenditure upto 31.03.2020	₹0 crore
Outlay 2020-21	₹1 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	₹1677 crore
Expenditure upto 31.03.2020	₹0 crore
Outlay 2020-21	₹1 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 31.03.2020	₹0 crore
Outlay 2020-21	₹1,000

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



### **Passenger Service Improvement**

02 New train (in single) services were introduced on N.E. Region, during the year 2019-20.

### **Computerised passenger Reservation System (N.E. Region)**

The facility of computerised Passenger Reservation System (PRS) is available at about 130 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).

## 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 2019-20, Public Relations Directorate of Railway Board played an important role in building both the corporate and social image of Indian Railways. Positive information regarding cleanliness, various initiatives taken by Railways in projects related to the facilitation of rail users was disseminated and informative display advertisements on topics like manned level crossings, inauguration of Vande-Bharat Express, Tejas Express, Mahakal Express, etc. were published in various newspapers.

Various short films were produced on various topics like 'Ekta Diwas, e-Drishti, Rail Drishti, Ek Bharat Shrestha Bharat, National Rail & Transportation Institute (vadodara), Rail Madad App, etc.

Social Media Handles of Ministry 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 46 lac in Twitter (@RailMinIndia), around 16 lac likes on Facebook page (@RailMinIndia), around 3.44 lac subscribers of YouTube Channel @RailMinIndia indicate as one of the best performing Ministries under Government 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 social and educational themes including safety at Railway level crossings, roof-top travelling, trespassing the Railway track, security, prevention of fire, etc. About 23,160 press releases were released; 351 press conferences were organized; 7,387 publicity brochures were brought out. About 1,751 Radio/TV Spots were produced and about 1,083 Radio/TV spots were broadcast/ telecast by the Railways on different radio/TV channels by all the Zonal Railways. About 38 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 98 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.

### **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, 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 innovative Ideas schemes etc., PRS/UTS tickets and reservation chart/forms are also utilized for commercial publicity.

# 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 9<sup>th</sup> October 1949. Since then Territorial Army Raising Day is celebrated on 9<sup>th</sup> 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 organisation 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 Railway
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 and North Western Railway
1105 Railway Engineer Regiment	Secunderabad	South Central Railway	Eastern Command	South Central, South Western and Southern Railway

## Strength of Regiments

A Railway TA Regiment's sanctioned strength consists of (i) 23 Officers, 46 Junior Commissioned Officers (JCOs) and 1081 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 2019-20, an expenditure of approx. ₹14.28 crore (Rupees Fourteen crore twenty eight 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 duly conducted for the Railway TA personnel of the six Railway TA Regiments during 2019-20.

## Incentives/Cash awards etc. admissible to TA Personnel

- Extra two sets of passes for shifting family.
- Special casual leave of 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 allowances at double rate.
- (f) Payment of average Running Allowance & Night duty allowance.
- (g) Free Ration/Clothing during ATC.
- (h) Cash Award on joining TA and on completion of 9 year, 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 participations/performance during these TA events.

### **Operational Exercises**

The present six (6) Railways TA Regiments have been allotted specific operational tasks 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 tasks 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 2012–2020 to rehearse their role to maintain rail communication during active hostilities and peacetime emergencies.

### **CRB trophy & 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. However, the award money has recently been enhanced further to ₹2,00,000/-. It has also been decided to club the CRB Trophy presentation ceremony with "Railway Week National Award Function".

### **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 satisfaction 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

## 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	BITES	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	1999	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	2006	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.

## **Rail India Technical and Economic Services Limited (RITES)**

RITES Ltd, a Miniratna (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 in India 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, other than Thailand, Malaysia, and Indonesia.

RITES has consistently displayed excellent financial performance over the years and has duly built a strong fiscal base. It became a listed company in July, 2018. Within one year of listing, the company has made it to the top-500 companies on the basis of the market capitalization as well as revenue.

### **Business profile**

Major services provided by the company include Engineering and Project Management Consultancy(PMC), Third-Party Inspection, Quality Assurance, Construction Supervision & Project Management, Operation & Maintenance, Leasing and Export of Rolling Stock, Highway/Airport/Bridge/Tunnel Engineering, and Rolling Stock Design. The Company is also engaged in turnkey projects for railway workshops, track doubling/tripling/quadruplicating, new/additional railway line, railway electrification, redevelopment of railway stations, and institutional buildings. RITES, through its subsidiary, has diversified into the field of renewable energy such as solar and wind energy as well as power procurement for Indian Railways.

### **Domestic Business**

During the year 2019-20, RITES executed many prestigious projects, which include consultancy for capacity enhancement through Semi-High speed and High Speed Railway Line, detailed design of alignment for Delhi – Ghaziabad – Meerut Line for RRTS Corridor. It also worked on the DPRs for 9 railway tunnels, rail-based Mass Transit Systems for Gorakhpur, Prayagraj, Chennai, Vijayawada, Jammu, Srinagar, Thane, Nagpur, Mumbai, Kanpur and Agra, rail infrastructure for DVC, NTPC, CIL and others at various locations, railway station development project for Ayodhya and Varanasi. It provided services for various projects on turnkey construction basis to Indian Railways viz construction of doubling of track between Gooty and Dharmavaram section, Annupur-Pendra Road third line, and electrification of Sawaimadhopur-Jaipur-Ringas. Also, it completed Vijaypur-Pachore Road-Maksi section railway electrification project (188 km) in Madhya Pradesh and 83 km of track work.

Further projects such as General Consultancy for Metro Rail System Ahmedabad, Nagpur & Pune, Detailed Design Consultancy for Power Supply & Distribution system for Ahmedabad Metro & Bengaluru Metro phase-II and Independent Quality Monitoring for Noida Metro Rail Corporation Ltd also progressed well during the financial year.

## Overseas Business

RITES has completed supply of six DEMUs trainsets (Diesel Electric Multiple Units) and 10 locomotives to Sri Lanka and based on the quality of the product supplied, the Company secured a repeat order of two DEMUs from Sri Lanka.

The Company is also executing PMC for 4-Lane National Highway project in Bangladesh, Trident Port for Government of Mauritius and Construction Supervision Services for Metro Express project, phase-1 of this was operationalized during the year. It has also completed the work of Integrated Check Post (ICP) at Biratnagar and secured work of ICP at Nepalgunj in Nepal. It has also completed the detailed project report for Georgetown road project in Guyana (South America).

Further, RITES has emerged as successful bidder for supply of 6 locomotives and 90 coaches, including 5 DEMUs trainsets, to CFM Mozambique for which an agreement was signed in June, 2020.

During the year, RITES was also engaged in various international assignments such as Detailed Design Consultancy Services for a standard gauge railway line between Tema and Akosombo in Ghana; PMC for East Bank-East Coast road linkage project in Guyana (South America); Construction Supervision of Tshesebe-Masunqa Road in Botswana; warranty services for YDM 4 meter gauge locomotives supplied to

Myanmar Railways, warranty maintenance and support services for state-of-the-art LHB BG passenger coaches supplied to Bangladesh and expert services for maintenance of locomotives supplied to CFM/Mozambique.

## Financial progress

During 2019-20, RITES achieved its highest-ever total standalone revenue of ₹2,665 crore, up by 23.1% over 2018-19. Key business segments continued to register growth over 2018-19, with exports income going up by 161.6%, leasing up by 16.5% and turnkey revenue up by 18.7%. Consultancy revenue during the year 2019-20 remained ₹1,066 crore.

Particulars	Standalone (₹ in crore)		Consolidated (₹ in crore)	
	2018-19	2019-20	2018-19	2019-20
Total Revenue	2164	<b>2665</b>	2240	<b>2734</b>
Operating Turnover	1969	<b>2401</b>	2047	<b>2474</b>
Profit Before Tax	677	<b>823</b>	730	<b>874</b>
Profit After Tax	445	<b>596</b>	490	<b>633</b>

## Ircon International Limited (IRCON)

Ircon International Limited (IRCON), a Schedule “A” & Mini Ratna – Category I Central Public Sector Undertaking (CPSU), incorporated by the Ministry of Railways, Central government, under the Companies Act, 1956 on 28th April 1976 originally under the name “Indian Railway Construction Company Limited”. It was created for the development of railway’s networks

in India and abroad utilizing the expertise of Indian Railways. The Company has executed projects operated in the areas of Railway construction including New Lines, Doubling works, Rehabilitation & Gauge Conversion projects, Ballast less track, Electrification, Bridges/Flyover, Tunneling, Sub-Stations, Signal & Telecommunication as well as Leasing of Locos, Station building etc., Over the years, while keeping railway projects as its focus area, it diversified into a wider spectrum of infrastructure such as Highways & Expressways, Tunneling, Bridges, Metro, Power substation, transmission & distribution, Buildings (Industrial, Commercial & Residential), Townships, and Airport Runways & hangars and Mass rapid transit system.

Over the years, the company has extended its operations to other geographies including countries like Algeria, Bangladesh, Iran, Iraq, Malaysia, Nepal, South Africa, Sri Lanka, Bhutan, Myanmar, Afghanistan, Syria, Turkey, Ethiopia, Tanzania, Mozambique, Zambia, Liberia, Nigeria, Indonesia etc. During its 44 years of journey, IRCON has emerged as the front ranking construction company of international repute having executed more than 390 landmark projects in India and 128 projects in 25 countries across the globe.

IRCON is ranked among the top 250 International Contractors 2019 (Only Indian PSU) by Engineering News Record (ENR), USA. The company got listed in the Indian Stock Market on 28th September 2018.

IRCON is an ISO certified company for Quality Management system since 1996 (and the first construction company in India to get this certificate), and is also accredited for Environment Management system from 2011, and for Occupational Health & Safety Management System from 2012. It is an ISO 9001:2015, ISO 45001:2018 and ISO 14001:2015 Certified company.

### **Foreign Projects**

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.

In Bangladesh, IRCON has completed projects of "Design, Supply, Installation, Testing and Commissioning of Computer-based Interlocking Colour Light Signalling System on turnkey basis at 11 stations between Ishurdi-Darsana section."

IRCON has successfully completed project for Procurement of Plant Design, Supply and Installation of Overhead Track Equipments, Traction Sub-Stations, Auxiliary Power Supplies Sub stations, Bulk Power Supplies Switching Stations and Signalling Systems for Majuba Rail Project, South Africa, at a value of '345 crore.

IRCON through its 100% owned subsidiary named IRCON Infrastructure & Services Limited is providing PMC services for Construction of Two Lane Road from Paletwa to India-Myanmar Border (Zorinpui) from



km 0.000 to km 109.200 in Chin State of Myanmar.

### **International Rail Connectivity Projects**

As close neighbors, India shares a unique relationship of friendship and cooperation with Nepal, Sri Lanka and Bangladesh. Taking the bilateral relationship to new heights, IRCON is executing Rail connectivity projects to Nepal and Bangladesh.

### **Strategic Projects 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 strategic 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.

### **During the Year 2019-20, major projects completed include:**

- Setting up of Rail Coach Factory at Rae Bareilly with a production capacity of 1000 coaches per annum.
- Construction of ROBs in the state of Rajasthan
- Survey, Geo-Technical investigation, designing & execution which includes Piling, Sub-Structure, Super Structure Approaches and other Miscellaneous works for construction of Road Over Bridges over the Railway Track in the state of Bihar, India.

### **Among the ongoing 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.
- Six- Laning of Davanagere- Haveri from (Km. 260+000) to Km. 338+923) of NH-48 in the state of Karnataka to be executed on Hybrid Annuity Project on DBOT Annuity Under NHDP - Phase-V.
- Eight-lane Vadodara-Kim Expressway from 323.000 to 355.000 in Gujarat.
- Survey, Feasibility study, detail design and construction of various identified rail connectivity projects of MCRL (Mahanadi Coal Railway Limited).
- Kiul-Gaya Doubling Project (East Central Railway).
- Katni-Singrauli Doubling Project (West Central Railway).
- Katni Grade Separator By pass Line Project.
- Hajipur Bachwara Doubling Project.
- Rampur Dumra - Tal - Rajendrapur Doubling including Ganga Bridge (ECR)

## Financial Performance

IRCON has achieved highest ever Operating Revenue of ₹5,202 crore in the year 2019-20 as compared to ₹4,415 crore in 2018-19. Similarly, total Revenue has also increased to ₹5,442 crore in 2019-20 as compared to ₹4,680 crore in 2018-19, a growth of 16.29%.

PAT(Profit After Tax) of the company have gone up by 10% to ₹490 crore in 2019-20, as compared to ₹445 crore in 2018-19. Net Worth of the company increased to ₹4,165 crore as on 31.03.2020 from ₹3,950 crore at the end of the previous year.

## Corporate Social Responsibility Practices

The Company's social vision is to conduct its CSR initiatives in sync with its policy of doing business in a socially responsible and sustainable manner. It also strives to focus on the needs and expectations of the key stakeholders through various business activities. IRCON has contributed immensely towards the development of the remote areas of the country in terms of capacity building, empowerment of communities, inclusive socio-economic growth, environment protection, promotion of green and energy-efficient technologies, development of backward regions, and upliftment of the marginalised and under-privileged sections of the society, Swachh Bharat Initiatives, amongst others.

The CSR budget for 2019-20 was ₹9.88 crore, which is 2% of the average net profit recorded by the Company in the period of last three financial years. During 2019-20 IRCON has spent ₹10.04 crores which include ₹4.50 crore contributed towards PM cares fund for Prevention from COVID-19.

The below mentioned CSR initiatives have helped in developing the Nation through empowering the society and Improving the Eco System:

- To spread the awareness on cleanliness, IRCON has promoted an initiative 'Waste-to-Energy' for school kitchens located in Adivasi communities in collaboration with M/s LAYA in Vishakhapatnam. Under this initiative wet waste coming from the kitchen is used for Bio gas plant and the waste water coming from the bio gas plants are used for Kitchen garden. Further the dry waste such as Milk covers, papers, and dry leaves from the plants, etc. are used for the firing of water heater/incinerator. The boiled water obtained from the incinerator is used for drinking and cooking purpose. As per the present use of Bio gas system for cooking, there is a saving of LPG consumption of as much as 5 Cylinders a month.
- IRCON joined hands with Arogya Foundation of India, conducted 90 medial camps for the people of Jammu and Kashmir. These medical camps provided effective primary healthcare services through basic health check-ups and treatment across villages. Each of these medical camps catered to 200-250 villagers and successfully brought them the services that they were long deprived of.
- IRCON joined hands with South Western Railway, Bengaluru to beautify the walls of Bengaluru railway station. The idea was to promote the

culture and heritage of South India through mural paintings. As thousands of passengers from outside South India arrive at Bengaluru railway station every day the mural paintings presented them with the culture and heritage in a beautiful manner. The walls outside the railway station were painted with colourful murals depicting the rich culture and heritage South India is famous for.

- IRCON provided assistance for skill development centre at khora district of Ghaziabad. The initiative aimed to provide skill development training to youth in four trades such as Cutting & Tailoring, Beauty Culture, Computer Operations and English Speaking. The initiative was successful in helping women to enhance their skill set and get skill based employment and set them on the course of personal and professional success.
- IRCON decided to partner with Godhuli to impart education to the children by running a school for underprivileged Street/ resettlement labour slum children of labour slum area in Nangloi. One of the best things about Godhuli is their teaching philosophy. The teaching at their school is done in a more interactive fashion using practical methods. Students learn while getting introduced to various ideas and subjects playfully.
- IRCON continues to bring social change for the beneficiaries and society in large through its CSR activities in the future as well. All projects are implemented in true spirit of CSR and are in accordance with Schedule VII of Companies Act / DPE Guidelines and CSR policy of IRCON.

### **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 Kanniyakumari, 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 interfacing these applications to provide a unified IT platform for Indian Railways. The applications being managed by CRIS (at the development or operational stage) are given below:

### **Ticketing and Passenger Services**

PRS (Passenger Reservation System); Modernization of PRS; NGeT (Next-Gen e-Ticketing System); UTS (Unreserved Ticketing System), Paperless UTS, ATVMs (Automatic Ticket Vending Machines), UTS on Mobile; NTES (National Train Enquiry System); RBS (Rates Branch System); IR Web Portal and Complaint Management System; Kolkata Metro Ticketing System including Automatic Fare Collection; Hand-held terminals for TTEs

(HHT); PRS Modernization; Webclaims (Claims and Refunds); PMIS (Parcel Management Information System); TTE lobbies system.

