

Undertakings and other Organizations

As many as 16 Public Sector Undertakings and other Organizations are functioning under the Ministry of Railways, as detailed below:-

S. No.	Name	Year of Incorporation/ Inception	Core competence
1.	RITES	1974	To design, establish, provide, operate, maintain and perform engineering, technical and consultancy services for development of projects/systems of all types and descriptions pertaining to Railways and Other Sectors/Industries in India and outside India.
2.	IRCON	1976	To undertake construction activities in India and abroad on turnkey basis or otherwise in various fields of infrastructure like Railways, Bridges, Roads, Highways, Industrial and Residential Complexes, Airports, etc.
3.	CRIS	1986	CRIS is the IT arm of Indian Railways. It designs, develops, implements and maintains centralized IT system for all departments of Indian Railways.
4.	IRFC	1986	To raise funds from the market to part finance the Plan Outlay of IR.
5.	CONCOR	1988	To develop multi-modal logistics support for India's international and domestic containerized cargo and trade.
6.	KRCL	1990	To construct and operate railway lines, construct Road Over Bridges and rail line projects.
7.	RCIL (RailTel)	2000	To utilize the surplus telecom capacity and right of way available with the IR to build nationwide optical fibre cable based broadband telecom and multimedia network.
8.	IRCTC	2001	To undertake catering and tourism activities of the Railways. Also facilitates internet ticketing through its website.
9.	PRCL	2001	To execute the Surendranagar-Rajula-Pipavav Port gauge conversion and new line projects in Gujarat.
10.	RVNL	2003	To create and augment the capacity of rail infrastructure. To mobilize resources mainly through multilateral/bilateral funding agencies and also through domestic market for successful implementation of projects.
11.	RLDA	2005	To develop vacant railway land for commercial use for the purpose of generating revenue by non-tariff measures for IR.
12.	DFCCIL	2006	To plan and construct Dedicated Rail Freight Corridors (DFCs) for movement of freight trains on the corridors.
13.	MRVC	1999	To plan and implement rail projects in the Mumbai Metropolitan Region.
14.	BWEL	1978 (In MOR from 2008)	To manufacture wagons and undertake structural fabrication jobs.
15.	BSCL	1976 (In MOR from 2010)	To manufacture Railway Rolling Stock.
16.	BCL	1976 (In MOR from 2010)	To manufacture wagons, undertake structural fabrication jobs and manufacturing, retrofitting of EOT crane.



Container train at Palghar Station, WR

Rail India Technical and Economic Services Limited (RITES):

RITES, a Mini Ratna Enterprise, Schedule 'A', an ISO 9001-2008 certified multidisciplinary organisation of consultants, engineers and project managers in transport and infrastructure sectors, offers comprehensive services from concept to commissioning in railways, urban transport, highways, bridges, tunnels, ports, inland waterways, airports, ropeways, institutional buildings, renewable energy and export packages of rolling stock and railway related equipment. It has operational experience of 43 years in over 62 countries of SAARC, ASEAN, Africa, Latin America and Middle East region.

Capabilities

Its capabilities include feasibility, design and detailed engineering, project management, quality assurance, workshop management, operation and maintenance, railway electrification, signalling and telecommunication, environmental impact assessment, training and human resource development. It has recognition by multi-lateral funding agencies - the World Bank, Asian Development Bank, UNDP and AFD.

Overseas Projects

Bangladesh - Feasibility study for setting up a new coach manufacturing unit and supply of 120 BG stainless steel passenger coaches and 26 new BG diesel locomotives-Bangladesh Railways.

Botswana-Consultancy services for pre-contract services and construction supervision of Tshesebe to Masunga Road Project.

Mauritius-Supervision consultancy for LRT project and DPR for Trident Port Project.

Myanmar-Supply of 18 new YDM4 locomotives to Myanmar Railways.

Senegal-Supply of 6 in-service YDM4 locomotives to M/s Indorama Energy Pvt. Ltd.

Mozambique-Wet Leasing of 15 1350 HP Diesel Locomotives.

Sri Lanka-Supply of 6 sets of 1800 HP Microprocessor Controlled AC-AC DMUs (13 coaches per set) and 10 3000 HP Microprocessor controlled AC-AC EMD Diesel Locomotives for Sri Lanka Railways.

Integrated Check Posts-At the borders of neighbouring countries is a first of its kind project in India and are being proudly executed by RITES. These are world-class facilities for passenger and cargo movement in an airport like set up with state of the art immigration and custom facilities. RITES is offering Project Management Consultancy services for Integrated Check Posts along international borders at Jogbani, Biratnagar, Birgunj along Indo- Nepal Border; Dawaki & Moreh along Indo-Myanmar border. RITES has completed Integrated Check Post at Attari on India-Pakistan border, Petropole on Indo-Bangladesh border, Agartala along Indo-Myanmar border and Raxaul on Indo-Nepal border.

Domestic Projects:

- At home, RITES is involved in mega transportation projects like dedicated freight corridors, metros, high speed rail studies, logistics parks, rail infrastructure and green energy etc.
- RITES has been associated with the National High Speed Railway Corporation for Ahmedabad-Mumbai high speed passenger corridor, India's first high-speed rail corridor under implementation, detailed design consultancy for six elevated metro stations for Metro Link Express for Gandhinagar, GC for Ahmedabad and feasibility study for high-speed rail corridor between Delhi-Chandigarh-Amritsar.
- Corridor optimization through digital elevation modelling and geological appraisal for Bilaspur-Manali-Leh new broad gauge railway project covering a distance of about 650 km, which is one of the four strategic border lines.
- Final report of the Preliminary Engineering-cum-Traffic Study (PETS) of East-Coast DFC (1,122 km) between Kharagpur and Vijayawada and study for the Southern Corridor (885 km) between Chennai and Goa.
- Project management consultancy services for the construction of double line electrified track and related infrastructure for Western Dedicated Freight Corridor (1477 KM) Dadri-Rewari-JNPT Mumbai as a member of consortium.
- Design and designer's association services for rail cum road bridge over river Brahmaputra at Bogibeel near Dibrugarh, Assam for NF Railway.
- Consultancy for the country's key metro rail projects like Delhi, Bengaluru, Ahmedabad and Nagpur and feasibility study & DPR for metros in Kochi, Patna, Guwahati, Kanpur, Varanasi, Agra, Lucknow & Chennai.
- Setting up of design, development and testing centre at RWF (Bengaluru), Self Propelled Accident Relief Train (SPART) on Indian Railways (IR) system, setting up of waste energy plants for IR, fatigue testing of metro bogies at BEML, consultancy study for setting up of emission standards for IR diesel locomotives.
- Wet leasing of locos to non-railway customers and operation and maintenance of more than 100 locos and 1200 wagons owned by clients.
- Turnkey projects for the third line in Pendra Road-Anuppur section of Bilaspur division of South East Central Railway and Gooty-Dharmavaram doubling works for South Central Railway.
- Turnkey works of construction, supply, installation and commissioning of Machinery & Plant for upgrading/modernization of Railway Workshops such as setting up a FIAT bogie frame manufacturing plant at Budge- Budge for RCF-Kapurthala. Turnkey execution of a new



Lifting of container at Shalimar yard, SER



Loading of container at Sanatnagar container depot, Hyderabad, SCR

factory at Vidisha for manufacturing of traction alternators for Indian Railways.