### **Freight and Operations**

FOIS (Freight Operations Information System), e-Registration of demand, and e-payment Gateway; Pipeline Management System for FOIS; ICMS (Integrated Coaching Management System); COA (Control Office Application); TSR (Train Signal Registers); CMS (Crew Management System); SATSaNG (Software aided Train Scheduling System); SIMS (Safety Information Management System); RTIS (Real-time Train Information System); Route Optimization modelling using OR tools; Auto-generation of optimized Loco Links.

### **Resource Management- Finance**

AIMS/I-PAS (Accounting Information Management System); IR Budget management System; GST implementation on all production systems; TAMS (Traffic Accounts Management System); WAMS (Workshop Management Information System); ARMS (Accounting Reforms Management System).

### **Resource Management - Materials and others**

EPS (e-Procurement System); IMMS (Integrated Material Management System); VIMS (Vendors Interface Management System); e-Drishti and other Railway Board Applications; RSMS (Railway Security Management System).

### **Resource Management –Human Resources**

HRMS (Human Resource Management System)

### **Fixed Asset Management**

TMS (Track Management System); RORACS (ROB/RUB General Arrgt. Drawing System); Land Management System; IR GIS System including IR GEO-PORTAL; BMS (Bridge Management System); TMMMS (Track Machines Maintenance Management System); CRS Sanctions Management System; IRPSM (Projects and Sanctions Management System); BSIS (Building & Structures Information System); TDMS (Traction Distribution Management System); EEMS (Electrical Energy Management System).

### **Rolling Asset Management**

LAMS / SLAM / LMS (Locomotive Asset Management System); CMM (Coaching Maintenance Management System); WISE (Workshop Management System); FMM (Freight-Wagon Maintenance Management System); Fuel Management System; Automatic Identification of Rolling Stock using RFID; COFMOW system; PU Information Systems (BLW, MCF/RBL, RWP/Bela).

### **Integration & Infrastructure**

CRIS private Cloud Computing Technology; Communication Network Projects; IR Information Security Management project; Data Analytics and Artificial intelligence (AI); ESB (Enterprise Service Bus); IR-MDMS (IR Master

Data Management System); IREA (Indian Railways Enterprise Architecture).

### **Major new Applications taken up in the year:**

- Tunnel Maintenance and Management System
- Commercial Earning Tenders Management System
- Modernization of FOIS System and DBA facilities

During the year, CRIS datacenter was awarded ISO 27001 IT Security certification.

### **Conclusion**

Implementation of effective IT systems is the quickest and cheapest way to increase efficiency and effectiveness of Railway working. Improved access to information encourages disintermediation in all transactions between the Railways and its customers, improving transparency, speeding up Railway work, and greatly reducing transaction costs. CRIS efforts are directed towards ensuring that IT systems are implemented in all areas of Railway working.

### **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/export credit etc. The Department of Public Enterprises has consistently rated the Company as “Excellent” for its performance vis-a-vis the parameters set out in the MOU.

The Company has leased rolling stock assets worth ₹2,27,588 crore to the Railways upto 31<sup>st</sup> March, 2020. Rolling Stock assets worth about ₹33,544 crore were financed during 2019-20. 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 ₹93,655 crore till 31<sup>st</sup> March, 2020. Besides, IRFC has funded National Projects worth ₹7,578.70 crore upto 31<sup>st</sup> March, 2020.

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 10.978% p.a. in 2019-20 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 ₹5,735.39 crore to Rail Vikas Nigam Ltd. (RVNL) till the end of fiscal year 2019-20 for development of Railway Projects.

IRFC has consistent profit earning track record. It has so far paid ₹3,557.66 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 grade at par with 'Sovereign' from four major International Credit Ratings Agencies.

### Konkan Railway Corporation Limited (KRCL)

The Corporation 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 2019-20 and it is going to be very severe in the Financial year 2020-21 due to the Covid-19 Pandemic.

### Key Financial Highlights

(₹ In crore)		
Particulars	2018-19	2019-20
Total Income	2,898.97	<b>2,734.77</b>
Operating Margin	291.23	<b>199.79</b>
Profit After Tax	99.73	<b>5.96</b>
Net Worth	2,053.63	<b>1,892.31</b>

### Train Operating Performance:

On an average, 46 pairs of Mail/Express train and 9 pairs of passenger Trains were run per day over Konkan Railway single line system during the year 2019-20. In addition to this, 524 nos. of Holidays special trains were run during summer, winter holidays and during Ganpati festival to clear extra rush of passengers in the year 2019-20. The passenger earnings during the year was ₹687.68 crore registering a decrease of 1.06% over the corresponding earning of ₹695.10 crore, last year.

On the freight front, on an average, 12 freight trains were run per day including Roll on- Roll off (RORO) services, during the 2019-20. The freight apportioned earnings during the year was ₹436.10 crore, as compared to last year's freight earning of ₹560.94 crore.

### Project Performance

- a. **Udhampur-Srinagar-Baramulla Rail Line (USBRL Project, J&K):** So far the Corporation has completed 37.80km tunnel excavation, out of total of 46.1km of the construction of Katra-Dharam section of USBRL Project, J&K. 8.363 km of tunnel excavation and 6.747 km of Tunnel Lining have been completed during the year. A turnover of ₹1,434 crore (including GST) in USBRL Project alone was achieved in the year which is the highest ever and 10.05% higher than ₹1,303 crore (including GST) of 2018-19.
- b. **Track Doubling Roha-Veer Section (47km):** Track doubling of this section is expected to increase the line capacity of the Corporation.

During the year, the project has achieved cumulative financial progress of ₹350 crore and physical progress of 94%.

- c. **Route Electrification of Konkan Railway Route:** With complete electrification, the Corporation is expected to save approx ₹200 crore per annum on fuel cost and net saving of ₹60 crore per annum after paying principal and interest on loan. For expeditious execution of the railway electrification on KR route, work has been initiated from both the ends simultaneously. Field works of casting foundation for OHE masts and other civil works are in progress. During the year, the project has achieved cumulative financial progress of ₹615.34 crore and physical progress of 58%.

### **RailTel Corporation of India Limited (RailTel)**

RailTel Corporation of India Ltd. (Miniratna Category-1 CPSU), was formed on 26<sup>th</sup> September, 2000 for modernizing the Telecommunication system of Indian Railways through an internal entity. Formed with an authorized capital of '1000 crore and an exclusive Right of way (ROW) of the 67,415 RKM of Indian railway network, the PSU started functioning with a hand full of talented, experienced and motivated Signalling & Telecommunication engineers of Indian Railways.

Over the years RailTel has grown from a small entity to one of the largest secured Neutral Telecom Services Provider in the country. It is at the forefront of providing nationwide Broadband Telecom & Multimedia Network in addition to Modernization of Train operations and administrative network systems for Indian Railways. The biggest USP of RailTel is its ownership of a Pan-India 55000+ RKM of Optic fibrenetwork which covers all important towns & cities of the country and several rural areas covering 70% of India's population. In high bandwidth backbone segment, RailTel occupies a proud place with its unparalleled network. The network has the ability to provide the mission critical customized connectivity platform for enhanced efficiency and growth. Presently this network is available at more than 600 cities in multiple rings of STM-64/16.

RailTel has PAN India Telecom Network with capability of Service delivery from 2mbps to 100Gbps links. RailTel Network 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 by round the clock 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.

Though RailTel started off as an entity to support Telecommunication system of Indian Railways, soon it diversified into many fields. The company started offering a bundle of services like Internet Bandwidth, Leased lines, Tower Co-location, HD Video Conferencing service (Telepresence as a Service), MPLS-VPN services, UPTIME, USA certified Tier III Data

Center/ Data recovery services, Colocation and Managed services, e-office implementation, and IT & IT enabled services etc. to private and Government clients.

### Performance during last three years.

- In the last 3 years, the Company has consistently earned every year more than ₹190 Crore profit before tax.
- The Company pays revenue share to Railways and license fee to DoT from its income. During the last two years, such revenue share and license fee paid are as under:

(₹ in crore)

	2017-18	2018-19	2019-20
Revenue share to Railways	27.64	28.43	31.81
Revenue share to DoT	45.01	45.21	47.93

- The important financial parameters over last three years are as under:

### Financial Performance

(₹ in crore)

S. No.	Particulars	2017-18	2018-19	2019-20
1	Share Capital	321	321	321
2	Gross Income	1,025	1,017	1112
3	Gross Operating Margin	313	327	361
4	Net Profit after Tax	156	110	138
5	Net Worth	1,249	1,284	1361
6	Dividend paid to Ministry of Railways	62.47	64.20	68.06

### Focus Areas:

#### Station Wi-Fi

As on 31<sup>st</sup> March-2020, 5,655 stations were live with RailTel's RailWire Wi-Fi. 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 2.22 crore user logins in a month and around 9000 TB of aggregated data consumption. Out of the stations commissioned 70% are in rural areas which is bringing free high-speed Wi-Fi services in the vicinity of a major chunk of rural population. The reduction in cost of smart phones is making it easy for even economically weaker sections of society in these areas to avail internet facility through RailTel's RailWire Wi-Fi at stations. This Wi-Fi service has been helpful 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 skills.

## **E-office in Indian Railways**

RailTel has also started implementation of e-office over IR to bring more efficient, effective and transparent inter-government and intra-government transactions and processes. e-Office is a Cloud Enabled Software Application developed by NIC, hosted at RailTel Tier III Certified Data Center at Secunderabad with Disaster recovery at Gurugram. RailTel provides e-office solution from planning to Commissioning along with User training and all support for a smooth transition from manual to Digital workplace by creating a reliable, efficient, and effective way to handle office files & documents. A digital workplace also ensures less consumption of paper thus promoting green workplace.

The project is being executed in phases and implemented in all 60 Units (Zonal HQs, Divisions/CTIs/ PUs / RDSO etc.) of IR & in all the 46 Divisions under Phase-I & phase-II respectively with over one lakh users taking benefit of faster and transparent working. Work for balance 60 units (workshops) for 30000 users is sanctioned.

During the COVID crisis 25 new establishments were commissioned with NIC e-office. This 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. RailTel provided this service to other PSUs such as DFCCIL, IRCON, and CWC etc. RailTel has also created Virtual Private Network for 4500 users of Indian Railways. We have also upgraded Railnet speed at a number of Railway Colonies to further support working from home for Railway Officials.

## **Content on Demand (COD)**

RailTel is in the process of providing the Content on Demand service to passengers in trains by preloaded 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. This is also a source to earn non fare revenue. Digital Entertainment Service Partner has been finalised and pilot implementation on 04 trains over Western and Central Railways have been initiated.

## **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, PRS etc shall be provided. RDN will also be a platform for targeted live messaging on audio, video or social media to display information of national importance and citizen services. Project is to be implemented at 2000 stations (all A1, A, B, C & D category stations).

### **Telepresence as a Service (TPaaS)**

RailTel's TPaaS an end-to-end, full high-definition video conferencing service that gives users a virtual, face-to-face meeting experience was launched in January-2015. Before adoption of TPaaS Indian Railways were spending huge amount of money and man hours for meetings and events. Post adoption of TPaaS the number of travels for meetings and events has dropped drastically saving man hour, travel and lodging expenses. Being swifter, faster in decision making and crisis handling, lesser travel for meetings and events has also helped in saving significant amount of carbon footprint. This is extensively used holding online meetings of Board, Zonal & divisional level. Also used for inauguration of Rly facilities (131 events in last 1 year)

The service now serves 530 elite users across 45 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.

In the current crisis situation, to facilitate meetings from home, video conferencing facilities has been installed in the residence of General Managers of Zonal Railways and Production units of Railways for Meeting with Railway Board. This service is also being used for coordination between GMs and DRMs and other officers who are participating through either Telepresence or WebEx from their residence. During the lockdown period there was phenomenal increase in usage of video conferring service with 25 times increase as compared to pre COVID time to 83, 58, 336man minutes of meeting time.

### **Video Surveillance System (VSS)**

RailTel is also executing provision of IP camera-based Video Surveillance System at 6124 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. During the year VSS has been provided at 215 stations by RailTel.

### **RailWire –Retail Broadband Service**

It is a collaborative model in partnership with local entrepreneurs &



local cable operators for providing access network. There are more than 1.9 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.

### **Modern Train Control System (MTCS)**

RailTel Enterprises Limited (REL), a wholly owned subsidiary company of RailTel Corporation of India Ltd., has been entrusted with the work of Modern Train Control System project for modernizing railway control system in 4 sections of 4 different Zones over 640 Kms. The MTCS project envisages upgradation of signaling system at par with the world standards and will work on LTE (Long Term Evolution) communication backbone.

The Modern Train control system is being implemented for 165 Route KM (RKM) between Renigunta – Yerraguntla, 145 RKM on Vizianagaram - Palasa, 155 RKM on Jhansi - Bina Section and 175 RKM on Nagpur – Badnera section. These are some of the busiest railway routes with heavy traffic. MTCS 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 signaling 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.

### **ICT Advantage to Coal, Aviation, Defence, Banking and Education Sector**

RailTel is one of the pioneer in providing MPLS- VPN , Point to Point connectivity & Data Centre services to companies of Coal, Aviation , Defence , Banking & Education sector. RailTel is also supporting various State Governments in their SWAN (State Wide Area Network).

### **Indian Railway Catering and Tourism Corporation Limited (IRCTC)**

Indian Railway Catering and Tourism Corporation Limited (IRCTC), was incorporated on 27<sup>th</sup> 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 & commercial publicity and global reservation systems. The authorised share capital of the company is ₹250 crore and paid up share capital is ₹160 crore, fully subscribed by Ministry of Railways, Government of India.

During 2019-20, shares of IRCTC got listed on 14<sup>th</sup> October, 2019 on BSE Limited (BSE) and National Stock Exchange of India Limited (NSE) and the public issue was subscribed more than 112 times. Post IPO, shareholding of the President of India (Government of India) reduced to 87.40% from 100% of the paid up equity share capital of the Company.

The financial highlights of the year 2019-20 as compared with the year 2018-19 are as below:

(₹ in Crore)

S. No.	Particulars	2018-19	2019-20
1	Total Income	1,958.94	<b>2,353.54</b>
2	Total Expenditure	1,489.13	<b>1,569.37</b>
3	Profit Before Tax	478.56	<b>745.35</b>
4	Profit After Tax	308.56	<b>528.57</b>
5	Net worth	1,071.02	<b>1,327.82</b>

### Catering & Hospitality:

During the year, IRCTC managed on-board catering services in 417 trains (24 Rajdhani, 2 Tejas, 1 Gatiman, 2 Vande Bharat, 23 Shatabdis, 18 Durgas and 347 Mail/Express trains). During 2019-20, Ministry of Railways introduced one Vande Bharat, one Rajdhani and thirteen Mail/express trains. IRCTC also manages Train Side Vending (TSV) contracts on Mail/Express and Superfast trains having no pantry cars. As on 31<sup>st</sup> March, 2020, contracts for 26 sections over Indian Railways network have been finalized for provision of TSV services for trains without Pantry Cars.

As on 31<sup>st</sup> March, 2020, IRCTC managed 11 Base Kitchens, located at New/Delhi, Howrah, Ahmedabad, Patna, Mumbai Central, Mumbai CST, Ballarshah, Nagpur, Balasore, Sealdah and Kharagpur Jn. and also managed 169 Refreshment rooms, 56 Jan Ahaars and 24 Cell Kitchens.

The Company commissioned 16 Food Plazas and 40 Fast Food Units, thereby managing 293 operational units as on 31<sup>st</sup> March, 2020.

E-catering service is expanding and available at 358 stations. On an average 21,571 meals per day were booked through e-catering in the year 2019-20.

IRCTC has set up 06 Executive Lounges at New Delhi, Agra Cantt, Jaipur, Ahmedabad, Madurai & Sealdah.

The Company is presently operating two Rail Yatri Niwas at Ginger Rail Yatri Niwas, New Delhi and Sampath Rail Yatri Niwas, Howrah and two BNR Hotels from Puri and Ranchi.

The revenue from Catering segment in 2019-20 was registered at ₹1,059.99 crore as against ₹1,045.41 crore in 2018-19.

### Travel & Tourism:

IRCTC has become one of the leading travel and tourism companies in the market. The various tourism business segments of IRCTC includes Luxury Train Tours Maharajas' Express, Buddhist Circuit Special Train, Bharat Darshan Special Tourist Trains, Rail Tour Packages, International and Domestic Air packages, Land Tour Packages, Hotel booking, Customised and LTC tours and Event Management etc. Initialisation of operation and

management of Private Trains which is operated on sectors like, Lucknow-Delhi-Lucknow, Ahmedabad-Mumbai-Ahmedabad and Varanasi-Indor-Varanasi. IRCTC have its exclusive tourism portal, [www.irtctctourism.com](http://www.irtctctourism.com) for showcasing and booking of various tourism products in a single space.