- Setting up of State-of-the-Art wagon factory, at Kulti, West Bengal as a 50:50 JV between RITES and SAIL, a “Make in India” initiative of the Indian Railways. An assured off-take Agreement has also been signed with Railways for manufacture of 1,200 wagons/annum and rehabilitation of a minimum of 300 wagons/annum.
- Rail infrastructure connectivity projects in steel, aluminum, power, mining and ports including NTPC’s mega project management works at Lara in Chhattisgarh state.
- Deep water port facilities with port connectivity (Sagar Island), setting up new green field ports in Andhra Pradesh, Tamil Nadu, Karnataka, Maharashtra, Odisha and West Bengal.
- Developmental works of Inland Waterways Transport on major National Waterways of India.
- RITES and the Indian Railways Joint Venture Company, Railway Energy Management Company Ltd. (REMCL) for renewable energy projects, bilateral purchases, power trading and energy efficiency projects, in a record time of 10 months, has commissioned 26 MW Wind Mill in Jaisalmer and also concluded power procurement contracts for 1200 MW in different states.

Financial Performance:

The comparative financial performance of RITES during the last 2 years is as follows:

	2015-16	(₹in crore) 2016-17
Total Income	1,278	1,509
Net profit after tax	339	331
Net worth	1,878	2,034

Ircon International Limited (IRCON)

Ircon International Limited (formally known as Indian Railway Construction Company Limited), a Mini Ratna and Schedule ‘A’ PSU, was incorporated on 28th April, 1976, mainly for the purpose of construction and development of Railway Infrastructure in India and abroad with the expertise from Indian Railways. During its operation of 41 years the company has diversified and developed core competence in other areas like Highways, Tunnels, Bridges, Flyovers, ROBs, Airport Hangar & Runways, Metro rail and Buildings, EHV Transmission Line & Grid Sub-stations, Industrial Electrification, Signaling and Telecom Systems etc. Considering its major share of business from projects abroad, its name was changed to “Ircon International Limited” w.e.f. 17th October 1995.

IRCON has emerged as front ranking construction company of international repute having executed prestigious projects during the last 41 years of its operations. It has so far completed about 376 infrastructure

projects in India and 121 projects across the globe in more than 24 countries. As per 2016 edition of Engineering News Record (ENR) of USA, IRCON is among the only four Indian companies to make it to the list of top 250 International Contractors.

Foreign Projects

IRCON is actively engaged in infrastructure development in several Asian and African countries. The journey abroad began with Samawa high speed railway line project in Iraq in 1980 in which the Company proved its mettle by constructing world-class railway lines designed for trains running at a speed of 250 Kmph on standard gauge. Since then, the Company has never looked back.

The Company'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 "Construction of 2nd Bhairab Railway Bridge with Approach Rail Lines" and "Turnkey Contract of 2x20 MVA, 66/33 KV Sub-station at Paro in Bhutan." Some other Key Railway Projects are also under execution in Algeria, Bangladesh and South Africa. IRCON has also signed an MoU with Construction and Development of Transportation Infrastructure Company (CDTIC), a company owned by Government of Iran for the financing and execution of Chabahar-Zahedan Railway Project.

International Rail Connectivity Projects

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

Strategic Projects in India

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

During the year 2016-17, major projects completed include:

- 4.5 km long Rail-cum-Road Bridge across the river Ganges at Patna
- Design, Supply, Installation, Testing and Commissioning of Ballastless Track of Standard Gauge in elevated section of Aluva to Petta corridor of Kochi Metro.

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 ₹4,500 crores in Chhattisgarh
- Construction of Modern Coach Factory at Rae Bareilly
- Construction of ROBs in the states of Rajasthan and Bihar
- Supply, Installation, Testing and Commissioning of Ballastless Track of Standard Gauge and sub-stationworks for Delhi Metro under phase-III
- Four laning of Bikaner-Phalodi section in Rajasthan
- Four laning of Shivpuri-Guna section in Madhya Pradesh
- Power Supply Distribution works (R-APDRP) at Meerut in the state of Uttar Pradesh and at Jammu in Jammu & Kashmir for the respective State Governments.

The company is also engaged in construction of rural Roads under Pradhan Mantri Gram Sadak Yojna (PMGSY) and has contributed significantly in the road sector by completing about 5,000 km of roads and about 100 nos. of Road over Rail Bridges.

Awards & Recognition

A number of Awards & Accolades were received during the year 2016-17. Some of them are Dun & Bradstreet Awards for 'India's Top PSUs 2016', 'Infra Awards 2016 for Best Infrastructure Project: Setting up of Modern Coach Factory, Rae Bareilly Phase-I', 'CIDC Vishwakarma Awards 2016 for the Best Construction Project to 'Modern Coach Factory, Rae Bareilly'.

Centre for Railway Information System (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 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.

CRIS's portfolio of projects covers the gamut of Indian Railways' functions such as Passenger ticketing, Passenger enquiry services, Freight operations, Train dispatching and control, Crew management, e-Procurement & Materials management, management and protection of Railways' Fixed and Moving Assets, Parcel management, comprehensive Financial management system, and Production of rolling stock. Mobile apps provide information at the passengers' fingertips.

CRIS is currently developing systems to cover emerging needs of the Railways including management of the Overhead Electrification System, employees' Health Management, Tracking of Rolling Stock using Radio Frequency Identification, setting up a Geo-spatial database, Track Machine maintenance & management system, Bridge Management System, Traffic Accounts Management System, Workshop Accounts Management System,

Data Analytics Unit for Indian Railways, Fuel Management System, CRS Sanction Management System, and building a state-of-the-art Data Centre.

The idea “Congestion Prediction and Network Optimization for Indian Railways using Big Data Analytics and Operational Research Tools”, presented by CRIS team, won the award for the best idea under the theme “Modernise Indian Railways by using best-in-class technology” in the three-day Rail Vikas Shivir, held from November 18th to 20th, 2016, at the initiative of the hon’ble Prime Minister, to generate innovative and practical ideas across critical areas of railway operation.

Achievements and Developments:

Ticketing and Passenger facilitation

Passenger Reservation System (PRS) provides reserved accommodation for passengers, in various classes of travel, Tatkal tickets, and special trains; including dynamic pricing. Railways is leading Government of India’s cashless effort with nearly three-fourth of its reserved ticket earnings now coming from cashless sources.

Next Generation E-ticketing system (NGeT) provides the web-based front-end application to handle all the Internet ticket bookings for IRCTC.

National Train Enquiry System (NTES) is the official Indian Railways app for travelers needing train-running related information and real-time status queries for all trains of India.

Hand-held terminals for TTEs (HHT) will enable TTEs to report on-board vacancies and to provide on-train services integrated with PRS.

A Ticketing Data Warehouse provides insights into ticketing data and helps to develop better passenger services.

Unreserved Ticketing System (UTS) provides cluster-to-anywhere booking of unreserved tickets at all stations.

Automatic Ticket Vending Machines (ATVM/CoTVM) are smart card-based or coin/ currency operated user-driven ticket vending machines, primarily for suburban sections.

UTS through mobile phones has been provided in paperless mode in Mumbai, Chennai, Kolkata, Delhi, Secunderabad, etc. The user can buy and display the ticket on his/her phone itself.

Automatic Fare Collection System for Kolkata Metro has replaced the old magnetic ticket based AFC system with the new Smart Card & Token based system.

The Web Portal for Indian Railways is the single point of interaction for Rail Users.

The Complaint Management System with bilingual Web-based and SMS-based interfaces enables passengers to lodge their complaints and track them as they are addressed.

A WAP/SMS gateway provides information to passengers about change in PNR status, train position, etc. via push mode as well as query mode.

Parcel Management Information System (PMIS) has computerized the booking and delivery of parcels at major parcel booking stations, with provision for bar-code tracking.

The Commercial Contract management system is being designed and developed for commercial contracts entered at stations and other units of Indian Railways

Computerization of coaching refunds is a system to simplify coaching refunds.

Operations

Freight Operations Information System (FOIS) is an online system for monitoring and management of Freight movement. It enables freight customers to obtain the status of consignments in transit and helps in monitoring and managing the movement of freight trains.

Pipeline Management System is linked to FOIS and helps to forecast congestion at terminals.

The Control Office Application (COA) assists the Section Controller in ensuring smooth movement of scheduled and unscheduled trains. COA prepares computerized control charts.

Software Aided Train Scheduling system (SATSaNG) is a comprehensive system to aid scheduling of passenger trains, identifying paths for freight trains and providing a tool for path management.

Crew Management System (CMS) a browser-based application, automates and optimizes crew booking on all Freight, Shunting and Coaching services and enables booking of Drivers, Guards, Assistant drivers and Shunters.

Computerization of TTE lobbies at interchange/major stations on 67 divisions will streamline the deployment of TTEs.

Integrated Coaching Management System (ICMS) provides a single window for all coaching operations, together with real time and comprehensive Punctuality Reports for all levels of management.

Web enablement of claims (Web claims) is a web-based system to simplify claims lodging and processing.

Safety Information Management System is a web-based application through which safety related information can be communicated among users.

Asset Management

Track Management System (TMS) is a comprehensive system including maintenance and inspection, track materials, track welds and their testing, and reporting.

A Bridge Management System and Track Machines Management System will supplement the TMS to provide a suite of applications for maintenance and operation of Civil Engineering assets.

System for rail-road crossing GAD Approval, Way Leave Easement rights, and private sidings provides an integrated inter-ministry work-flow for approval of general arrangement drawings and other technical documents for Rail/Road over bridges/under bridges and private sidings, greatly reducing the time taken to plan such works.

Locomotive Asset Management System (LAMS) provides comprehensive information for Diesel and Electric Loco Sheds and provides functionality for Power and Traction controllers.

Coaching Maintenance Management System (CMM) captures data during maintenance activities in depot and provides assistance to the managers and maintainers in the depots and Divisions. The centralized application provides all relevant information to facilitate maintenance work.

Freight Maintenance Management System (FMM) is a comprehensive maintenance management system for freight wagons.

Workshop Management Information system (WISE) is a user-friendly IT system for Mechanical workshops with automated data capture to provide secure, reliable and timely information.

Centralized information systems in Production units viz. DLW (Varanasi), RWP (Bela), and RCF (Rae Bareli) will provide information on the production shop floor as well as for supporting functions.

Radio frequency identification (RFID) will be used to provide an automated wagon identification system.

Electrical Energy Management System (EEMS) demonstrates energy efficient technology through 500 AMP meters

Materials Management, Financial Management, and Resource management

E-Procurement System (IREPS) enables fully secure central e-tendering for supply contracts and e-auctions for scrap material for all Indian Railways' zones and units. It has been extended for Works contracts also, and to divisions and units.

A Centralized Material Management Information system (MMIS) includes all Purchase and Depot functions. Vendors will be managed through the **Vendor Interface Management System**.

The Accounting Information Management System (AIMS/I-PAS) is a centralized financial management system, based on the I-PAS (Integrated Payroll and Accounting System) rolled out across Indian Railways.

The Railway Budget Compilation System provides a web- based interface for Budget compilation.

Indian Railways Projects Sanctions & Management (IRPSM) is a web based System to manage the creation and sanction process of projects under the Annual Works Program.



Crossing between Trivandrum Veralal Express & Mangla Lakshdeep Express at 2192 Km near station, KRCL

RPF Security Management System (RSMS) provides comprehensive information for security of Railway assets.

Conclusion

Implementation of effective IT systems has proved to be the quickest and cheapest way to increase the efficiency and effectiveness of Railway working. CRIS has been working to ensure that IT systems are implemented in all areas of Railway working, for improving Railway working further.

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 developmental needs, IRFC has been successfully meeting the borrowing targets set for it year after year. Funds are raised through issue of bonds, Term loans from banks/financial institutions and through external commercial borrowings/export credit etc.

The Company has leased rolling stock assets worth ₹1,51,318 crore to the Railways upto 31st March, 2017. Assets worth about ₹14,280.84 crore were financed during 2016-17. 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 ₹22,600 crore till March.

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 10.915% p.a. in 2016-17 which compares favourably 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 ₹3,188.93 crore to Rail Vikas Nigam Ltd. (RVNL) till the end of fiscal year 2016-17 for development of Railway Projects.

IRFC has consistent profit earning track record. It has so far paid ₹2,749 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 rating Agencies.

Container Corporation of India Limited (CONCOR)

Container Corporation of India Limited (CONCOR) a Navratna undertaking of Government of India, was incorporated in 1988 with the objective of providing multi modal logistics support for India's domestic and international containerized cargo and trade. It manages the largest dry port network of India and acts as a carrier, terminal operator and warehouse/CFS operator.