The revenue from Tourism segment in 2019-20 was registered at ₹297.20 crore as against ₹251.25 crore in 2018-19.

### **Internet Ticketing:**

E-ticketing accounts for 72.75% of reserved tickets in 2019-20 on Indian Railways booked online. On an average, more than 8.25 lakh tickets were sold daily through IRCTC's website and Mobile App during 2019-20. The site offers round the clock ticket booking services except for 35 minutes from 2,345 hrs to 0020 hrs.

<b>Year</b>	<b>2018-19</b>	<b>2019-20</b>
No. of E-Tickets Booked (in Lakh)	2,842	<b>3,019</b>
No. of Passengers Booked E-tickets (in Lakh)	4,950	<b>5,230</b>
E-ticketing Revenue Collection (₹ in Crore)	32,070	<b>34,055</b>

The revenue from Internet Ticketing segment in 2019-20 was registered at ₹622.34 crore as against ₹234.10 crore in 2018-19.

### **Packaged Drinking Water (Rail Neer) :**

As on 31.03.2020, IRCTC has fourteen operational plants located at Delhi, Patna, Palur, Ambernath, Amethi, Parassala, Bilaspur, Sanand, Hapur, Mandideep, Nagpur, Jagiroad, Jabalpur and Sankrail which are under PPP mode.

The total production of Rail Neer Plants during 2019-20 was 29.50 crore litres against total production of 21.50 crore litres the in previous year. The capacity utilization of all plants was 79% as on 31<sup>st</sup> March, 2020.

The revenue from Rail Neer segment in 2019-20 was registered at ₹225.85 crore as against ₹176.26 crore in 2018-19.

### **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 2018-19 and 2019-20 are:-

	<b>2018-19</b>	<b>2019-20</b>
Number of single stack Container trains	2,338	<b>2,109</b>
Number of Double Stack containers trains	2,117	<b>2,073</b>
Total container	4,455	<b>4,182</b>
Number of Bulk trains	575	<b>618</b>
Number of empty trains run	488	<b>536</b>
Total number of trains run	5,518	<b>5,336</b>
Traffic volume (in Million Tonnes)	8.24	<b>8.14</b>
TEU's loading	3,26,690	<b>3,26,812</b>
Gross Apportioned freight earnings (₹in crore)	227.65	<b>229.65</b>
Net Profit (₹in crore)	85.61	<b>82.15</b>
Net Worth as per audited financial statements(₹in crore)	571.18	<b>641.52</b>
Number of passenger trains (in SUNR – Botad)	18 pairs**	<b>19 pairs**</b>

\*\* 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.

### **Rail Vikas Nigam Limited (RVNL)**

Rail Vikas Nigam Limited (RVNL), a CPSE under the Ministry of Railways was incorporated in 2003 to raise non-budgetary resources for implementation of rail capacity augmentation projects and their implementation on a fast track basis.

Cumulatively, up to 31.03.2020, RVNL has completed 10,839.48 km of project length covering 455.55 km of New Lines, 3,483.37 km of Doubling, 1,888.63 km of Gauge Conversation and 4,969.93 km of pure Railway Electrification, 2,385.29 km RE as part of NL/GC/DL, 42 km of Metropolitan Transport Project (MTP), 8 Railway Workshops, 1 Cable Stayed Bridge at Bardhaman and 9 Other Specific Works. 92 projects assigned to RVNL have been fully completed. In comparison to completing a total of 999.94 km of project length in 2018-19, RVNL completed 1959.83 km in 2019-20 implying an increase of 95.99%. This included 551.02 km of Doubling, 95.54 km of New Lines, 105.41 km of Gauge Conversation and 1207.86 km of Railway Electrification. In addition, Railway Electrification of 355.88 km was also carried out in other than specific Railway Electrification projects as part of Doubling. For the past six years, RVNL has been contributing more than 1/3<sup>rd</sup> of total project length completed on Indian Railways under Doubling & about 20% under Railway Electrification Plan Heads.

## Financial Performance (2019-20) as compared with 2018-19

(₹ in crore)

	2018-19	2019-20
Total Turnover	10,060.07	<b>14,530.58</b>
Gross Profit	758.31	<b>990.84</b>
Profit after Tax	606.59	<b>789.96</b>
Dividend	186.94	<b>236.96</b>

The cumulative dividend paid to Ministry of Railways by RVNL is ₹1,012 crore.

In addition to borrowings from IRFC for implementation of projects, comprising of ₹4,256.65 crore, RVNL's role in resource mobilization has resulted in the setting up of 6 project specific Special Purpose Vehicles (SPVs) with a total anticipated cost of ₹9,466.89 crore against which the equity contribution of RVNL is ₹983.80 crore, i.e. 10%. Balance funds of ₹8,483.89 crore will be provided by the equity share of stakeholders and through debt raised from Financial Institutions. The SPVs of RVNL include Kutch Railway Company Ltd., Krishnapatnam Railway Company Ltd., Bharuch Dahej Railway Company Ltd., Haridaspur Paradip Company Ltd., Angul Sukinda Railway Ltd. & Dighi Port Railway Company Ltd. of which the first four SPVs are fully functional. RVNL is also an Equity Partner in Indian Port Rail Corporation Limited (IPRCL) with 12 Major Ports under Ministry of Shipping for undertaking railway related projects and activities in major ports.

RVNL, with the approval of the President of India, has incorporated a fully owned subsidiary, High Speed Rail Corporation of India Ltd. (HSRC) in July 2012 for development and implementation of High Speed Rail Projects in the country. HSRC has been assigned the task of carrying out a number of pre-feasibility/feasibility studies for High Speed Corridors.

In addition to its regular activities, RVNL is making special efforts to meet its responsibility to the marginalized communities where its projects are located by implementing various "Corporate Social Responsibility" projects with a focus on health & education related activities in which an amount of ₹19.43 crore was spent during 2019-20 (around 3.2% of the average net profit of last three financial years) on CSR initiatives, compared to ₹11.48 crore in the previous year.

### 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. The Rules for functioning of RLDA have also been notified in the Extraordinary Gazette dated 04.01.2007.



## **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 2019-20, total earning of ₹933.27 crore has been realized by RLDA.

In the beginning of 2019-20, RLDA had been entrusted with 75 (1 site is under litigation) sites. During this period, RLDA had identified 13 new sites for commercial development. During 2019-20, 11 nos Letter of Acceptance (LOA) for development of commercial sites have been issued. Out of 11 selected bidders, LOA of 02 sites has been cancelled on account of non-payment of 1<sup>st</sup> installment of lease premium.

### **1.2 Construction of Multi Functional Complexes (MFCs)**

Land for MFCs are 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 the PSU for development [IRCON (24), RITES (14), RVNL (2)], out of these 40 MFCs have been completed by them and 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. RLDA has been entrusted 123 MFCs for development through private developers. Out of these 53 MFCs have been awarded and 33 MFC have been deferred by Railway Board, due to non feasibility or being commercially unviable or requested by Railway to drop them.

LOAs for 3 MFC sites namely Sasaram, Arsikere & Bangarpet were issued during 2019-20.

### **1.3 Re-development of Railway Colony**

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 non-tariff revenue by leveraging land uses and FSI. Upto March 20, Railway has entrusted 84 colonies to RLDA for re-development.

### **1.4 Re-development of Railway Station by RLDA 2019-20:**

- For redeveloping railway stations, Indian Railway Stations Development Corporation Ltd. (IRSDC) was created as a Special Purpose Vehicle (SPV), Joint Venture of IRCON & RLDA with an authorized share capital of ₹100 crore and initial paid up share capital is ₹40 crore, which has been now enhanced to ₹80 crore. IRSDC has been entrusted about 50 stations for redevelopment till the end of the year 2019-20. Redevelopment of Habibganj and Gandhinagar stations is under progress by IRSDC.

In all RLDA has been working on the re-development of 62 Railway Stations during the year 2019-20.

## **Dedicated Freight Corridor Corporation of India Limited (DFCCIL)**

Dedicated Freight Corridor Corporation of India (DFCCIL) is a Special Purpose Vehicle set up under the administrative control of Ministry of Railways to undertake planning & development, mobilization of financial resources and construction, maintenance and operation of the Dedicated Freight Corridors. DFCCIL was incorporated on 30<sup>th</sup> October 2006 under Indian Companies Act 1956.

Dedicated Freight Corridors (DFC) is one of the most ambitious rail infrastructure projects undertaken by the Government of India. In the first phase, two corridors - the Eastern DFC (1,337 route km) and Western DFC (1,504 route km) spanning a total length of 2,843 route km (except Sonnagar – Dankuni section) are being constructed. The Eastern Dedicated Freight Corridor starts from Ludhiana and terminates at Sonnagar, traversing the states of Punjab, Haryana, Uttar Pradesh, and Bihar. The Sonnagar – Dankuni section will be built on a PPP mode. It will largely serve coal and steel traffic to northern parts of India. The Western Dedicated Freight Corridor originates from Dadri (Uttar Pradesh) and terminates at Jawaharlal Nehru Port Trust (Mumbai) passing through Uttar Pradesh, Haryana, Rajasthan, Gujarat and Maharashtra. This corridor will mainly meet requirements of container traffic.

### **Advantages & Features of DFC**

Implementation of DFCs is expected to generate two major impacts on the freight movement- a shift of freight from the road, thereby leading to increase in rail share and improvement in the energy efficiency of freight rail through the adoption of improved technologies leading to a significant reduction in carbon footprints. The difference in volumes of freight transported by rail over the freight by road can easily be judged by the fact that one DFC train will be able to take as many as 1,300 trucks off the road.

### **Project in Brief:**

The total length of the Eastern & Western DFC is targeted for completion in the period 2018-2022 (in phases). Total Expenditure upto 31.03.2020 (approx.) is ₹5,877 crore (including the cost of land). The overall financial progress is 69% (including land) and the overall Physical progress is 71%.

DFCCIL achieved the following milestones during the year 2019-20:

#### **A) Achievements during the year 2019-20**

1. Nationwide lockdown was imposed due to COVID 19. Consequently, work across DFCCIL at all worksites was badly affected. However, DFCCIL took a number of measures to ensure timely payment to the contractors / employees and availability of raw PPEs, sanitising material to all field staff.
2. Trial runs in Western & Eastern DFC: The project has witnessed successful trial runs of Freight trains in both Eastern and Western

Corridor after completion of Civil, Electrical and S&T works.

- Rewari-Madar section (306 km) in WDFC has already been completed in December, 2019 and more than 176 trains have been run in this section upto 31.03.2020.
  - Bhadan-Khurja (194 km) section in EDFC-I has already been completed and more than 1200 trains have been run in this section since November 2019.
3. Track linking with Mechanized track laying machine of 682 km has been done in the year taking the cumulative linking to 2,582 km.
  4. OHE wiring by Mechanized wiring train has been started for the first time in India in both EDFC & WDFC. Total 1,508 km laying of catenary and contact wire has been completed upto 31.03.2020.
  5. CAPEX: DFCCIL achieved CAPEX of ₹3,476 crore during March 2020. With this the cumulative CAPEX for 2019-20 is ₹11,740 crore.
  6. Successful Oscillation run in WDFC: Oscillation Trials of 25T axle load BOXNS & BLC (Container) wagon at maximum speed of 110 kmph was successfully conducted by RDSO in Phulera-Ateli section (193 km) of Western DFC. With this, now full DFC is fit to run 25 T axle load trains @ 100 kmph, as against IR's current regime of 22.9 T axle load @ 65-70 kmph.
- B) Overall progress of major items:** There has been considerable progress of major items. 228 major bridges out of 494 have been completed while 127 are in progress. 298 out of 562 RUBs have been commissioned while 232 are in progress. 68 out of 296 ROBs have been completed while 138 are in progress.
- C) Procurement:** The MOU for implementing the e-tendering application IREPS developed by CRIS was signed with CRIS and has been implemented in DFCCIL. As per the guidelines of Railway Board, procurement of the products and services available on GeM are done mandatorily through GeM portal. Products worth ₹1.29 crores (156 nos of orders) have been purchased through GeM during 2019-20. The BDD (business discovery document) for material management module has been finalized with SAP for implementation of Material Management Module which will facilitate inventory and material management for the organisation.
- D) Land Acquisition:** There has been a tremendous improvement in the cooperation by State Governments. Numerous hurdles/impediments have been removed and considerable progress in the land acquisition has been achieved.
- E) Environmental Issues:** During the year various Environmental and Safety awards have been obtained in various sections of DFCCIL like RoSPA Golden and Silver Award, International Safety Award. During the year mass plantation drive at construction site has been undertaken and till the year 2020, approx. 45000 trees have been planted.

**F) HR Initiatives:** The NPS Scheme finalized and approved by the Board. Creation of posts in various departments in operations phase was received from BoD. Document verification and Pre employment medical test was conducted for 600 candidates in Jan-Feb 2020.

**G) Corporate Social Responsibility:** Being a conscientious organization, DFCCIL has undertaken numerous CSR activities. They include Skill intervention in schools to improve the employable skills and physical fitness of the students (through Confederation of Indian Industry-CII), Installation of submersible pump and water tank in UP's Mirzapur district, provision of hand pumps and solar lights in Kodarma, Jharkhand, construction of toilet blocks and installation of computers in schools in Ballia, UP.

### **Mumbai Railway Vikas Corporation Ltd. (MRVC)**

1.1 Mumbai Railway Vikas Corporation Ltd (MRVC Ltd), a PSU of Government of India under Ministry of Railways (MOR) executing of the Rail Component of the MUTP.

#### **1.2 Mumbai Urban Transport Project – I**

MUTP-I was sanctioned in Rail Budget 2003-04. The completion cost of MUTP-I was ₹4,452 crore MUTP- I was successfully completed in 2012.

### **Major Infrastructural Inputs in MUTP Phase - I (Rail Component)**

- Addition of 93 track Kms. (5<sup>th</sup> & 6<sup>th</sup> line Kurla-Thane, 3rd& 4th 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 and the present cost of project is ₹8,087 crore MUTP-II was bifurcated as MUTP 2A & 2B.

1.3.1 **MUTP 2A – Completed :** Cost of MUTP 2A is ₹4,803 crore (Loan ₹1,727 crore from WB)

S. No.	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 & MoR on 50:50 basis)**

S. No.	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	June 2021
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, number of amenities were provided in Mumbai suburban stations –

30	New FoBs	12	New platforms
27	Booking offices,	02	New home platforms
6	Elevated Decks,	44	Escalators
31	Platform extensions	25	Elevators.
01	New Station (Ram Mandir Rd)	06	Skywalk/Highwalk

**1.5 MUTP 2C – Running of 12 car on Harbour line - Completed: Cost of ₹714 cr.**

All infrastructure works were completed in March, 2016 and this increased the capacity by 33% on harbour line. The 13 EMU rakes were also received by Feb., 2018

**1.6 MUTP 3 – Sanction in Dec. 2016 – Cost of ₹10,947 cr.**

S. No.	Name of the work	Cost (₹in Cr.)
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 the corridors is in progress & tenders awarded for MUTP III works. A Loan Agreement has been signed by Govt. of India & AIIB on 24.08.2020 of ₹3,500 crore (USD 500 million) for MUTP III.

1.7 **MUTP 3A** - has been approved by Union Cabinet in March 2019 at the cost of ₹33,690 crore which is as under -



<b>S. No.</b>	<b>MUTP 3A corridors</b>	<b>Route km</b>	<b>Completion Cost in cr</b>	<b>Executing Agency</b>
<b>1</b>	Extension of Harbour Line between Goregaon-Borivali	7	826	Western Railway
<b>2</b>	5th & 6th line between Borivali-Virar	26	2,184	MRVC
<b>3</b>	4th line between Kalyan-Asangaon	32	1,759	Central Railway
<b>4</b>	3rd & 4th line between Kalyan-Badlapur	14	1,510	MRVC
<b>5</b>	Kalyan Yard - Segregation of Long distance and Suburban Traffic		866	Central Railway
<b>6</b>	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
<b>7</b>	Station Improvement		947	MRVC
<b>8</b>	Procurement of Rolling Stock – 191/12 car AC EMU rakes		15,802	MRVC/ICF/MCF
<b>9</b>	Maintenance facilities for Rolling Stock		2,353	MRVC
<b>10</b>	Stabling Lines		557	CR & WR
<b>11</b>	Augmentation of Power Supply Arrangement		708	CR & WR
<b>12</b>	Technical Assistance		250	MRVC

Preliminary works are in progress.

### 1.8 **Construction of FoBs on Central & Western Railway**

Railway Board has entrusted MRVC the work of execution of FoBs on Central Railway (13) and Western Railway (16) stations of Mumbai Suburban Section in November 2017. 7 FoB completed on CR & 12 FoB 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 steelwork, Bridges, manufacture and maintenance service for cranes and steel castings (Bogie, Coupler etc) and wagon sub assemblies.

Although BCL's core competency is developing & manufacturing of various types of wagon, however in recent times, BCL has gradually forayed into Service Sector and also entered into various other business verticals

viz. manufacture of SS benches for various Zonal Railways, renovation and rebuilding of Rail and Foot Over bridge (ROB / FOB) etc. The Company is accredited with ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 and EN ISO 3834-2:2005.

Highlights of its performance in the year 2019-20, vis-a-vis 2018-19 are tabulated below:

<b>Particulars</b>	<b>2018-19</b>	<b>2019-20</b>
Newly Built Wagon (Nos.)	869	<b>1,263</b>
Repair Wagon (Nos.)	4,590	<b>7,852</b>
Bogie (Nos.)	1,371	<b>1,883</b>
Revenue from Operations (₹ in cr.)	317.03	<b>579.16</b>
Profit (PBT) (₹ in crore)	9.41	<b>23.97</b>
Net Worth (₹ in crore)	63.68	<b>83.45</b>



*A view of a train passing from visual spectacle called 'Dudhsagar Falls' on Hubballi to Goa route, SWR*

# 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. National Railway Users' Consultative Council (NRUCC), 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.

NRUCC has been reconstituted for a two year term from 01.02.2019 to 31.01.2021. 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 for this purpose.

# Important Events

## 2019-20

- 1 28.05.2019 Inauguration of two new sections in Central Railway School, Kalyan on the occasion of historical achievement of completing 100 years in serving the society.
- 2 03.06.2019 Flagging off of Inaugural Express Special Train Service between Hubballi and Gangavathi.
- 3 15.06.2019 Flagging off of 55579/80 Darbhanga-Mandan Mishra Halt new passenger over newly gauge converted section from Mandan Mishra Halt to Sakri.
- 4 22.06.2019 Flagging off of introduction of “Utkrisht” Rake on Rani Chennama Express.
- 5 06.07.2019 Inauguration of New Train Anupgarh-Bhatinda Jn-Anupgarh.
- 6 20.07.2019 Inauguration of extension of 14617/18 Saharsha-Amrtisar Janseva express up to Banmankhi from Banmankhi station.
- 7 20.08.2019 Inauguration of Integrated Solution for High Capacity Bogie Assembly line installed at Bogie Shop.
- 8 28.08.2019 Inauguration of newly broad gauge converted Lakhimpur-Sitapur rail section and flagging off of special train to mark the commencement of train operations on the section at a function organized at Dharm Sabha Inter College, Lakhimpur.
- 9 29.08.2019 Inauguration of Tatisilwai-Shanki new Railway Line and flagging off of 18114/18113 Ranchi-Tatanagar Express and 58663/58664 & 58665/58666 Hatia-Shanki Passenger Trains at Ranchi Station.
- 10 01.09.2019 Flagging off of Gudur – Vijayawada Intercity Superfast Express. Dedication/Inauguration of various rail developmental works & passenger amenities at Gudur Railway station.
- 11 13.09.2019 Flagging off of the increase in frequency of 22221/22222 CSMT-Nizamuddin Rajdhani Express from Bi-weekly to four days a week. Inauguration of Building for Railway Claims Tribunal (Second Bench) Mumbai, 3 foot over bridges at Khar Road and Vile Parle station and 2 Escalators at Lower Parel station. Dedication of 11 foot over bridges at suburban stations, 1 escalator and 1 lift at Parel stations, Renovated passenger corridor at CSMT platform 14-18, 2 Renovated booking offices at Govandi and Ghatkopar stations, HVLS fans at CSMT

and Byculla stations, 2 Green stations – Chembur and Dockyard Road stations, IP based LED indicators at 22 suburban stations, Improvement of cover over platforms at 13 suburban stations, Resurfacing of platforms at 9 stations and Free Wi-Fi at 29 stations of Central and Western Railways.

- 12 14.09.2019 Inauguration at Patna Junction - New Waiting Hall in PRS building, Humsafar App, PURB – photo boarding pass for Unreserved passengers, Entertainment on Demand, Foundation stone for new Premium Pay & Use complex with bath & change + coffee lounge, Cashless payments in parking & pre-paid taxi counters, Digital advertising, OYO Kiosk, Train Indication Boards in Publicity Route, New PRS & UTS building at 2nd entry Karbigahiya side, Patio Umbrella – Portable sitting arrangement on PF-10 in Non-Fare Revenue route, New Escalator – HWH end, Main Entrance, Food Track in North side circulating area, Dedication of New façade & LED lighting, New Pickup & Drop Zone at Patna Jn. and other passenger amenities at Patna Jn, At Hardasbigha Inauguration of Stoppage of 63222 Patna-Mokama MEMU Passenger, Inauguration of Stoppage of 63222 Patna-Mokama MEMU Passenger.
- 13 14.09.2019 Flagging off of the Train No. 07313 Hubballi – Chennai Central inaugural special from Hubballi Railway Station.
- 14 15.09.2019 Introduction of 18635/18636 Ranchi-Dehri-on-Sone Express.
- 15 15.09.2019 Flagging off of Ranchi-DTO express and 2nd class waiting hall.
- 16 17.09.2019 Flagging off of new passenger train between Poreyahat & Dumka and new poreyahat- Dumka passenger train at Poreyahat station.
- 17 26.09.2019 Flagging off of UDAY Express at Visakhapatnam.
- 18 02.10.2019 Inauguration at Bapudham Motihari:- 1. Receiving and observing of train no. 12557 Sapt Kranti express upgraded with LHB rake, vinyl wrapped with theme “Mohan to Mahatma” – a moving exhibition on train. 2. Distribution of Jute Bags and literatures on Gandhiji to passengers of 12557 Sapta Kranti express. 3. Inauguration of Motihari historical steel/ brass board. 4. Inauguration of exhibition showcasing “Mohan to Mahatma” and important development of Railway projects in Bihar. 5. Swachhta hi Sewa Shramdan on PF no.-1 and circulating area with



- mechanized machines as part of Swachhta Pakhwara.  
6. Inauguration of Bottle Crushing Machine.
- 19 03.10.2019 Flagging off of new DEMU train services in Dharmanagar-Agartala-Sabroom section along with commissioning of the newly constructed BG railway Line up to Sabroom at Agartala Railway station.
  - 20 03.10.2019 Flagging off of the second Vande Bharat Semi High Speed Express Train of the country from New Delhi Railway Station.
  - 21 04.10.2019 Inauguration of first ever Corporate train TEJAS EXPRESS from Lucknow jn. to New Delhi.
  - 22 04.10.2019 Flagging off of the Sarbat-Da-Bhala Express Train from New Delhi to Lohian Khas.
  - 23 12.10.2019 Hoisting of National Flag at a height of one hundred ten feet in a function organized in the premises of Ballia Railway station. Also inauguration of Chhapra-Varanasi City new MEMU train.
  - 24 15.10.2019 Flagging off of the Train No. 76528 Tumakuru – Yesvantpur DEMU inaugural special as SEWA Service Six days in a week (Except Sunday) in South Western Railway from New Delhi through video conference.
  - 25 15.10.2019 Inauguration of newly constructed pedestrian at Kundwa Chainpur.
  - 26 15.10.2019 Flagging off of New passenger train between Murkongselek – Dibrugarh.
  - 27 15.10.2019 Flagging off of the Sewa Train.
  - 28 16.10.2019 Flagging off of the inaugural special trains Salem-Karur-Salem DEMU (76802/76801), Palani Coimbatore-Palani Passenger (56608/56609) and Pollachi Coimbatore-Pollachi Passenger (56183/56184) services at Salem, Coimbatore and Pollachi in Southern Railway.
  - 29 16.10.2019 18635/18636 Ranchi-Dehri-on-Sone Express extended upto Sasaram.
  - 30 17.10.2019 Flagging off of extension of Ranchi-Dehri on Son-Ranchi Intercity express to Sasaram.
  - 31 18.10.2019 Inauguration of the Railway line between Hosapete – Kotturu for passenger trains and flagging off of the Train No.56530 Hosapete – Harihar inaugural special on 17.10.2019 from Hosapete Railway Station.
  - 32 21.10.2019 Inauguration of function at Ringus Station New Train Jaipur-Sikar-Jaipur DEMU Train.

- 33 23.10.2019 Inauguration of extension of Train No. 59821/22 Kota-Bhind-Kota passenger to Etawah and conversion of train no. 19811/12 Kota-Etawah-Kota into Express.
- 34 24.10.2019 Inauguration of one touch ATVM at 42 suburban stations to facilitate fast ticketing to its millions of commuters over Mumbai Suburban Network.
- 35 31.10.2019 Flagging off of 15269/70 Muzaffarpur-Ahmedabad Jansadharan express with new LHB rake depicting the life of Sardar Vallabhbhai Patel from Muzaffarpur station.
- 36 03.11.2019 Inauguration of the Railway line between Ambewadi – Alnavar and flagging off of the Inaugural Train No. 06923 Ambewadi – Dharwad Passenger Special from Ambewadi.
- 37 01.12.2019 Inauguration of new Passenger Train service on newly gauge converted Supaul-Garhbaruari rail section from Supaul Station.
- 38 03.12.2019 Inauguration of new Passenger Train service on newly gauge converted Jhanjharpur-Mandan Mishra Halt rail section from Jhanjharpur Station.
- 39 14.12.2019 Dedication of the newly constructed Chhayapuri station.
- 40 16.12.2019 Inauguration of Solar Power Plant at LHB Shed 1 MWP ON-Grid Rooftop Solar Power Plant.
- 41 18.12.2019 Inauguration of Lifeline Express at Subedarganj station.
- 42 18.12.2019 Dedication of the doubling of Railway Line between Ghatprabha and Chikkodi from Ghatprabha Railway station.
- 43 19.12.2019 Inauguration of a Multi functional complex at Gaya with 90 room hotel, 14 shops, banquet hall and restaurant.
- 44 26.12.2019 Flagging off of Renovated Rajdhani Express coaches & UTS Inauguration.
- 45 26.12.2019 Flagging off of Train & Inauguration of Mahipur Station.
- 46 07.01.2020 Inauguration of two minute stoppage of Gondia-Barauni-Gondia Express at Suremanpur station
- 47 14.01.2020 Flagging off of inaugural run of two new Express trains between Madhupue & Anand vihar.
- 48 17.01.2020 Flagging off of the Ahmedabad-Mumbai Central Tejas Express.
- 49 30.01.2020 Flagging off of the inaugural run of first ever Air-conditioned Suburban Train of Central Railway from Panvel (Through Video link) on Thane-Vashi-Panvel Trans-Harbour line. Dedication of 13 Foot over bridges

at 12 stations on Central and Western Railway, New booking offices at Ghatkopar and Kaman Road stations, Deluxe toilets at Lokmanya Tilak Terminus and Panvel stations, High Volume Low Speed (HVLS) fans at Byculla and Dadar stations, Solar panel at Chhatrapati Shivaji Maharaj Terminus, Free Wi-fi at 20 stations of Central Railway and IP based LED indicators at Dadar and Thane stations.

- 50 08.02.2020 Inauguration off of Newly Electrified section of Chunar-Chopan in Uttar Pradesh under North Central Railway from Bengaluru. Flagging off of first electric locomotive hauled passenger train at Sonbhadra.
- 51 13.02.2020 Flagging off of Train No. 13063/13064 Howrah-Balurghat Express with increase in frequency from bi-Weekly to five days in a week.
- 52 13.02.2020 Inauguration of phase-1 of East West Metro Corridor of Kolkata Metro Railway at Salt Lake Sector V Metro Station.
- 53 13.02.2020 Dedication of 7.25 km Andul-Baltikuri Double Line to the Nation from Salt Lake, Sector-V Metro Station, Kolkata.
- 54 15.02.2020 Flagging off of 55503 Supaul-Saharsa Passenger from Supaul station.
- 55 15.02.2020 Flagging off of 75266 Banmankhi-Barhara Kothi DEMU Passenger train from Banmankhi station.
- 56 28.02.2020 CLW ENTERS LIMCA BOOK OF RECORDS - The record production of 402 electric locomotives in 2018-19 from Chittaranjan Locomotive Works (CLW) has got recognition from the Limca Book of Records as World Record.
- 57 29.02.2020 Flagging off of the extension of 13053/13054 Radhikapur - Howrah-Radhikapur Express.
- 58 04.03.2020 Flagging off of the 400<sup>th</sup> loco, WAG-9HC (32803) of 2019-20 by the senior most woman employee of CLW on International Women's Week celebration in CLW.
- 59 13.03.2020 Dedication of the 2500<sup>th</sup> 3-phase passenger locomotive, WAP-5 bearing no. 35007 with hauling capacity of 6000HP by Chittaranjan Locomotive Works (CLW).

# Glossary

## ACCOUNTS

Capital-at-Charge	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. 19 of 2019**

The Audit Report consists of audit findings relating to compliance issues in respect of the Ministry of Railways and its various field units. A brief overview of the important audit findings is given below:

### **Para 2.1 Setting up of Private Freight Terminals in Indian Railways**

The Private Freight Terminals (PFTs) policy was introduced to enhance Railways share in the overall transport chain through participation of private sector. Under the policy, private parties, known as Terminal Management Companies (TMCs), come forward to set up freight terminals. They are required to set up PFTs on their own land and develop terminal facilities from where any private customer can book his freight traffic. For this facility, they charge Terminal Access Charge. Railways are responsible to provide logistic facilities to TMCs e.g. connectivity to railway line, rakes, commercial staff. This review was undertaken with a view to assess whether the objectives for setting up of PFTs were achieved. Some of the salient audit findings are as follows:

- 121 applications were received for setting up of PFTs since the introduction of the policy in 2010. Of these, only 58 PFTs could be set up in 13 Zonal Railways. The remaining applications were pending as the process of approval was time consuming and there were delays in approval by the Railways. Another reason for delay was difficulties in land acquisition by TMC.
- Railways were not able to achieve substantial improvement in freight earnings. Only eight PFTs were able to generate business as projected in the Detailed Project Reports.
- Fifty-eight PFTs were commissioned in 26 Divisions. The share of traffic through these PFTs was only 1.82 per cent to the total traffic generated and 1.33 per cent of the total traffic earnings of these 26 Divisions.
- The target for setting up of 100 Private Terminals and generation of 100 Million Tonnes traffic as envisaged under 'Mission Hundred' could not be achieved. Shortfall of 41 per cent in setting up of Private Terminal and 71 per cent in generation of freight was noticed against the target.

- Railways may analyse the reasons for less generation of traffic in PFTs. The financial viability of setting up a PFT, may be examined.
- The cost of commercial staff was being borne by TMC. This entailed additional expenditure on part of the TMCs.
- In a number of PFTs, weighbridges were either not installed/commissioned or not found in working condition. This may cause overloading and damage to railway wagons and tracks.

## **Para 2.2 Working of Automatic Ticket Vending Machines (ATVMs) in Indian Railways**

Automatic Ticket Vending Machines (ATVMs) were introduced by Indian Railways in October 2007 to reduce congestion of unreserved class passengers and long queuing at the ticket counters. ATVMs are touch screen-based ticketing kiosks operated using Smart Cards. Co-ATVMs are cash/smart card operated ticket vending machines. These machines can be used by passengers themselves to buy unreserved tickets through currency/coins as well as smart cards. Single journey tickets, platform tickets can be purchased and season tickets can be renewed through these vending machines.