CONCOR prides itself of having the highest market presence in industry which is corroborated in the form of 75% market share presently held by it. The company owns 285 high speed rakes & 1,340 BFKHN wagons which

interconnect a vast spread network of its 68 terminals, catering to both domestic and international containerized cargo. In terms of performance, CONCOR achieved a gross operating turnover of ₹5,606.13 crore while handling a total of 3.10 million TEUs. In terms of tonnage, the company carried a total tonnage of 38.12 million tons in the year 2016-17.

CONCOR's terminals provide a spectrum of facilities in terms of warehousing, container parking, repair facilities, reefer container plug-in facilities etc. As a CFS operator, CONCOR adds value to the logistics chain by offering services such as transit warehousing, bonded warehousing, Less than Container Load (LCL) consolidation and reworking of consolidated cargo at nominated hubs, and air cargo clearance using bonded trucking. The customers can track the location of their containers through internet or even through an SMS empowering them to take better decisions. CONCOR maintains high integrity standards and utmost transparency in all its operations and public dealings benefiting all the stakeholders.

CONCOR has attempted to diversify its business by venturing into Air Cargo and port terminal operations through JVs with private corporates. A wholly owned subsidiary of CONCOR, CONCOR Air Ltd. was launched in 2012, which deals with air cargo.

Huge investments have been made towards creation of state of the art infrastructure facilities called Multi Modal Logistics Parks which in future shall be the answer to all transportation, warehousing, clearance needs of the trade.

With the upcoming Dedicated Freight Corridor and export favouring policy being adopted by the government, coupled with the fact that India is set to become favourite trade destination of the world, CONCOR shall play a very important role by connecting ports with the hinterland and providing ready infrastructure for handling the load.

Konkan Railway Corporation Limited (KRCL)

The Corporation was established in the year 1990, with equity share capital 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 i.e. from Roha (in the State of Maharashtra) to Thokur near Mangalore (in the State of Karnataka) with a length of 741 Kms. The completion cost of the project was ₹3,555 crore inclusive of ₹1,035 crore on project financing. The Corporation became a fully operational Railway on 26th January, 1998 and since then it has been successfully operating passenger and freight trains. The Corporation has expertise in construction of turnkey Railway Projects and at present is undertaking part of Udhampur-Srinagar-Baramulla Rail Link (USBRL) project at J&K including a few others.

Train Operating Performance:

On an average, during the year 2016-17, 51 Passenger Trains per day were run and one new train was introduced. The passenger earnings during



Mandovi Express leaving Aravali Road Station, KRCL



Ro-Ro Train crossing bridge between Ukshi & Sangmaeshwar Station, KRCL

the year was ₹606 crore registering an increase of 9% over the last year.

On the freight front, on an average, 17 freight trains were run per day including Roll on - Roll off (RORO) services, during the year 2016-17. The freight earnings during the year was ₹440 crore, as compared to last year's freight earnings of ₹459 crore. A drop in earnings was majorly due to reduction in freight rates of certain items.

Financial Performance:

	2015-16	(₹ in crore) 2016-17
Total Income	1,625.00	2,153.00
Operating Margin	314.00	265.00
Profit After Tax	129.50	62.00
Net Worth	1,483.00	1,496.00

The Corporation has achieved "Excellent" rating in MoU targets set with the Ministry of Railways for the year 2015-16.

Ongoing Projects:

USBRL PROJECT, J&K - So far, the Corporation has completed 25.84 km tunnel excavation, out of a total of 41 km of the construction of Katra-Dharam Section of USBRL Project, J&K. Concrete lining in 03 tunnels has been completed totaling nearly 3.25 km during the year. A turnover of ₹808 crore in USBRL Project was achieved in the year which is the highest ever and 75.62% higher than ₹460 crore of 2015-16. The cumulative turnover achieved up to 2016-17 is ₹3,675 crore.

Jaigad Digni Rail Connectivity Project - The project is being executed by the JV (Joint Venture) Company "Jaigad Digni Rail Limited". The work of land acquisition is in progress. The work of critical Tunnels and Bridges has started.

Track Doubling-Roha-Veer Section (47 km): Track doubling of this section is expected to increase line capacity of the Corporation. The project is expected to be completed in 36 months, with the estimated project cost of ₹340 crore.

Route Electrification of Konkan Railway Route: With complete electrification, the Corporation is expected to save approx. ₹120 crore per annum on fuel cost. For execution of the project, open Composite Tenders had been invited at a total estimated cost of ₹612.57 crore. Tenders are under finalisation.

Rajbhasha Award:

Hon'ble President of India had awarded first prize of "Rajbhasha Kirti Puraskaar" Shield to the Company on 14/09/2016.

RailTel Corporation of India Limited (RailTel)

RailTel was formed in September 2000 with the objective of creating nationwide Broadband Telecom and Multimedia Network in all parts of

the country, to facilitate Railways in ‘expeditious’ modernization of their operation and safety systems and network by providing state-of-the-art communication infrastructure, and to generate revenue through commercial exploitation of its telecom network.

RailTel is holding Internet Service Provider (ISP) Category ‘A’ license, National Long Distance (NLD) service license and Unified License authorized for International Long Distance service from DoT. In addition, registration as Infrastructure Provider Category- I (IP-I) has also been obtained from DoT by RailTel.

RailTel has deployed state of the art STM-16/64/DWDM network on more than 45,000 RKM OFC backbone across the country.

The Company is now expanding the telecom network by laying 12000 KM of OFC network in 6 North Eastern States (Mizoram, Tripura, Meghalaya under NE I and Arunachal Pradesh, Manipur and Nagaland under NE II) under the USOF (Universal Service Obligation Fund) project of DoT.

The Company as a part of NOFN (National Optical Fiber Network) project is laying OFC on behalf of BBNL for providing broadband connectivity to 8,768 grampanchayats (under Ph-I) in 11 States/UTs of country for providing minimum 100 Mbps broadband to panchayats.

Performance during last three years.

- In the last three years, the Company has earned more than ₹100 crore profit before tax during the last three years.
- The Company is a Mini Ratna Category 1 since May, 2012.
- The Company has earned “Excellent” rating during last three years.
- 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:

	2015-16	(₹ in crore) 2016-17
Revenue share to Railways	22.15	27
License fee to DoT	34.69	41.17

- Towards its Corporate Social Responsibility (CSR), the company has incurred an expenditure of ₹3.59 crores in CSR activities during the year 2016-17.
- The important financial parameters over last two years are as under:

Financial Performance

S.No.	Particulars	2015-16	(₹ in crore) 2016-17
1.	Share Capital	321	321
2.	Gross Income	642	899
3.	Gross Operating Margin	275	309
4.	Net Profit after Tax	104	129
5.	Net Worth	1,059	1,157
6.	Dividend paid to Ministry of Railways	42	51.53



Ro-Ro Train Crossing pomendi Bridge between Ratnagiri Nivasar Railway Station, KRCL



Rail Aahar at Mumbai Central Station, WR

Focus Areas:

Station Wi-Fi

Rail Tel has partnered with Google to provide fast Wi-Fi across 400 railways stations bringing internet access to millions of Rail commuters. Presently, the service has been commissioned at 193 stations.

Rail Cloud

Rail Tel has been entrusted with setting up of Rail Cloud – the cloud service to Indian Railways to create a common IT infrastructure platform, which will enable hosting of all future IT applications and rapid development of IT applications. RailTel is hosting the Rail Cloud in its Tier III Data Centres at Secunderabad and Gurugram. The Rail Cloud will reduce procurement/provisioning of IT infrastructure (IT hardware/platform) to less than 24 hours which will revolutionize the pace of IT deployment on IR.

Railway Display Network

RailTel has conceptualized an integrated railway display network of more than 1 lakh screens spread across 2,000 stations equipped with an array of connected LED screens and video-walls. These screens shall be connected using RailTel's extensive fiber network and managed centrally from data center. The screens shall enable relevant passenger and train information, travel & tourism related information and local station guides among others. Being centrally controlled, it will also enable providing relevant social messages and emergency communication while being fully integrated with social platforms.

Content on Demand

RailTel has started working on Content on Demand (CoD) services for providing entertainment video content in 1300 premium trains under initial phase. Under this project, entertainment in the form of video content will be provided as a service to the passengers on trains using the intra-train Wi-Fi service.

Nirbhaya Project

RailTel has been entrusted with the execution of 'Nirbhaya project' - Indian Railways' endeavour to set up high-tech surveillance system at 983 stations of A1, A, B and C category Railway stations for providing safe, secure and pleasant experience to Railway passengers especially women and children. The project envisages to network all cameras on RailTel's optic fiber cable and providing central view console at Zonal/Divional HQs for use by RPF and senior management.

Rural Station Wi-Fi project

RailTel has started a project of providing RailWire Wi-Fi at 200 rural stations as a pilot project as it will cater to rural areas where the internet service is either unavailable or not upto the mark. A Digital Service centre will be set up in these stations to extend digital literacy and various online services to rural population.

RailWire - Retail Broadband Service

It is a collaborative model in partnership with local entrepreneurs & local cable operators for providing access network. Presently, there are more than 1 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.

Telepresence as a Service

RailTel in partnership with OEM has started providing Tele-presence service on an OPEX model to various customers. RailTel's plan is to leverage this platform for providing services to various Government Departments/PSUs and Enterprises on annual rental model thereby saving capex for the customer. Railways have utilized this infrastructure effectively for over a year now with RailTel enabling over 110 functions of Railways for various passengers services and train inaugurations and presently connecting all Zonal, Divisional Headquarters and Production Units.

Pursuing diversification of business, RailTel based on its expertise developed in the field of Telecom & networking is focusing in system integration projects for its various customers specially in Government/PSU department in the field of ICT(Information Communication Technology). RailTel is already working with various State Governments and Government agencies & PSUs. Presently, RailTel is operating and maintaining the IT infrastructure (network, data center, IT applications, etc.) of ECIS which is one of the largest ICT setup in the country.

Indian Railway Catering and Tourism Corporation Limited (IRCTC)

Indian Railway Catering and Tourism Corporation Limited (IRCTC), was incorporated on 27th September 1999 under the Companies Act, 1956 as an extended arm of the Indian Railways to upgrade, professionalize and manage the catering and hospitality services at stations, on trains and other locations and to promote domestic and international tourism through development of budget hotels, special tour packages, information & commercial publicity and global reservation systems. The authorised share capital of the company is ₹50 crore and paid up share capital is ₹40 crore, fully subscribed by Ministry of Railways, Government of India.

Financial Performance Highlights

	2015-16	(₹ in crore) 2016-17
Total Income	1,523.41	1,599.73
Profit before Tax	306.79	328.47
Dividend	75.45	84.68

Catering & Hospitality:

During the year 2016-17, IRCTC had 134 mobile units (including 17 Duronto), 4 Base Kitchens, 09 Jan Aahaars and 2 Refreshment Rooms.



Catering service at Station, ER



Shravan Seva service for elderly passengers on Konkan Railway

IRCTC also managed on-board catering services in 93 Mail/Express, 9 Rajdhani and 5 Shatabdi trains through award of temporary licenses for onboard catering services. As on 31.03.2017, IRCTC operated 01 Shatabdi and 06 Mail Express trains through departmental operations. Ministry of Railways introduced Gatiman and Humsafar trains and IRCTC was mandated to manage the onboard catering services in these trains.

Under Catering Policy 2017 issued by Ministry of Railways, IRCTC has been mandated to upgrade the quality of food preparation and shall be setting up new kitchens and upgrade existing ones. IRCTC has undertaken unbundling process in 04 phases including partial unbundling. Presently, IRCTC is in 2nd phase i.e. partial unbundling through temporary licenses. As on 31.03.2017, IRCTC managed 10 Duronto and 8 Rajdhani trains on partial unbundling model.

The Company commissioned 18 Food Plazas and 26 Fast Food Units, making the total number of operational units to 223. The company also awarded 54 units at annual license fee of ₹24 crore during 2016-17. The total earning from FPs/FFUs for the year 2016-17 stood at ₹38.16 crore. At present, IRCTC is operating 229 Food Plazas and Fast Food Units over Indian Railways.



Diet food service in trains for passengers on Konkan Railway

Under E-Catering, around 250 stations have already been made live and Self Help Groups from 10 stations are also serving meals through E-Catering. The average meals booked per day has now increased to more than 5,947 meals per day (June 2017). The web page for E-Catering has also been upgraded and made more user friendly by incorporating innovative upgrades for improved user engagement.

During the year, Executive Lounges at Visakhapatnam, New Delhi and Jaipur have been commissioned by IRCTC. The revenue collection from Executive Lounges for the year 2016-17 stood at ₹2.71 crore.

The Company is presently operating two Rail Yatri Niwas (Ginger Rail Yatri Niwas, New Delhi & Sampath Rail Yatri Niwas Howrah) and two Budget Hotels at Puri and Ranchi, from which, the revenue collection for the year 2016-17 stood at ₹1.13 crore.

IRCTC takes consistent steps to improve the quality of catering services through ISO certification. During the year 2016-17, 20 Food Plazas/Fast Food Units were certified with ISO 22000:2005 certification, taking the total number to 131 out of 190 licensee-operated units, as on 31st March, 2017. A total of 1,073 complaints were received from train passengers during 2016-17 as against 1,252 in the previous year, thereby posting a reduction of 14.3%.

The total Revenue from Departmental catering was ₹234.98 crore in 2016-17 as compared to ₹255.56 crore in 2015-16. The Total Revenue from Licensee catering was ₹161.63 crore in 2016-17 as compared to ₹76.09 crore in 2015-16. The NRC units contributed ₹15.87 crore to the total revenue in 2016-17 as compared to ₹27.28 crore in 2015-16.