As on 31 March 2018, 3851 ATVMs and 459 Co-ATVMs (Cash/Smart Card operated ticket vending machines) had been installed over 14 Zonal Railways. In ECR and NEFR, no ATVMs/Co-ATVMs were installed. A sample of 271 stations, where 974 ATVMs and 199 Co-ATVMs were installed was selected for detailed study. The review covered the period from 2015-16 to 2017-18. Audit objective was to assess the extent to which these have been able to achieve the objectives for which they were installed. Some of the salient audit findings are as follows:

- No feasibility study was conducted by the Zonal Railways for assessing the requirement of ATVMs/Co-ATVMs at stations.
- The share of tickets sold through ATVMs/Co-ATVMs was only 16.90 per cent of the total sale of unreserved tickets at 271 selected stations. In selected non-suburban stations, 87 per cent tickets were still sold through window counters. At selected sub-urban stations, the sale of tickets through window counters was 82 per cent of the total tickets booked.
- The share of tickets sold through Co-ATVMs was negligible at all selected stations.
- ATVM scheme suffered from frequent failure of machines, lack of passenger awareness and other shortcomings. These shortcomings would automatically result in sub-optimal use of the machines.
- Zonal Railways did not effectively take up the matter of rectification/repair of ATVMs/Co-ATVMs with the firms.
- Facilitators (retired railway employees) were appointed to educate passengers to purchase tickets themselves. The number of tickets sold through facilitators showed an increasing trend. However, number of

tickets purchased by passengers themselves decreased significantly during 2015-16 to 2017-18.

- Passenger survey conducted by Audit revealed that 32 per cent passengers were not aware of ATVMs. 87 per cent of passengers stated that no awareness program was conducted by Railways. 58 per cent of surveyed passengers stated that the facilitators did not educate passengers the method of utilizing the ATVMs.

### **Para 2.3 Implementation of Train Management System in Mumbai suburban system**

Train Management System (TMS) was implemented in CR in 2008 to process and display information in real time. TMS was meant to regulate train movement through real-time monitoring and to provide timely information to the commuters through display boards/ announcements at all stations.

Audit observed that TMS was not implemented in all the sections of Mumbai Division. This restricted the availability of full benefits of the system for the entire Mumbai suburban system of Central Railway. The functions such as recording train movement in train register and feeding of train details in TMS were being done manually. Collection of information by the controller regarding actual departure and display of information also continued manually. Inadequate knowledge of Railway staff in operating the TMS led to non-compliance of basic input data and the system remained ineffective. The objectives envisaged were not achieved despite expenditure of ₹24.23 crore since December 2013.

### **Para 2.5 Non-recovery of penal interest from the Nationalized Banks for delayed payment of license fee**

Zonal Railways failed to incorporate suitable penalty clause in the agreement with Nationalized Banks for delayed payment of license fee. As a result, 12 Zonal Railway could not recover penal interest of ₹7.81 crore for the period from 2012-13 to 2017-18. Three Zonal Railways also failed to recover the license fee of ₹94 lakhs for installation of ATMs at different categories of railway stations.

### **Para 2.8 Non-levy/collection of shunting, demurrage and detention charges**

Railway Board's order of July 2014 stipulated that shunting charges would be leviable if a railway locomotive is utilized for load adjustment. Further, at the time of load adjustment in case of overloading, demurrage and detention charges to be levied. However, East Central Railway (ECR) did not levy and realise shunting charges of ₹8.08 crore from three coal sidings for the period February 2014 to March 2018. ECR also did not recover demurrage and detention charges of ₹21.51 crore from these three siding owners.

### **2.11 Non-levy of siding charges from the siding owners**

Railway Board prescribed (June 2010) criteria on which sidings were to be notified for charging freight on through distance basis (i.e. freight charge for distance from originating station to destination point in the

siding). Bokaro Thermal Power Siding of ECR and Gateway Rail Freight Limited siding of NR did not qualify for charging of freight on through distance basis. However, ECR and Northern Railway (NR) did not levy siding charges on these two sidings for the period from July 2013 to March 2018. This resulted in loss of ₹19.74 crore.

### **Para 3.1 Construction and utilization of Limited Height Subway (LHS)**

South East Central Railway (SECR) constructed 159 LHS at 159 locations in its three Divisions, Raipur, Bilaspur and Nagpur during 2011 to 2016. Audit reviewed the work of construction of Limited Height Subway (LHS) undertaken by SECR. Some of the salient audit findings are as follows:

- LHS were constructed without adhering to the prescribed norms, where density of train vehicle units (TVU) was very low. These were also constructed at locations very near to diversion Road Under Bridges/ Road Over Bridges (RUBs/ROBs), and thus were not used. As such, Railways incurred an expenditure of ₹18.63 crore without any fruitful results.
- Drainage system was either not constructed or partially constructed in many LHS. Proper feasibility study was not conducted before constructing these LHS. This led to water logging and the LHS remained closed/ were not utilized.
- Railways assigned the responsibility for maintenance related works to respective State Governments. However, the same was not acknowledged by the State Governments and the issue remained unresolved.

### **Para 3.2 Payment of Workers Welfare Cess by the Railways in compliance of Building and Other Construction Workers Welfare Cess Act**

Building and Other Construction Workers Welfare Cess Act and Building and Other Construction Workers Welfare Cess Rules were enacted and notified in August 1996 and March 1998 respectively. As an 'Employer' it was the responsibility of the Railways to ensure that the prescribed share (one per cent) of the cost of construction was set aside and deposited with the Worker's Welfare Boards. Review of works contracts in the Zonal Railways, the following was observed:

- Railways deducted and deposited only a part of this amount from the contractors in some cases.
- Cases were also seen where no recovery of Cess was made from the contractors.
- Cess recovered from the contractors was not deposited to the Workers Welfare Boards within the stipulated period in all the cases checked.
- ₹10.24 crore was short recovered from contractors, ₹2.28 crore recovered from contractors was not transferred to the Boards and

₹12.95 crore was outstanding for payment by Railways to the Boards.

### **Para 3.3 Short deduction of Jharkhand VAT from the contractors on-account bill resulting in avoidable liability**

With effect from 1 April 2012, Government of Jharkhand revised the rate of VAT from two to four per cent. The same was to be deducted in advance in respect of works contracts. Construction Organization, East Central Railway (ECR) did not deduct VAT at the revised rate in 26 works contracts awarded between December 2012 and April 2017. In 346 running on-account bills processed for payment, an amount of ₹12.14 crore was short-recovered from the contractors. Railways now have the liability to pay the same to the State Government as and when demanded.

### **Para 3.14 Execution of substandard bridge work by the contractor**

The work for rebuilding of the bridge across the river Ghaghra on Chhapra-Aunrihar section of Varanasi Division in North Eastern Railway was approved in September 2011. During execution of substructure work two wells developed tilts in excess of the permissible limit. However, the work was neither declared sub-standard nor the defects rectified by the contractor. Open Web Bridge Girders fabricated for the super-structure also remained unutilized, as the sub-structure work was yet to be completed. This led to blocking of capital amounting ₹67.54 crore.

### **Para 3.17 Non-realization of license fee for railway land licensed to private siding owners**

In December 2010, Railway Board instructed General Manager/ Central Railway to launch a drive for signing of all pending License Agreements. However, Central Railway did not execute land license agreements in respect of 14 sidings and no siding charges were levied and collected. In other nine sidings, where agreement was executed, no bills were raised by CR. Audit assessed an amount at ₹127.15 crore of license fee outstanding for recovery from these 23 sidings till 31 March 2018.

### **Para 4.1 Status of Commissioning and Utilization of Major Machineries and Plants procured by COFMOW in Indian Railways**

Central Organization for Modernization of Workshops (COFMOW) is responsible for modernization of Railway Workshops and Production Units. It prepares specification and procured Machinery and Plant for Zonal Railways/ Production Units. Audit examined the effective and timely installation and commissioning of M&Ps procured by COFMOW. Co-ordination mechanism between COFMOW and ZRs/PUs as well as utilization and performance of procured M&Ps were also analysed. Some of the salient audit findings are as follows:

- There were significant delays in receipt of machines by the users/ consignee. Only 12.65 per cent (63 out of 498) machines could be received by the users within one year from the date of placing indents.
- Railways did not ensure availability of necessary site and infrastructure in



many cases. As a result, machines could not be installed/ commissioned timely.

- Defects were noticed in a significant number of machines immediately after commissioning. In 17.07 per cent of the machines reviewed, defects developed within six months from the date of commissioning.
- There was lack of diligence on part of Railways to enforce the penal clause and the firms/ suppliers did not honor their responsibility of attending to the defects. A large number of machines were put to use after significant delays caused by the firm's/ supplier's inability to rectify the defects.
- COFMOW/ Zonal Railway also failed to timely reject the machines as a result of which the cost could not be recovered from the suppliers.
- A large number of machines could not be utilized optimally due to non-availability of adequate workload. There was shortfall in outturn of the newly installed machines with reference to the rated capacity.

#### **Para 4.2 Working of Rail Wheel Plant (RWP), Bela**

Rail Wheel Plant (RWP), Bela was established to meet the growing demand of wheels for rolling stock in the Railway. The Plant was established with a capacity to manufacture 1,00,000 cast steel BOX'N wagon wheel discs per annum. RWP has no Axle Shop and Wheel Set Assembly Shop. Loose wheels were dispatched to Rail Wheel Factory, Yelehanka (RWF) for assembly of wheel sets.

Before setting up RWP, the requirement of Indian Railways for loose wheels were being fulfilled by the then existing production unit, RWF and Durgapur Steel Plant. RWF itself was capable of handling production of wheels for Indian Railway requirements as a whole. RWP, Bela was however set up without adequate justification. During the past three years, the quantity for production assigned by the Railway Board to RWP, was much less than its installed capacity.

L&T was awarded the work of setting up of the plant. RWP got the Performance Test done through third party instead of the original firm. The Plant was declared as Production Unit without issue of Final Acceptance Certificate. The plant was declared operational without ensuring required Plant and Machinery in proper working condition. As a result, by the time production of wheel was started in RWP from 2015-16, the warranty of all the machines had expired.

RWP produced 47,901 wheels during the 2015-16 to 2017-18, but consumed all major input material as well as electricity way above the prescribed norms. This indicated, inefficiencies in the systems and processes being followed by RWP. RWP also did not take adequate action to address air, water and land pollution and disposal of hazardous waste.

#### **Para 4.3 Infructuous expenditure due to non-commissioning of cut to length machine**

Rail Coach Factory (RCF) imported a cut-to-length machine through COFMOW in October 2012. The machine was installed in May 2013.

Thereafter trials were conducted. However, the trials for commissioning were not successful as the machines was not capable to cut the coils to accuracy set out as per the bid and did not meet the standards set in the contract. In March 2014, RCF proposed to COFMOW to reject the machine. However, COFMOW chose to have protracted correspondence with the firm and did not follow the contractual provisions to reject the machine in a timely manner. They lost the opportunity to recover the cost of machine supplied by the firm. There is no legal remedy available with the Railways except for encashing the bank guarantee. The expenditure of ₹12.05 crore spent on purchase of the machine has thus become infructuous.

### **Para 5 Implementation of Train Protection Warning System (TPWS) in Indian Railways**

Railways have introduced a new technology, TPWS. The system is meant to provide automatic train protection to prevent accidents due to over speeding and passing signal at danger. TPWS aims to ensure safety of rolling stock, rail infrastructure and passengers. The system is based on European standards of European Train Control System (ETCS). The trials for implementation of TPWS on non-suburban and sub-urban sections were sanctioned by Railway Board between 1999 to 2005. Nineteen years from the sanction, the work on TPWS (ETCS level I) in Delhi – Agra section continues to be in trial stage. Railway Board revised the scope of the work a number of times. This resulted in increased cost and also shifted the timelines for the implementation of the system. Locomotives fitted with TPWS, were found in working condition only in 17.15 per cent of the total run of the trains during May 2016 to January 2018. The failure rate in track side equipment was also significantly high. However, in Chennai Central – Gummidipundi sub-urban section, the overall success rate was 70 per cent.

The trials were being going on for last 12 years in Delhi-Agra section. However, the technology/ product envisaged for train protection was yet to reach operationalization stage. The success of the trails was not assessed/ judged by Railways. However, Railway Board decided to implement TPWS in nine High Density Network and nine suburban sections in August 2016. Expenditure of ₹136.53 crore incurred on Delhi - Agra and Chennai Central - Gummidipundi sections, remained unfruitful. Audit further noted that in November 2017, Railway Board has decided to implement TPWS under ETCS level II. All the works under ETCS level I which were in progress have been put on hold since May 2018. The expenditure incurred has now become unfruitful.

### **Para 6.1 Installation and commissioning of Solar Power Plants in Indian Railways**

Indian Railways is the single largest consumer of electricity in India, consuming about 1.8 crore MWh per year. This is approximately two per cent of country's total power generation. Indian Railways planned to contribute to ecological sustainability. It has set for itself a target of meeting 10 per cent of its total energy demand through "Renewable" energy sources such as solar power and biomass by year 2020. As part of their Solar Mission, Railways have planned (2015-16) setting up of 1000 MW solar plants.

Audit noticed that Railways have been able to implement projects only to extent of 22.453 MW out of 295 MW planned till March 2018. No works of ground mounted solar plants were commissioned. Audit also noticed non-compliance of laid down instructions for setting up of solar plants.

#### **Para 6.2 Non-mixing/ blending of bio-diesel into HSD oil by Zonal Railways and non-achievement of Environmental objectives**

Railway Board's directives for blending/mixing bio-diesel to desired extent into HSD oil consumed by Diesel Locomotives was not complied by Zonal Railways. This led to avoidable extra expenditure of ₹103.67 crore during the period 2015-16 to 2017-18 on consumption of HSD oil. Besides, Railways also failed to contribute in efforts towards a cleaner and pollution free environment, which was objective of the Railway Board's decision.

#### **Para 6.3 Procurement of readymade Traction Motors at higher rate**

Chittranjan Locomotive Works (CLW) purchased Traction Motors from trade (market) at higher price as compared to the rates of in-house assembling of Traction Motors with readymade procured Rotor and Stators. CLW purchased 1647 Traction Motors during the year 2012-13 to 2018-19 (up to June 2018 except 2014-15) from market and incurred extra expenditure of ₹57.74 crore.

#### **Para 7.3 Management of Kumbh Mela, 2019 by Railways**

The Kumbh Mela, 2019 was held between 15 January 2019 and 4 March 2019 for 49 days. Railways play an integral role in ensuring the smooth organisation of the event by actively coordinating with the State Government. This included

- running special trains for dispersal of pilgrims,
- taking care of sanitation and minimum essential amenities at the railway premises,
- arranging temporary holding in station premises,
- facilitation in Mela area for Booking & Passenger Information; and
- ensuring the safety and comfort of pilgrims during the event.

Railways intimated a figure of 73.66 lakh evacuation of passengers during Mela period in Sameeksha Sangosthi of March 2019 held in Railway Board. Railways again intimated (August 2019) a figure of 73.41 lakh passengers based on the special trains and regular trains run during the mela period. Railways carried these passengers through the special and regular trains.

However, as per the records of commercial department, 31.21 lakh tickets were sold from Allahabad area (stations of NCR, NR and NER) during the mela period. Even if it is accepted, for arguments sake, that the sale of tickets figure may not be total evacuation as there would be ticket sale from other stations also for outward journey from Allahabad, ticketless

travel during the mela period etc., the gap of over 40 lakh passengers seems difficult to explain.

Audit noted that issues such as running of special trains, works related to passenger amenities and safety, medical facilities to passengers, waste management at station premises were not adequately addressed by Railways. These caused inconvenience to passengers coming for the Kumbh Mela. Temporary fencing at vulnerable locations (track & station entry point) were not completed. This led to cases of free movement of cattle on tracks and passengers trespassing.

Not addressing the above issues adequately may pose risk for the next mega event such as Magh Mela 2020 and Maha Kumbh Mela 2025. It is likely that in future the footfall and accumulation of crowd at Allahabad would only increase. Therefore, Railways need to address the above issues before the Magh Mela 2020.

Status report on Pending Action Taken Notes (ATNs) as on 30.11.2020					
Sl. No.	No. & Year of the Report	No. of paras/ C&AG report on which ATNs have been submitted	Detail 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 observation 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 of PAC
1	14, 15, 24, 29, 47, 48, & 53 of 2015	50/47		1	1
2	13, 14, 32 & 37 of 2016	45/41		2	
3	14, 22, 36, 45 & 13 of 2017	43/34		4	
4	1, 5, 17, & 19 of 2018	44/22		12	
5	10 & 19 of 2019	50/0	38	02	
6	2 & 8 of 2020	4/0	4		
	<b>Total</b>	<b>236/144</b>	<b>42</b>	<b>21</b>	<b>01</b>

^ 28 Paras are pending with Audit



# Financial Statements & Operating Statistics

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### Statistical Summary—Indian Railways

## Financial Statements

### Consolidated Profit and Loss Account: 2019-20

2018-19 (₹ in crore)	Supporting Statement		2019-20 (₹ in crore)	Supporting Statement
1,89,906.58	IA	<b>Gross Traffic Receipts</b>	1,74,356.60	IA
		<b>Ordinary Working Expenses</b>		
1,40,200.30	IB	(including Payment to Worked Lines)	1,50,211.21	IB
		<b>Contribution to Reserve Funds</b>		
44,580	IC	(Depreciation Reserve Fund and Pension Fund)	21,108.00	IC
1,84,780.30		Total Working Expenses	1,71,319.21	
5,126.28		Net Traffic Receipts (Operating Profit)	3,037.39	
(-)1352.42		Miscellaneous Transactions (Net)	(-)1,447.77	
3,773.86		<b>Net Revenue (Gross Profit)</b>	1,589.62	
		<b>Less</b>		
—	ID	(a) Dividend and other Payments to General Revenues	—	ID
—		(b) Payment to Deferred Dividend Liability	—	
\$ (+) 3,773.86		<b>Excess (+)/Shortfall (-)</b>	\$\$ (+)1,589.62	
\$ 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

2018-19 (₹ in crore)	IA		2019-20 (₹ in crore)	IA
		<b>Gross Traffic Receipts</b>		
		<b>Coaching Earnings</b>		
# —		<b>Passenger Traffic</b>	# —	
# —	51,066.65	Full fares	# —	50,669.09
		Less than full fares		
		<b>Parcels and other coaching traffic</b>		
1,619.03		Parcels	1,448.06	
138.57		Luggage	130.69	
2,716.86	4,474.46	Others	3,062.04	4,640.79
		<b>Goods Earnings</b>		
60,311.22		Coal, Coke etc.	60,668.50	
64,890.01		General Merchandise	52,977.06	
1,514.56		Other Traffic	979.68	
1,468.17		Wharfage and Demurrage	1,486.98	
-751.24	1,27,432.72	Less refunds	(-)2,624.33	1,13,487.89
	6,996.23	<b>Miscellaneous (Sundry) other earnings</b>		5,862.75
	1,89,970.06	<b>Total Gross Earnings</b>		1,74,660.52
	-63.48	Suspense (Bills receivable)		(-)303.92
		<b>Gross Traffic Receipts</b>		
	1,89,906.58	(Actually realised)		1,74,356.60

# Figures not available

2018-19 (₹in crore)	Percentage to total		2019-20 (₹in crore)	Percentage to total
	I B	<b>Ordinary Working Expenses</b>		I B
7,897.75	5.63	General Superintendence and Services	<b>8,292.35</b>	<b>5.52</b>
14,558.75	10.38	Repairs and Maintenance of Permanent Way and Works	<b>15,824.18</b>	<b>10.53</b>
6,604.53	4.71	Repairs and Maintenance of Motive Power	<b>6,686.87</b>	<b>4.45</b>
15,285.65	10.9	Repairs and Maintenance of Carriages and Wagons	<b>16,398.71</b>	<b>10.92</b>
8,040.99	5.74	Repairs and Maintenance of Plant and Equipment	<b>8,383.78</b>	<b>5.58</b>
13,771.43	9.82	Operating Expenses–Rolling Stock and Equipment	<b>17,468.30</b>	<b>11.63</b>
27,083.71	19.32	Operating Expenses–Traffic	<b>29,661.88</b>	<b>19.75</b>
30,393.80	21.68	Operating Expenses–Fuel	<b>28,999.77</b>	<b>19.31</b>
7,198.69	5.13	Staff Welfare and Amenities	<b>7,865.54</b>	<b>5.24</b>
7,091.34	5.06	Miscellaneous Working Expenses	<b>7,479.72</b>	<b>4.98</b>
2,323.38	1.66	Provident Fund, Pension and other Retirement Benefits	<b>3,633.75</b>	<b>2.42</b>
<u>1,40,250.02</u>		Gross Expenditure	<u><b>1,50,694.85</b></u>	
(-)49.72	(-)0.04	Suspense (Bills payable)	<b>(-)483.64</b>	<b>(-)0.32</b>
1,40,200.30	100.00	Ordinary Working Expenses (Actually disbursed)	<b>1,50,211.21</b>	<b>100.00</b>
				IC
	IC	<b>Contribution to Reserve Funds</b>		
300.00		Depreciation Reserve Fund	<b>400.00</b>	
44,280.00		Pension Fund	<u><b>20,708.00</b></u>	
<u>44,580</u>		Total Contribution to Fund	<u><b>21,108.00</b></u>	
<u>1,84,780.30</u>		<b>Total Working Expenses</b>	<u><b>1,71,319.21</b></u>	
				ID
	ID	<b>Dividend and Other Payments to General Revenue</b>		
	—	Dividend Payable (Current)		—
—		Payments in lieu of tax on Passanger Fares	—	
—	—	On account of assistance to Railway Safety Fund	—	—
	—	<b>Total Dividend payable</b>		—
	—	Deferred Dividend paid		—
	—	Net Dividend paid		—

## Balance Sheet

As on March 31,  
2019 (₹in crore)

#3,35,241.43

53,449.91

64,916.74

37,890.77

29,168.92

15,756.05

1,252.31

34,106.08

1,859.45

2,38,400.23

718.03

248.36

196.11

380.56

140.99

17.78

204.11

1,905.94

38,115.46

##23,450.36

54.64

61,620.47

49,64.45

419.62

5,384.07

6,42,552.14

### LIABILITIES

#### A. Loan Capital

advanced by General Exchequer #

#### B. Investment Financed from

Railway Capital Fund

Depreciation Reserve Fund

Development Fund

Railway Safety Fund

Special Railway Safety Fund

Revenue

Rashtriya Rail Sanraksha Kosh

Miscellaneous other sources

#### C. Reserves

Depreciation Reserve Fund

Development Fund

Pension Fund

Railway Capital Fund

Railway Safety Fund

Special Railway Safety Fund

Railway Debt Service Fund

#### D. Deposits

(i) State Railway Provident Fund

(ii) Miscellaneous Deposits

(iii) F. Loan & Advances

#### E. Current Liabilities

(i) Undischarged (Demands payable)

(ii) Outstanding dues payable to other

Government Departments

### Grand Total

\* Excludes: ₹16,636.14 crore of MTPs, ₹1,898.79 crore of circular Railways 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 ₹40,987.75 crore investment in DFCCIL and ₹16,026.70 crore investment in Udhampur- Srinagar - Baramula Project (National Investment)

\*\* Net liability recoverable to end of March 2020 includes ₹5.20 crore and ₹219.81 crore from Pakistan and Bangladesh Railways respectively.

# Excludes ₹15143.21 crore of MTPs, ₹1,026.98 crore of Circular Railways and ₹11,954.00 crore appropriation to SRSF and ₹30,000 crore appropriation to RRSK, ₹15,107.03 crore appropriation to RSF and includes ₹24062.87 crore 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 from Pakistan and Bangladesh Railways respectively

As on March 31,  
2020 (₹in crore)

\*3,78,468.48

53,449.91

65,272.79

39,028.17

36,054.67

15,756.05

1,252.31

49,129.96

1,995.93

2,61,939.79

833.55

519.29

-28,398.47

400.35

505.25

194.66

214.72

-25,730.65

39,341.70

\*\*29,762.66

59.80

69,164.17

5,251.48

3.25

5,254.73

6,89,096.52

As on March 31,  
2019 (₹in crore)

**II**  
**As on March 31,**  
**2020 (₹in crore)**

<b>F.</b>		<b>ASSETS</b>	
		<b>Block Assets</b>	
	<b>(i)</b>	<b>Fixed Assets</b>	
28,633.05		Land	<b>32,916.24</b>
3,19,717.82		Buildings and track	<b>3,15,922.46</b>
1,04,685.95		Rolling stock	<b>1,49,677.79</b>
60,319.88		Plant and equipment	<b>66,215.59</b>
—		Miscellaneous assets	<b>—</b>
<u>5,13,356.70</u>		<b>Total</b>	<b><u>5,64,732.08</u></b>
	<b>(ii)</b>	<b>Investments</b>	
2,979.37		Inventory	<b>3,029.14</b>
		Works in progress	
1,338.54		(Workshops manufacture)	<b>2,029.13</b>
(-)1,504.03		Miscellaneous Advance (Capital)	<b>-3,778.24</b>
<u>2,813.88</u>			<b><u>1,280.03</u></b>
	<b>(iii)</b>	<b>Investment in other undertakings</b>	
—		Shares in road transport undertakings	<b>—</b>
57,471.08		Other Government undertakings	<b>74,396.15</b>
<u>5,73,641.66</u>		<b>Total Block Assets</b>	<b><u>6,40,408.27</u></b>
<b>G.</b>		<b>Funds lying with Central Government</b>	
63,526.41		(Contra-items C and D)	<b>43,433.52</b>
<b>H.</b>		<b>Current Assets</b>	
1,934.74		Sundry Debtors	<b>1,735.62</b>
		Outstanding dues from other Government	
358.67		Departments	<b>896.80</b>
1,382.08		Outstanding Traffic Earnings	<b>1,661.09</b>
1,377.04		Cash in hand	<b>604.78</b>
331.54		Demands Recoverable	<b>356.44</b>
<u>6,42,552.14</u>		<b>Grand Total</b>	<b><u>6,89,096.52</u></b>



**Gross book value as on 31<sup>st</sup> March, 2019**

(₹in crore)

	Capital at-charge (Comprising loan/ account)	Capital Fund	DRF& DF including Improve- ment element	OLWR	U.S. Machin- ery and other Misc. Tools	Railway Safety Fund	RRSK	Special Railway Safety Fund	Total
<b>Land</b>	<b>27,161.61</b>	<b>441.51</b>	<b>369.10</b>	<b>3.83</b>	<b>-</b>	<b>568.63</b>	<b>58.89</b>	<b>29.48</b>	<b>28,633.05</b>
<b>Structural Engineering Works</b>									
Stations and offices	52,746.17	8,378.72	21,393.90	405.75	0.27	3,943.18	3,165.49	561.84	90,595.32
Workshops and stores buildings	12,639.94	396.82	4,059.70	126.29	-	386.71	286.24	38.79	17,934.49
Residential buildings	6,597.70	365.55	4,192.31	75.80	-	687.77	170.47	45.27	12,134.87
<b>Track</b>									
Formation	47,274.88	7,582.96	10,189.20	55.60	0.01	8,683.75	6,342.05	1,558.79	81,687.24
Permanent way materials	32,057.84	4,598.27	21,209.55	146.39	-	4,816.27	16,053.05	6,570.15	85,451.72
Bridges	14,481.41	1,671.34	6,003.43	36.09	-	5,521.89	2,705.61	1,494.41	31,914.18
<b>Rolling Stock</b>									
Locomotives and spare boilers	25,104.42	10,039.84	8,663.39	3.80	-	17.87	1,158.15	1,086.84	46,074.31
Carriages including Rail Cars and E.M.U. Stock	17,790.92	5,044.59	5,226.90	0.64	-	4.39	868.33	686.02	29,621.79
Wagons	10,692.43	4,800.48	3,625.29	1.04	-	1.02	349.19	985.73	20,455.18
Ferries	191.25	81.95	12.28	0.01	-	3.15	-	-	288.64
Rail-cum-road services	2,484.09	1,345.82	1,053.96	21.54	0.23	903.06	505.29	63.09	6,377.08
Road motor cars and carriers for public traffic	-48.45	136.46	-14.25	-	-	1,715.63	79.56	-	1,868.95
<b>Equipment (Machinery and Plants etc.) Other than Rolling Stock</b>	<b>31,777.92</b>	<b>4,459.36</b>	<b>16,799.16</b>	<b>375.51</b>	<b>3.01</b>	<b>1,915.60</b>	<b>2,353.68</b>	<b>2,635.64</b>	<b>60,319.88</b>
<b>Suspense (Floating Assets like inventories or stores holdings)@</b>									
Stores suspense	2,945.92	-	23.57	-	-	-	9.88	-	2,979.37
Manufacture suspense	1,338.54	-	-	-	-	-	-	-	1,338.54
Miscellaneous advances	12,789.71	20.52	0.01	-	1,855.92	-	-	-	14,666.16
<b>Investment in shares of Govt. &amp; Other Commercial Undertaking- Road service.</b>	<b>21,654.54</b>	<b>2,984.39</b>	<b>0.01</b>	<b>0.01</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24,638.95</b>
<b>Investment in shares of Govt. Commercial and Public Undertaking</b>	<b>31,730.79</b>	<b>1,101.33</b>	<b>-</b>	<b>0.01</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>32,832.13</b>
<b>Total</b>	<b>3,51,411.63</b>	<b>53,449.91</b>	<b>1,02,807.51</b>	<b>1,252.31</b>	<b>1,859.44</b>	<b>29,168.92</b>	<b>34,106.08</b>	<b>15,756.05</b>	<b>5,89,811.85</b>

Note: @ Includes ₹15,143.21 crore of Metropolitan Transport Projects (Raliways), ₹1026.98 crore of Circular Railways, ₹16,026.70 crore of Udhampur- Srinagar - Baramula Project (National Investment), ₹24,062.87 crore Capital Investment in DFFCCIL and excludes ₹11,954.00 crore appropriation to SRSF.

Gross book value as on 31<sup>st</sup> March, 2020

(₹in crore)

	Capital at-charge (Compr- ing loan/ account)	Capital Fund	DRF& DF including Improve- ment element	OLWR	U.S. Machin- ery and other Misc. Tools	Railway Safety Fund	RRSK	Special Railway Safety Fund
<b>Land</b>	<b>31,421.38</b>	<b>441.51</b>	<b>369.09</b>	<b>3.83</b>	<b>—</b>	<b>539.50</b>	<b>111.45</b>	<b>29.48</b>
<b>Structural Engineering Works</b>								
Stations and offices	21,649.57	1,084.82	19,426.59	319.47	—	2,352.66	3,107.78	154.01
Workshops and stores buildings	13,375.91	403.25	4,284.58	126.29	—	477.95	454.43	38.79
Residential buildings	6,848.56	330.50	4,331.55	75.80	—	863.09	284.53	45.27
<b>Track</b>								
Formation	60,948.39	9,287.18	12,292.63	125.86	0.28	12,382.03	9,485.81	1,873.20
Permanent way materials	33,144.38	4,598.44	21,283.37	146.39	—	6,074.75	22,826.49	6,570.15
Bridges	15,118.33	1,555.74	6,036.51	36.09	—	6,707.57	3,899.06	1,494.41
<b>Rolling Stock</b>								
Locomotives and spare boilers	57,066.98	15,904.89	8,767.68	19.81	—	1,044.04	2,004.07	1,180.26
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
Wagons	12,859.76	4,750.48	3,638.12	1.04	—	1.02	490.78	985.73
Ferries	189.82	81.95	12.28	0.01	—	3.15	95.75	—
Rail-cum-road services	2,532.34	1,017.84	1,071.08	21.56	0.23	1,569.25	903.82	63.09
Road motor cars and carriers for public traffic	660.09	136.46	-43.23	—	—	1,828.35	27.70	—
<b>Equipment (Machinery and Plants etc.) Other than Rolling Stock</b>	<b>34,615.02</b>	<b>4,640.14</b>	<b>17,568.27</b>	<b>375.51</b>	<b>3.01</b>	<b>2,206.92</b>	<b>4,171.09</b>	<b>2,635.64</b>
<b>Suspense (Floating Assets like inventories or stores holdings)@</b>								
Stores suspense	2,985.17	—	23.57	—	—	—	20.41	—
Manufacture suspense	2,029.13	—	—	—	—	—	—	—
Miscellaneous advances	12,743.74	20.53	0.01	—	1,992.40	—	—	—
<b>Investment in shares of Govt. &amp; Other Commercial Undertaking- Road service.</b>	<b>38,579.42</b>	<b>2,984.39</b>	<b>0.01</b>	<b>0.01</b>	<b>—</b>	<b>—</b>	<b>0.20</b>	<b>—</b>
<b>Investment in shares of Govt. Commercial and Public Undertaking</b>	<b>31,730.79</b>	<b>1,101.33</b>	<b>—</b>	<b>0.01</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>Total</b>	<b>3,97,003.41</b>	<b>53,449.91</b>	<b>1,04,300.96</b>	<b>1,252.31</b>	<b>1,995.93</b>	<b>36,054.67</b>	<b>49,129.96</b>	<b>15,756.05</b>

Note: @ Includes ₹16,636.14 crore in metropolitan Transport Projects (Railways), ₹1,898.79 crore of Circular Railways, ₹24,062.87 crore of Udhampur - Srinagar- Baramulla Project (National Investment), ₹32,933.94 crore investment in DFCCIL and excludes ₹11,954.00 crore appropriation of SRSF.