Catering service at Station, ER

Internet Ticketing:

E-ticketing now accounts for 62% of reserved tickets in India booked online, leaving behind several high profile e-commerce sites worldwide. On an average, more than 5.73 lakh tickets were sold daily through IRCTC's website during 2016-17.

Number of E-tickets booked, number of passengers booked through E-tickets, E-ticketing Revenue Collection from users and service charge collected on E-tickets excluding service tax during the year as against previous year are as under:

Year	2015-16	2016-17
No. of E-Tickets Booked (in Lakhs)	1,992.80	2,092.95
No. of Passengers Booked E-tickets (in Lakhs)	3,595.82	3,730.87
E-ticketing Revenue Collection (₹ in Crores)	23,395.03	24,485.21
Service Charge (₹ in Crores)	627.62	416.14

During the year, the following have been the highlights of Internet Ticketing segment:

- During the year 2016-17, the NGeT booked a total of 2,092.95 lakh tickets.
- Under NGeT system, booking of 16,555 tickets per minute was achieved on 14th August, 2016.
- Optional Travel Insurance started online on 1st September 2016 and free insurance is being provided to all Confirmed/RAC passengers w.e.f 10th December 2016.
- Counter/System ticket online cancellation started from 29th April, 2016.
- Booking through International Credit Cards was launched for international users on 29th April, 2016.

The total Revenue in Internet Ticketing is ₹466.05 crore in 2016-17 as compared to ₹632.15 crore in 2015-16. There is approximate 26% decrease in revenue as compared to previous year due to temporary withdrawal of Service Charge on tickets booked through IRCTC website w.e.f. 22.11.2016.

Travel & Tourism:

During the year 2016-17, IRCTC launched Gatiman type Rail Tour packages, Aastha Circuit Special Train, Semi Luxury Trains i.e. Tiger Express, Udaipur- City of Lakes and Tiger Express with City of Lakes- Udaipur Circuits, Gandhi Express Train, Photo Gallery, Ayurvedic Treatment Packages etc. through IRCTC's Tourism Portal www.irctctourism.com.

IRCTC is also operating all inclusive Tour packages including Rail, Land and Domestic/ International Air packages across India as well as abroad, which includes confirmed Rail travel/ air ticket, road transfers, accommodation, meals and sightseeing.

In co-ordination with State Governments, IRCTC has operated 260 State Special Trains for elderly residents of respective States such as Madhya Pradesh, Rajasthan, Punjab, Odisha, Chhattisgarh and Jharkhand.

Approximate 3,500 air tickets were booked daily in 2016-17 in IRCTC's air portal www.air.irctc.co.in in comparison to approximate 2,700 air tickets per day in 2015-16.

The Maharajas' Express has been awarded as the World's leading Luxury Tourist Train consecutively for 5 years from the year 2012 to 2016 at the World Travel Awards.

During the year 2016-17, IRCTC made tie ups with:

- M/s Santhigiri Ashram for Ayurvedic treatment packages.
- Rail Museum, Chennai for handling entry tickets, School & College Mktg, Tourist Information Facilitation Centre(TIFC) & Operation of Food court.
- Odisha State Government for operation of State Special Trains for elderly residents of the state.
- MOUs with various State Tourism Development Corporations for developing tourism from & to the States.

During the year 2016-17, a total of approximate 3.70 lac passengers availed of IRCTC tour packages i.e. Rail Tour packages, Holiday packages, Tourist Trains, Customised and Special tour packages.

Travel & Tourism Business of IRCTC has generated an income of ₹527.8 crore in the year 2016-17 as compared to ₹375.02 crore in the year 2015-16 recording a growth of 40.71%. The profit of Tourism department doubled from ₹28.15 crores in 2015-16 to ₹55.45 crores in 2016-17.

Packaged Drinking Water (Rail Neer) & Water Vending Machines:

At present, IRCTC has seven operational Railneer plants located at Delhi, Patna, Palur, Ambernath, Amethi, Parassala and Bilaspur, out of which Rail Neer Plants at Amethi and Parassala are under PPP mode.

The total production of Rail Neer at Nangloi, Danapur, Palur, Ambernath, Amethi, Parassala & Bilaspur plants was 18.70 crore bottles against total production of 15.76 crore bottles in previous year. Commercial production at Rail Neer Plant Bilaspur was started in March, 2017.

Rail Neer Plant, Danapur, Nangloi, Palur and Ambernath are accredited with ISO: 9001-2008 quality management system certification. Rail Neer Plant, Ambernath is also accredited with 22000:2015 certification. The result of the test, carried out by accredited laboratories on Rail Neer Packaged Drinking Water indicates that the quality of Rail Neer conforms to European Economic Community (EEC) norms for pesticide residue.

During the year, to reduce the cost of manufacturing, the neck size of bottle has been changed from 30 mm to 27 mm at Nangloi and Palur plants.

The Company has identified installation of 2,500 Water Vending Machines across Indian Railways and commissioned 1,011 Water Vending Machines during the year. Around 80% of A-1 category stations have been provided with Water Vending Machines.

The total Revenue of Rail Neer was ₹159.10 crore in FY 2016-17 as compared to ₹133.38 crore in FY 2015-16. This does not include sale of Rail

Neer through departmental catering, amounting to ₹13.20 crore as against ₹15.54 crore in the previous year 2015-16. The increase in revenue is mainly attributed to increase in demand of railneer by the licensees and operation of new Parsala Plant.

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) with equal equity participation 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 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.

During 2016-17, company declared and paid 5% dividend to its shareholders. The comparative figures of performance during 2015-16 and 2016-17 are:

	2015-16	2016-17
Number of Container trains	4,109	3,422
Number of Double Stack containers train	1,058	1,390
Number of Bulk trains	697	546
Number of empty trains run	611	451
Total number of trains run	6,475	5,809
Cargo (in Million Tonnes)	8.55	7.57
Gross Apportioned revenue (₹in crore)	250.42	217.45
Net Profit (₹in crore)	85.72	78.56
Net Worth (₹in crore)	355.51	422.26
Number of passenger trains	15 pairs**	15 pairs**

** includes 4 mail/express trains, which are running weekly and 11 mail/express/passenger trains run daily

Apart from container transportation, PRCL handles bulk traffic of food-grain, onion, salt, soda ash, cement, gypsum, fertilizers and coal.

Innovation – Market Expansion

In the first phase of enhancing track capacity on the section, the work of construction of one loop each at Kundli and Lathidad stations has been undertaken at an estimated cost of approx ₹8.90 crore, to cater to the increased traffic on PRCL Section and completed in 2015.