**Railways' Contribution  
to the Plan:  
Sources/Application  
of Funds**

2018-19  
(₹in crore)

3,773.86

500.00

—

—

(-)-1838.23

—

3,023.86

155.62

5,615.11

23,876.10\*

—

—

—

13,000.00\*\*

5,000.00

41,876.10

47,491.21

\*Excludes ₹1186.87 crore (MTP),  
₹0.354 crore (Circular Railways),  
₹9774.36 crore (DFCCIL) \*\*₹10,000  
crore Trfd from RSF to RRSK.

**SOURCE OF FUNDS**

**Internal Resources Generation**

Excess(+) for the year

**Contribution from Revenues and  
Capital to Reserve Funds**

Depreciation Reserve Fund

Spl. Railway Safety Fund

Capital Fund

Pension Fund (Net)

Railway Safety Fund

RRSK

Interest on Fund Balances

Total Internal Cash Balances

**Borrowing From General Revenues  
(Dividend Dispersed with)**

(a) On Capital account

(b) As Temporary Loans:

(i) Reserve Fund

(ii) Development Fund

(iii) Capital Fund

**Contribution From General  
Revenues**

**(Non-interest bearing)**

(a) On account of SRSF

(b) On account of RSF

(c) On account of RRSK

Total contribution received from the  
General Revenues

**Total Source of Funds**

**2019-20  
(₹in crore)**

**1,589.62**

**600.00**

**—**

**—**

**-27,879.89**

**—**

**200.76**

**-625.52**

**-26,115.04**

**28,666.88\***

**—**

**—**

**—**

**—**

**17,250\*\***

**5,000.00**

**50,916.88**

**24,801.84**

**\*Excludes ₹16924.88 crore  
(DFCCIL). \*\*₹10000 crore Trfd  
from RSF to RRSK.**

2018-19 (₹in crore)		IV 2019-20 (₹in crore)
	<b>APPLICATION OF FUNDS</b>	
	<b>Acquisition of new assets and replacement of existing assets</b>	
	Acquisition Charged to:	
23,876.10	Capital	28,666.88
—	Railway Capital Fund	—
1,108.00	Development Fund	1,137.40
13,005.82	Railway Safety Fund	16,885.74
18,015.33	RRSK	15,023.88
—	Open Line Works (Revenue)	—
534.03	Replacement Charged to Depreciation Reserve Fund	523.80
<u>56,539.28</u>	Total Investment	<u>62,237.70</u>
	<b>Repayment of loans obtained for:</b>	
—	Development Fund	—
—	Railway Capital Fund	—
	<b>Interest paid on temporary loans</b>	
—	Development Fund	—
—	Railway Capital Fund	—
(-)2071.93	Increase(+)/Decrease(-) in Funds Balances	(-)27,636.61
<u>54,467.35</u>	<b>Total Application of Funds</b>	<u>34,601.08</u>
	Note:	
3,977.88	Opening balance in all Funds as on 1 <sup>st</sup> April	1,905.99
1,905.95	Closing balance as on 31 <sup>st</sup> March	(-)25,730.62
(-)2,071.93	Increase(+)/Decrease (-) in balance comprised of:	(-)27,636.61
5.94	Depreciation Reserve Fund	115.51
(-)334.78	Development Fund	270.89
(-)1,777.59	Pension Fund	(-)28,594.57
20.69	Railway Capital Fund	19.79
-5.82	Railway Safety Fund	364.26
8.53	RRSK	176.88
11.10	Debt Service Fund	10.62
<u>(-)2071.93</u>	<b>Total</b>	<u>(-)27,636.61</u>

**Capital-at-Charge**

2018-19  
(₹in crore)

**Capital Liabilities**

Capital-at-charge as on 31<sup>st</sup> March

Less:

Capital qualifying for exemption  
from payment of Dividend

Capital on which Dividend is  
payable

Total amount of dividend and other  
payments to General Revenues

Average borrowing rate or  
least rate as on 31<sup>st</sup> March (%)

**Notes:**

**The details of Capital qualifying  
for exemption from payment of  
Dividend are as follows:**

50% of the net Capital outlay during  
the year

Capital contributed by the  
companies

**Break-up of Capital liable for  
payment of Dividend at different  
rates:**

Capital upto 31<sup>st</sup> March, 2018 on  
which

Dividend is paid at 0%

Capital on residential buildings  
payable at 0%

Capital relating to New Lines other  
than those taken up on other than  
financial considerations taken on or  
after 1<sup>st</sup> April, 1955

Total Capital on which Dividend is  
payable

\*In 2018-19 and 2019-20 no  
dividend is payable

V (a)

2019-20  
(₹in crore)



## Subsidy from General Revenues

2018-19  
(₹in crore)

\* **Subsidy on:**

V (b)  
**2019-20**  
(₹in crore)

Capital cost of Strategic Lines  
Full cost of Kiriburu-Bimalgarh and Sambhalpur-Titagarh  
Capital-at-charge on non-strategic portion of Northeast Frontier Railway  
Capital cost of unremunerative Branch Lines  
  
Capital cost of New Lines constructed on or after April 1, 1955 on other than financial considerations  
Capital cost of New lines other than those constructed on or after April 1, 1955 on other than financial considerations  
Outlay on works-in-progress for a period of 3 years  
Works in progress: Residential buildings  
Capital cost of ferries  
Capital cost of welfare buildings  
Gauge Conversion on strategic consideration  
  
Arrears adjustment  
**Total**

\*Commenced on April 1, 1979, as per RCC recommendations there is no subsidy during the year 2019-20.

## Loans for Development Fund and Railway Capital Fund

V (c)

Particulars	Development Fund		Railway Capital Fund		(₹in crore) Total	
	2018-19	2019-20	2018-19	2019-20	2018-19	2019-20
Opening balance	—	—	—	—	—	—
Loans taken during the year	—	—	—	—	—	—
Repayment during the year	—	—	—	—	—	—
Closing balance	—	—	—	—	—	—

## Operating Statistics Assets

VIA

2018-19			Route/Track-kms. (000) Route kms.	2019-20		
B.G.	M.G.	Total including N.G.		B.G.	M.G.	Total including N.G.
34.32	—	34.32	Electrified	39.33	—	39.33
62.89	2.84	67.42	Total	63.95	2.4	67.96
59.14	—	59.14	Running track kms	67.45	—	67.45
91.37	2.93	95.98	Electrified	95.16	2.46	99.24
76.96	—	76.96	Total	86.25	—	86.25
118.60	3.12	123.54	Total track kms	121.98	2.65	126.37
7018	140	7321	Electrified	7,023	140	7,325
—	26	39	Number of stations	—	26	39
4	—	113	Rolling Stock (in units)	4	—	87
5882	50	5936	Locomotives	5,750	57	5,811
6059	—	6059	Steam	6,792	—	6,792
54340	481	55258	Diesel Hydraulic & Mechanical	56,658	458	57,060
6538	—	6538	Diesel Electric	7,345	—	7,345
3901	—	3901	Electric	4,045	—	4,045
1868	8	1876	Passenger Carriages	1,785	8	1,793
10	5	24	Loco hauled	9	5	23
666.1*	0.1	666.2*	E.M.U. Trailers	732	0.1	732.1
93.8	—	93.8	E.M.U. Motor Coaches	100.4	—	100.4
0.4	0.7	2.5	DEMU / DHMU	0.2	0.4	2.1
3236.8	25.4	3277.4*	Rail Cars	3,331.40	24.3	3,370.10
1292.1	—	1292.1	Air-conditioned	1,433.70	—	1,433.70
593.5	—	593.5	Air-conditioned Chair Car	639.10	—	639.1
164.5	0.5	165.00	1 <sup>st</sup> Class	156.5	0.5	157.00
0.7	0.4	1.3	2 <sup>nd</sup> Class	0.7	0.4	1.2
4383	50	4486	E.M.U. Trailers (all classes)	4,449	50	4,549
1810	82	1920	E.M.U. Motor Coaches (all classes)	1,738	58	1,823
67	1	68	DEMU / DHMU	66	1	67
182.2	0.1	182.3	Rail Cars (all classes)	187.2	0.1	187.3
24.5	0.2	25.7	Other Coaching Vehicles (in units)	23.5	0.2	23.7
14.5	0.1	14.6	(including Brake Vans)	15	0.1	15.1
—	—	—	Railway Service Vehicles (in units)	—	—	—
—	—	—	Goods wagons (000)	—	—	—
			Covered wagons			
			Open wagons			
			Live-stock wagons, wagons for explosives, timber rail wagons, tank and misc. wagons			
			Departmental wagons (including brake vans)			
			Ferry Stock			
			Power Vessel			
			Dump Craft			

\*revised

(Figures in million)

Operation	2018-19				2019-20			
B.G.	M.G.	Total	Train-kms.		B.G.	M.G.	Total	
		including	Passenger and proportion of mixed				including	
		N.G.					N.G.	
—	0.02	0.03	Steam		—	0.02	0.03	
307.67	1.63	311.62	Diesel		276.62	2.54	280.21	
327.50	—	327.50	Electric		348.79	—	348.79	
90.10	—	90.10	Electric Multiple Units		88.70	—	88.70	
25.57	—	25.57	MEMU		27.15	—	27.15	
—	—	—	DHMU		—	—	—	
23.00	—	23.00	DEMU		23.34	—	23.34	
—	—	0.05	Rail Cars		—	—	0.05	
0.11	0.08	0.19	Rail Bus		0.08	0.04	0.12	
			Goods and proportion of mixed					
—	—	—	Steam		—	—	—	
152.61*	—	152.61*	Diesel		139.29	—	139.29	
260.39*	—	260.39*	Electric		256.47	—	256.47	
			Departmental					
—	0.01	0.01	Steam		—	—	0.01	
2.07*	—	2.07*	Diesel		1.32	—	1.32	
0.73	—	0.73	Electric		0.52	—	0.52	
0.24	—	0.24	Electric Multiple Units		0.20	—	0.20	
0.40	—	0.40	MEMU		0.37	—	0.37	
			Shunting and other engine kms.					
			Shunting					
—	—	—	Steam		—	—	—	
48.66	0.08	49.14	Diesel		45.92	0.01	50.82	
13.26*	—	13.26	Electric		14.79	—	14.79	
			Light, assisting required, assisting not required, siding and departmental					
—	—	—	Steam		—	—	—	
152.52*	0.04*	157.54*	Diesel		171.48	0.05	171.53	
222.14*	—	222.14*	Electric		256.29	—	256.29	
			Engine kms. (excl. EMUs & Rail Cars)					
			Passenger and proportion of mixed					
—	0.02	0.05	Steam		—	0.02	0.04	
342.64	1.76*	347.10	Diesel		308.56	1.64	310.20	
335.78	—	335.78	Electric		357.30	—	357.30	
			Goods and proportion of mixed					
—	—	0.01	Steam		—	—	—	
322.23	—	322.23	Diesel		325.04	—	325.04	
487.21*	—	487.21*	Electric		519.02	—	519.02	
			Departmental					
—	0.01	—	Steam		—	0.01	—	
3.03*	0.01	3.48	Diesel		1.77	0.07	1.84	
0.75	—	0.75	Electric		0.54	—	0.54	
			Total					
—	0.03	0.06	Steam		—	0.03	0.05	
670.32*	1.76	672.08*	Diesel		635.37	1.65	637.02	
823.74*	—	823.74*	Electric		876.68	—	876.87	
			Vehicle kms.					
22,990.84	17.78	23,037.82	Coaching Vehicles		22,827.61	22.55	22,874.56	
3,586.44	—	3,586.44	Electric Multiple Units Coaches		3,593.36	—	3,593.36	
799.88	—	799.88	MEMU		944.41	—	944.41	
—	—	—	DHMU		—	—	—	
804.78	—	804.78	DEMU		767.00	—	767.00	
—	—	0.05	Rail Cars		—	—	0.05	
0.11	0.80	0.19	Rail Bus		0.08	0.04	0.12	
			Wagon kms.					
12,565.50	—	12,565.50	Loaded		11,782.01	—	11,782.01	
19,364.07	—	19,364.07	Total		18,845.72	—	18,845.72	
64.9	—	64.9	% age of loaded to total		62.50	—	62.50	

\*revised

# Traffic and Earnings

2018-19		
B.G.	M.G.	Total including N.G.
310.15	—	310.15
4474.16	—	4474.16
4784.31	—	4784.31
4.41	—	4.41
29.82	0.03	29.86
105.38	—	105.38
4.41	0.01	4.46
34.85	—	34.94
357.05	0.69	357.75
14.22	—	14.22
1,126.10	0.25	1,126.98
1,952.25	12.55	1,976.74
3,628.49	13.54	3,654.75
8,412.80	13.54	8,439.06
9,949.77	—	9,949.77
1,36,728.06	—	1,36,728.06
1,46,677.84	—	1,46,677.84
2,493.94	—	2,493.94
23,231.67	20.63	23,252.30
87,207.43	—	87,207.43
392.43	0.44	396.97
13,263.75	—	13,290.59
2,90,539.68	601.28	2,91,143.79
3,523.14	0.32	3,523.46
3,69,013.13	731.47	3,69,835.46
2,16,892.00	1,831.10	2,19,352.49
10,06,557.17	3,185.23	10,10,496.41
11,53,235.01	3,185.23	11,57,174.25
32.10	—	32.10
30.60	—	30.60
30.70	—	30.70
645.90	—	565.50
834.80	360.00	778.80
926.70	—	827.50
86.80	14.90	88.90
452.80	—	380.30
843.90	361.80	813.80
279.20	198.80	247.70
351.40	197.00	328.20
104.50	52.50	111.00
276.40	79.00	276.50
138.80	79.00	137.10

\*revised

# Passenger Traffic Passengers originating (millions)

Suburban	
1 <sup>st</sup> Class	
2 <sup>nd</sup> Class	
Total Suburban	
Non-suburban	
A.C. First Class	
A.C. Sleeper	
A.C. 3-Tier	
1 <sup>st</sup> Class	
A.C. Chair Car	
Sleeper Class	
Mail/Express	
Ordinary	
2 <sup>nd</sup> Class	
Mail/Express	
Ordinary	
Total Non-suburban	
Total Suburban and Non-suburban	
Passenger kms. (millions)	
Suburban	
1 <sup>st</sup> Class	
2 <sup>nd</sup> Class	
Total Suburban	
Non-suburban	
A.C. First Class	
A.C. Sleeper	
A.C. 3-Tier	
1 <sup>st</sup> Class	
A.C. Chair Car	
Sleeper Class	
Mail/Express	
Ordinary	
2 <sup>nd</sup> Class	
Mail/Express	
Ordinary	
Total Non-suburban	
Total Suburban and Non-suburban	
Average lead (kms.)	
Suburban	
1 <sup>st</sup> Class	
2 <sup>nd</sup> Class	
Total Suburban	
Non-suburban	
A.C. First Class	
A.C. Sleeper	
A.C. 3-Tier	
1 <sup>st</sup> Class	
A.C. Chair Car	
Sleeper Class	
Mail/Express	
Ordinary	
2 <sup>nd</sup> Class	
Mail/Express	
Ordinary	
Total Non-suburban	
Total Suburban & Non-suburban	

# VIC 2019-20 B.G. M.G. Total including N.G.

314.76	—	314.76
4,282.25	—	4,282.25
4,597.01	—	4,597.01
3.92	—	3.92
29.83	0.00	29.83
113.45	—	113.45
4.12	0.02	4.39
34.13	—	34.22
342.82	0.00	342.74
27.64	—	37.64
1,080.60	3.20	1,081.21
1,835.79	7.02	1,851.28
3,472.22	7.44	3,488.70
8,069.24	7.44	8,085.73
9,937.74	—	9,937.74
12,192.48	—	12,192.48
1,37,130.22	—	1,37,130.22
2,312.83	—	2,312.83
22,771.38	—	22,771.38
95,592.73	—	95,592.73
336.07	2.56	350.20
10,660.90	—	10,660.90
2,67,621.79	0.17	2,67,629.12
1,848.14	0.03	1,848.14
3,83,781.40	60.88	3,83,858.41
1,27,930.19	410.12	1,28,575.92
9,12,855.53	473.74	9,13,607.82
10,49,985.76	473.74	10,50,738.05
31.60	—	31.60
29.70	—	29.70
29.80	—	29.80
588.90	—	589.40
762.30	—	763.30
842.20	—	842.60
81.50	25.00	79.70
312.30	—	311.70
780.10	855.00	780.80
66.80	—	66.90
354.60	176.90	355.00
69.60	56.90	69.50
262.50	61.90	261.90
130.00	61.90	129.90

## Traffic and Earnings

2018-19			2019-20			VIC
B.G.	M.G.	Total including N.G.	Passenger Earnings (₹crore)	B.G.	M.G.	Total including N.G.
			Suburban			
422.12	—	422.12	1 <sup>st</sup> Class	433.00	—	433.00
2,390.63	—	2,390.63	2 <sup>nd</sup> Class	2,410.08	—	2,410.08
2,812.75	—	2,812.75	Total Suburban	2,843.08	—	2,843.08
			Non-suburban			
695.20	—	695.20	A.C. First Class	632.82	—	632.82
3,862.43	1.82	3,864.25	A.C. Sleeper	3,778.87	—	3,778.87
11,223.22	—	11,223.22	A.C. 3-Tier	12,369.94	—	12,369.94
26.86	0.18	27.25	1 <sup>st</sup> Class	15.51	2.09	29.30
1,891.03	—	1,892.61	A.C. Chair Car	1,751.07	—	1,753.78
			Sleeper Class			
14,313.74	7.21	14,321.03	Mail/Express	13,551.10	0.08	13,551.60
146.19	0.01	146.20	Ordinary	89.54	0.02	89.54
			2 <sup>nd</sup> Class			
11,407.49	9.10	11,418.01	Mail/Express	12,559.79	2.34	12,563.05
4,628.59	22.44	4,666.13	Ordinary	3,038.28	12.40	3,057.01
48,194.74	40.76	48,253.90	Total Non-suburban	47,787.02	16.83	47,826.01
51,007.49	40.76	51,066.65	Total Suburban and Non-suburban	5,06,301.11	16.83	50,669.09
			<b>Average rate/passenger km. (paise)</b>			
			Suburban			
42.40	—	42.40	1 <sup>st</sup> Class	43.6	—	43.6
17.50	—	17.50	2 <sup>nd</sup> Class	189	—	18.9
19.20	—	19.20	All Classes (suburban)	20.7	—	20.7
			Non-Suburban			
278.80	—	278.80	A.C. First Class	273.6	—	273.6
166.30	88.30	166.20	A.C. Sleeper	166	—	166
128.70	—	128.70	A.C. 3-Tier	129.4	—	129.4
68.40	398.40	68.60	1 <sup>st</sup> Class	46.2	813.1	83.7
142.60	—	142.40	A.C. Chair Car	164.3	—	164.4
			Sleeper Class			
49.30	12.00	49.20	Mail/Express	50.6	46.8	50.6
41.50	35.20	41.50	Ordinary	48.4	66.7	48.4
			2 <sup>nd</sup> Class			
30.90	12.40	30.90	Mail/Express	32.7	38.4	32.7
21.30	12.30	21.30	Ordinary	23.7	30.2	23.8
47.90	12.80	47.80	All Classes (Non-suburban)	52.3	35.5	52.3
44.20	12.80	44.10	Total Suburban and Non-suburban	48.2	35.5	48.2
			<b>Freight Traffic</b>			
			Tonnes originating (000's)			<b>Total of BG</b>
12,21,478	—	12,21,478.00	Revenue earning	12,08,415.00	—	12,08,415.00
3,809	—	3,809.00	Non-revenue	3,809.00	—	3,809.00
12,25,287	—	12,25,287.00	Total	12,12,224.00	—	12,12,224.00
			Net tonne kms. (millions)			
7,38,523	—	7,38,523.00	Revenue-earning	7,07,665.00	—	7,07,665.00
399	—	399.00	Non-revenue	369.00	—	369.00
7,38,923	—	7,38,923.00	Total	7,08,034.00	—	7,08,034.00
1,22,580.31		1,22,580.31	Earnings from carriage of goods traffic	1,11,472.30		1,11,472.30
			Average lead (kms.)			
605	—	605.00	Revenue-earning	586.00	—	586.00
105	—	105.00	Non-revenue	97.00	—	97.00
603	—	603.00	Total	584.00	—	584.00
165.98	—	165.98	Average rate/tonne km. (paise)	157.52	—	157.52

\*revised



## Utilisation of Rolling Stock

2018-19			Vehicle and Wagon usage	2019-20			VID
B.G.	M.G.	N.G.		B.G.	M.G.	N.G.	
			Vehicle kms./Vehicle day				
533	115	83	Passenger vehicles	534	114	77	
415	4	79	Other coaching vehicles	439	9	49	
203.9	—	—	Wagon kms./wagon day	188.7	—	—	
5.00	—	—	Wagon turn-round (days)	5.30	—	—	
7,747	—	—	Net tonne kms./wagon day	7057	—	—	
60.8	—	—	Average wagon load during the run (tonnes) (in terms of 8-wheelers)	61.3	—	—	
			<b>Average speed of goods trains</b> (kms. per hour)				
			Through goods trains				
—	—	—	Steam	—	—	—	
22.3	—	—	Diesel	23.4	—	—	
23.8	—	—	Electric	25.4	—	—	
23.2	—	—	All Traction	23.6	—	—	
			All goods trains				
			Steam	—	—	—	
22.3	—	—	Diesel	23.4	—	—	
23.8	—	—	Electric	25.4	—	—	
23.2	—	—	All Traction	23.6	—	—	
			<b>Engine usage</b>				
			Engine kms./day/engine on line				
—	10	16	Steam	—	10	17	
357	105	75	Diesel	351	186	61	
355	—	—	Electric	356	—	—	
			Net tonne kms./goods loco day on line				
—	—	—	Steam	—	—	—	
2,89,419	—	—	Diesel	240,027	—	—	
3,89,070	—	—	Electric	293,461	—	—	
			Net tonne kms./goods loco day in use				
—	—	—	Steam	—	—	—	
3,11,817	—	—	Diesel	255,927	—	—	
3,88,769	—	—	Electric	316,362	—	—	
			Net tonne kms./goods engine hour (All traction)	14,390	—	—	
			<b>Average load of goods trains</b> <b>(tonnes)</b>				
1,738	—	—	Net Load	1,728	—	—	
2,925	—	—	Gross load (incl. weight of engine)	2,990	—	—	

\*revised

## General

				2019-20				
B.G.	2018-19 M.G.	Total including N.G.	Density- Train kms./running	B.G.	M.G.	Total including N.G.		
35.7*	1.6*	34.7*	track kms./day	33.40	1.40	32.09		
23.2*	1.5*	22.2*	Passenger train kms./ running track kms./day	22.00	1.40	21.20		
12.5*	—	11.9*	Goods train kms./ running track kms./day	11.40	—	11.00		
<b>Repair of Rolling Stock (ineffective %age)</b>								
7.83	4.62	7.91	Locomotives	7.54	5.08	7.63		
6.07	4.74	6.05	Passenger Carriages	6.14	6.92	6.15		
5.18	—	5.02	Other Coaching Vehicles	5.08	—	5.30		
14.4	—	14.4	E.M.U. Coaches	12.20	—	12.20		
3.61	100.00	3.62	Wagons	3.07	79.10	3.07		
<b>Fuel consumption by locos</b>								
—	—	1	Coal (000 tonnes)	—	—	1.00		
2740	4	2749	Diesel oil (000 kilolitres)	2,373.00	2.00	2,380.00		
12062	—	12062	Electricity (million kwt. hrs.)	18,409.00	—	18,409.00		
1276	—	1276	Electricity consumed by E.M.U. suburban services (million kwt. hrs.)	1,268.00	—	1,268.00		
<b>Consumption/1,000 gross tonne km.</b>								
—	—	536.4	Passenger and proportion of mixed Coal (kg.)	—	—	536.40		
3.74	6.04	3.75	Diesel oil (litres)	3.59	5.84	3.60		
18.9	—	18.9	Electricity (kwt. hrs.)	18.40	—	18.40		
—	—	—	Goods and proportion of mixed Coal (kg.)	—	—	—		
1.97	—	1.97	Diesel oil (litres)	—	—	—		
5.83	—	5.83	Electricity (kwt. hrs.)	1.92	—	1.92		
				6.13	—	6.13		
Groups A&B	Group C	Group D	Total	Personnel	Groups A&B	Group C	Group D	Total
				Number (000)				
11.87	1,010.94	128.06	1,150.87	Open line	14.17	1,165.15	—	1,179.32
2.22	13.56	2.39	18.17	Construction	1.74	13.89	—	15.63
0.86	36.92	2.51	40.29	Production Units	1.00	41.52	—	42.52
1.61	14.37	1.55	17.53	Railway Board and other Railway offices	1.59	14.53	—	16.12
16.56	1,075.79	134.51	1,226.86	Total	18.50	1,235.09	—	1,253.59
4,978.42	1,21,399.96	7,985.79	1,34,364.17	Total wage (₹in crore)	6,159.14	1,48,149.26	—	1,54,214.71
3,024.37	1,129.67	599.05	1,097.37	Average annual wage/employee (₹in '000)	3,415.48	1,199.50	—	1,230.64
				<b>Stores purchases (₹in crore)</b>				
	61,078			Indigenous		63,052		
				Imported				
	677			Direct		486		
	379			Purchased in India		305		
	62,134			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	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	As on March 31
<b>Assets</b>																	<b>Assets</b>
@ 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	1,61,447.97	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	3,74,921.58	@ 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	2,57,958.35	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	Total Investment (₹ in crore)
<b>Route kilometres—</b>																	<b>Route kilometres—</b>
Electrified	388	748	3,706	5,345	9,968	14,856	19,008	20,275	20,884	21,614	22,224	23,555	25,367	29,228	34,319	39,329	Electrified
Total	53,596	56,247	59,790	61,240	62,367	63,028	64,173	64,266	65,080	65,426	65,600	66,252	66,918	66,935	67,415	67,956	Total
<b>Running Track kms—</b>																	<b>Running Track kms—</b>
Electrified	937	1,752	7,447	10,474	18,954	27,937	36,007	38,669	38,524	39,661	41,038	43,357	48,239	51,242	59,142	67,452	Electrified
Total	59,315	63,602	71,669	75,860	78,607	81,865	87,114	89,801	89,236	89,919	90,803	92,084	93,902	94,270	95,981	99,235	Total
<b>Number of stations</b>																	<b>Number of stations</b>
<b>Rolling Stock (in units)—</b>																	<b>Rolling Stock (in units)—</b>
Locomotives:																	Locomotives:
Steam	8,120	10,312	9,387	7,469	2,915	54	43	43	43	43	43	39	39	39	39	39	Steam
Diesel	17	181	1,169	2,403	3,759	4,702	5,137	5,197	5,345	5,633	5,714	5,869	6,023	6,086	6,049	5,898	Diesel
Electric	72	131	602	1,036	1,743	2,810	4,033	4,309	4,568	4,823	5,016	5,214	5,399	5,639	6,059	6,792	Electric
Coaching stock—																	Coaching stock—
Passenger carriages	13,022	20,062	24,591	27,410	28,677	33,236	45,048	46,688	48,037	50,194	51,798	53,140	53,638	54,059	55,258	57,060	Passenger carriages
EMU/DMU/DHMU	460	846	1,750	2,625	3,142	4,668	8,053	8,617	9,184	9,371	9,725	10,210	10,617	11,246	12,315	13,153	EMU/DMU/DHMU
Rail Cars	87	116	85	68	24	22	34	34	35	35	35	31	30	21	24	23	Rail Cars
Other coaching vehicles	6,059	7,415	8,719	8,230	6,668	4,731	6,500	6,560	6,622	6,792	7,000	6,704	6,699	6,499	6,406	6,372	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	2,39,321	2,44,818	2,52,833	2,54,018	2,51,295	2,77,992	2,79,308	2,89,175*	2,93,077	Wagons
<b>Personnel</b>																	<b>Personnel</b>
No. of employees (in thousands)	914	1,157	1,374	1,572	1,652	1,545	1,332	1,306	1,307	1,334	1,326	1,330	1,309	1,270	1,228*	1,254	No. of employees (in thousands)
Wage Bill (₹ in crore)	113.8	205	460	1,317	5,166	18,841	51,777	58,638	67,004	75,893	84,760	93,001	1,18,501.74	1,28,714.74	1,35,171.13*	1,54,214.71	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	4,56,357.00	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*	12,30,641	Average wage per employee (in ₹)
<b>For the year</b>																	<b>For the year</b>
<b>Transportation output</b>																	<b>Transportation output</b>
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	681.5	703.8	733.4	760.8	770.3	788.45	768.64	777.88*	768.24	Passenger and proportion of mixed
Goods and proportion of mixed	111.5	161.2	202.4	199.5	244.9	261.1	368.9	391.4	400.8	418.8	401.9	393.44	391.09	393	413*	396	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	20,816	22,309	23,542	24,812	25,327	26,332	26,191	26,463	26,385	Vehicle kms.
Wagon kms.	4,370	7,507	10,999	12,165	19,230	27,654	17,749	19,140	18,912	19,546	18,930	18,708	18,403	18,461	19,364	18,846	Wagon kms.
NTKms./Wagon day (BG) (8-wheelers)	710	998	908	986	1,407	2,042	9,247	9,261	9,267	8,547	8,113	7,510	7,359	7,405	7,747	7,057	NTKms./Wagon day (BG) (8-wheelers)
<b>Volume of traffic</b>																	<b>Volume of traffic</b>
Passenger traffic—																	Passenger traffic—
No. of passengers originating (in millions)	1,284	1,594	2,431	3,613	3,858	4,833	7,651	8,224	8,421	8,397	8,224	8,107	8,116	8,286	8,439	8,086	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	10,46,522	10,98,103	11,40,412	11,47,190	11,43,039	11,49,835	11,77,699	11,57,174	11,50,738	Passenger kms. (in millions)
Passenger earnings (₹ in crore)	98	132	296	828	3,145	10,483	25,706	28,246	31,323	36,532	42,190	44,283	46,280	48,643	51067*	50,669	Passenger earnings (₹ in crore)
Average lead (in kms.)	51.8	48.7	48.6	57.7	76.60	94.60	127.90	127.20	130.40	135.80	139.50	141.00	141.70	142.10	137.1	129.9	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	27	28.5	32	36.8	38.7	40.3	41.3	44.1	48.2	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	969.05	1,008.09	1,051.64	1,095.26	1,101.51	1,106.15	1,159.55	1,221.48	1,208.41	Revenue earning traffic
Total traffic	93	156.2	196.5	220	341.4	504.2	926.43	975.16	1,014.15	1,058.81	1,101.09	1,108.62	1,110.95	1,162.64	1,225.29	1,212.22	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	6,67,607	6,49,645	6,65,810	6,81,696	6,54,481	6,20,175	6,92,916	7,38,523	7,07,665	Revenue earning traffic
Total traffic	44,117	87,680	1,27,358	1,58,474	2,42,699	3,15,516	6,26,473	6,68,618	6,50,625	6,66,728	6,82,612	6,55,605	6,20,858	6,93,281	7,38,923	7,08,034	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	67,743.62	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	wharfage & demurrage charges (₹ in crore)
Average lead-Total traffic (in kms.)	470	561	648	720	711	626	676	686	642	630	620	591	559	596	603	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	101.47	128.5	137.53	151.24	163.4	164.51	163.83	166	158	Average rate per tonne km. (in paise)
<b>Quantity of fuel consumed by locomotives</b>																	<b>Quantity of fuel consumed by locomotives</b>
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	27,05,084	26,99,616	2,789.26	28,56,185	28,74,950	27,92,963	27,78,431	27,49,003	23,79,865	Diesel oil (in kilo-litres)
Electricity (Million KWH)	N.A	N.A.	N.A.	N.A.	4,249	7,933	13,572	13,449.98,	13,853	15,169.16	15,743	15,701	15,666.46	16,634.17	17,681.79	18,409.90	Electricity (Million KWH)
<b>Stores purchases (₹ in crore)</b>																	<b>Stores purchases (₹ in crore)</b>
Indigenous	63.2	158.1	331.1	1,233.30	4,749.20	10,381.80	28,017	28,458	33,780	40,258	41,351	41,802	41,854	48,495	61,078	63,052	Indigenous
Total	81.6	177.9	363.7	1,337.10	5,189.30	10,835.20	29,099	31,359	36,027	42,447	42,764	43,131	43,347	49,485	62,134		







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