Under its Corporate Social Responsibility, Company has taken up rural development activities in Raska Village, which included construction of 25,000 liters capacity overhead water tank and 100 bio-toilets for the village. A Community Centre at Raska Village was also provided and handed over to the Panchayat in September, 2017. Other CSR activities include projects related to education of girl child, welfare of senior citizens, etc.

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 31.03.2017, RVNL has completed 6,994.21 km of project length covering 213.82 km of New Lines, 2,353.32 km of Doubling, 1,590 km of Gauge Conversion and 2,837.07 km of Railway Electrification, 5 Railway Workshops and 1 Cable Stayed Bridge at Bardhaman. 57 projects assigned to RVNL have been fully completed. During 2016-17, RVNL completed 713.73 km of project length including 355.73 km of Doubling and 358 km of Railway Electrification works and an additional 199.71 km of electrification as part of doubling and other projects. For the past five years, RVNL has been contributing more than 1/3rd of total project length completed on Indian Railways under Doubling & Railway Electrification Plan Heads.

During 2016-17, the Company has been able to build on the foundation of project planning and award of contracts of projects assigned to RVNL for execution in previous years. With the resultant take off in project execution, the Turnover of the Company reached a figure of ₹5,919.62 crore in 2016-17 as compared to ₹4,541.30 crore in 2015-16, i.e. an increase of 30.35%. The Gross Profit of the Company increased from ₹363.56 crore in 2015-16 to ₹484.79 crore in 2016-17.

The Profit after Tax (PAT) of the Company for the year was ₹385.03 crore as on 31st March, 2017 as compared to ₹304.02 crore in previous year i.e. an increase of 26.64%. In view of the improved financial performance in 2016-17, RVNL has paid a Dividend of ₹154.50 crore as compared to ₹115.16 crore in the previous year. The cumulative dividend paid to Ministry of Railways by RVNL is ₹408.30 crore.

In addition to borrowings from IRFC for implementation of projects, comprising of ₹3,151.8 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 ₹6,139 crore against which the equity contribution of RVNL is ₹625 crore, i.e.10%. Balance funds of ₹5,524 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 Kutch Railway Company Ltd. and Bharuch Dahej Railway Company Ltd. are fully functional while Krishnapatnam Railway Company Ltd. is partially functional. RVNL has also become 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 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 ₹6.12 crore was spent during 2016-17 (around 2.31% of the average net profit of last three financial years) on CSR initiatives, compared to ₹5.94 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.

Business of the Authority:

- **Commercial Development of Vacant Railway Land:** Sites for commercial development are entrusted to RLDA by the Ministry of Railways. During the year 2016-17, total earning of ₹17.15 crore have been realized by RLDA.

The number of sites for commercial development with RLDA is 49 in 2016-2017.

- **Construction of Multi Functional Complexes (MFCs):** From 2009-10 onwards, RLDA has been assigned the responsibility of developing Multi Functional Complexes (MFCs) through IRCON, RITES, RVNL and Private developers, with an aim to provide multiple facilities like shopping, food stalls/restaurants, book stalls, PCO booths, ATMs, Medicines and variety stores, budget hotels, parking spaces and other similar amenities to rail users at Railway stations. 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 PSUs for development [IRCON (24), RITES (14), and RVNL (2)], out of these 38 MFCs have been completed by them & 20 MFCs have been commissioned by IRCON. Further, RLDA has been entrusted 123 MFCs for development through private developers.
- **Redevelopment of Stations:** For redeveloping railway stations, Indian Railway Stations Development Corporation Ltd. (IRSDC) was created as a Special Purpose Vehicle, Joint Venture of IRCON & RLDA, with an authorized share capital of ₹100 crore and paid up share capital



Construction of Viaduct at Renwal in Western, DFCCIL

of ₹40 crore. IRSDC has been entrusted 12 stations for redevelopment till the end of the year 2016-17. A further 400 stations are proposed to be developed as per international standards through Swiss Challenge Method.

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 30th 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 (1,856 route km) and Western DFC (1,504 route km) spanning a total length of 3,360 route km are being constructed. The Eastern Dedicated Freight Corridor starts from Ludhiana and terminates at Dankuni near Kolkata, traversing states of Punjab, Haryana, Uttar Pradesh, Bihar, Jharkhand and West Bengal. 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- shift of freight from road thereby leading to increase in rail share and improvement in energy efficiency of freight rail through adoption of improved technologies leading to significant reduction in carbon footprints. The difference of rail transported freight over the road transported freight can easily be judged as one DFC train will be able to take as many as 1,300 trucks off the roads.

DFCC is designed to be a very lean organization with higher efficiency and cost effectiveness. As a result, the operation and maintenance cost is expected to be substantially low as compared to present Railway system.

Achievements during the year 2016-17

The Dedicated Freight Corridor is achieving new milestones with every passing day. Some of the highlights of achievements made till date are as follows:

Award of Contracts

Year 2016-17 saw major progress in the award of Civil, Electrical, S&T and other contracts in DFCCIL. Contracts worth ₹11,643 crores were awarded/signed taking the cumulative value of contracts awarded to ₹48,954 crores. As a result, Civil contracts for 2,600 kms (92%), Electrical

contracts for 2,315 kms (82%) and S&T contracts for 2,315 kms (82%) length have been finalized.

Finance

During the year 2016-17, capital expenditure of DFCCIL was ₹9,915 crore, an increase of 16% as compared to ₹8,516 crores in 2015-16. Loan Agreement for EDFC-3 amounting to 650 million US\$ was signed with World Bank during the year 2016-17. With this complete funding arrangements for EDFC & WDFC have been finalized.

Progress of Work

Civil works in different sections of EDFC and WDFC are progressing well. Earthwork is progressing in more than 180 Km stretch of Bhaupur-Mughalsarai section of EDFC. Work on 28 Major bridges & more than 275 Minor bridges is also in progress in this section. Mechanized track linking work is on full swing on both the corridors. More than 30% of track linking has been completed in this section till September 2017. Similarly, 276 kms of tracks have been linked in the Bhaupur-Khurja section of EDFC till September 2017. DFCCIL's contribution towards the environment and sustainable development is being recognised worldwide. DFCCIL has been awarded the prestigious 'Golden Peacock Award for Sustainability' in transport sector for the year 2016.

Land Acquisition

DFC is passing through 9 states, 61 districts and 2100 villages. A number of hurdles/impediments have been removed and considerable progress in land acquisition has been achieved. As a result, 97.3% of land (excluding the PPP portion of Sonnagar-Dankuni) and overall 93.5% has been acquired till September 2017. Compensation amounting to ₹12,317crore. (WDFC: 5,768 crore, EDFC: 6,549 crore) has been awarded till September, 2017.

Other Activities

During 2016-17, various CSR activities have been carried out under Corporate Social Responsibility (CSR). Skill development training leading to employment/self-employment is being imparted through Confederation of Indian Industries (CII). Trades covered include helper electrician, beauty and wellness, associate desktop publishing, data entry operator, retail sales associate, fitter mechanical, sewing machine operator, field technician - air conditioner etc. A total of 1,450 candidates have been imparted training under the program. Filtered water coolers and segregated dustbins provided at Railway stations in Mumbai, Delhi and Mughalsarai divisions.

DFC paving the way of Industrial Growth

Industrial Corridors have been planned using the backbone of the DFC. Delhi Mumbai Industrial Corridor(DMIC)/Amritsar Kolkata Industrial Corridor(AKIC) and DFCCIL are complementary to each other while Industrial Corridor will get benefits from the World-Class Rail Infrastructure of the DFC, the traffic originating from the Industrialized Corridor will contribute significantly to traffic on the DFC.

Future Corridors

In Budget 2016-17, three new DFC's were announced which include 2328 km long East-West Corridor from Kolkata to Mumbai, 2,327 km long North-South Corridor connecting Delhi & Chennai and 1,114 km long East Coast Corridor from Kharagpur to Vijaywada. Preliminary Engineering & Traffic Survey (PETS) for these corridors has already been completed.

The DFC project will be a game changer in transport and logistics sector. Both the corridors, excluding the PPP section, are aimed to be fully completed by 2020.

Mumbai Railway Vikas Corporation Ltd. (MRVC)

Mumbai Railway Vikas Corporation Ltd (MRVC Ltd), a PSU of the Government of India under Ministry of Railways (MOR) was incorporated under Companies Act 1956 on 12.07.1999, with an equity capital of ₹25 crore shared in the ratio of 51:49 between Ministry of Railways and Government of Maharashtra to implement the Rail Component of the integrated rail-cum-road urban transport project called 'Mumbai Urban Transport Project (MUTP),' with a vision to developing modern infrastructure for efficient, safe and sustainable Railway system in Mumbai suburban section so as to provide adequate train services to the commuters.

Mumbai Urban Transport Project:

Railway projects were identified through the project preparatory studies with the main objective of bringing down over crowding during peak hour and segregating the suburban train operation from the main line passenger and freight services.

Mumbai Urban Transport Project – I:

All works have been completed and MUTP I has been closed in March 2012.

Major Infrastructural Inputs in Mumbai Urban Transport Project Phase-I (Rail Component):

- Addition of 93 track kms. (5th & 6th 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 lengthening of all platforms
- 1500 V DC to 25 kV AC traction conversion on Central & Western Railway – traction conversion was completed on entire WR.

Major benefits accrued after completion of Mumbai Urban Transport Project - I :

- 559 additional services were introduced on Central & Western Railway
- 1,216 services were augmented from nine-car rakes to twelve-car.

- Due to induction of additional rakes, it was possible to increase in the number of coaches during the peak hours by 36%.
- The vehicle km per day increased by 36% after induction of new rakes.
- Conversion of existing 1500 V DC to 25 kV AC on WR has provided better train operation, energy saving etc.
- Saving of 30-35% energy due to State of the art 3 phase technology EMU rakes.
- Saving of Electrical Energy of more than 35% due to introduction of regenerative braking in new technology of DC/AC rakes.
- Resettlement & Rehabilitation—more than 15000 Project Affected Households.

Mumbai Urban Transport Project– II:

MUTP II was sanctioned by the Parliament in the budget of 2008-09 at the total cost of ₹5,300 crore. which is likely to be revised to ₹8,087 crore. (approx) at the time of completion of all Projects. MUTP II is partly funded by World Bank loan of ₹1,910 crore (USD 309 million) and balance from Government of Maharashtra and Ministry of Railways on 50:50 sharing basis. The work includes network expansion & capacity enhancement of Mumbai Suburban on Western & central Railways. Most of the works have already commenced under MUTP II.

Major Inputs in Mumbai Urban Transport Project- Phase II :

- Addition of 88 track kms.
- 72 new 12 car rakes (864 coaches) procured.
- 1500 V DC to 25 kV AC conversion on Central Railway (172 Track km), completed in June 2015.
- Resettlement & Rehabilitation of 2,839 Project affected households.

Expected benefits of Mumbai Urban Transport Project-II :

- 200 additional suburban services
- 20% additional carrying capacity will be created
- Segregation of main-line and suburban rail operation
- Energy saving of around 35%.
- Additional infrastructure to prevent trespass control works

Running of 12 - Coach Electrical Multiple Unit (EMU) Trains on Harbour Line (MUTP2C):

The project involves infrastructure works for extending the platforms at 16 stations on CR and 5 stations on WR, and procurement of 153 coaches, at the cost of ₹714.10 crores which was sanctioned separately during the Rail Budget 2012-13 to be funded by Government of Maharashtra and Ministry of Railways on 50:50 basis. The project was completed in April, 2016 and all the services presently running on Harbour line with 12 Coach EMU.

Mumbai Urban Transport Project-III

MUTP III has been included in the Pink Book (item no. 597) 2015-16 at the total cost of ₹10,947 crore. The works under MUTP III are as follows :

SNo.	Name of the work
1.	Doubling of Panvel-Karjat on Central Railway
2.	New Suburban corridor link between Airoli-Kalwa (elevated) on Central Railway
3.	Quadrupling of the Virar-Dahanu Road on Western Railway
4.	Procurement of Rolling Stock
5.	Trespass Control on mid-section on Central & Western Railways
6.	Technical Assistance

Benefits of Mumbai Urban Transport Project-III

The following benefits are expected to accrue after completion of MUTP-III

- Expansion of suburban network towards north of Mumbai
- Induction of 564 EMU coaches in the system.
- 300 additional suburban services i.e. additional 10% over existing services
- Trespass control measures at 22 vulnerable mid section locations.

Way Ahead

A. New Suburban Corridors

- Virar-Vasai - Panvel section
- 3rd & 4th line between Pune & Lonavala

B. Premium Corridors

- Fast elevated corridor between CSTM-Panvel with spur to Navi Mumbai International Airport (NMIA)
- Bandra to Virar

C. Augmentation of Corridors

- 3rd and 4th Lines Kalyan-Kasara
- 3rd and 4th Lines Kalyan-Karjat
- 5th & 6th additional lines between Borivali-Virar on Western Railway

D. Capacity Augmentation

- Communication Based Train Control (CBTC) on Harbour line from CST-Panvel
- CBTC on slow corridors of main lines of CR & WR (cost including conventional rolling stock for additional services)

Braithwaite & Co. Ltd (BCL)

Braithwaite at a Glance & its Performance is a leading Heavy Engineering Company in India, having its three manufacturing units located in West Bengal. Administrative control of BCL was transferred to Ministry of Railways on 06.08.2010 from Ministry of Heavy Industries & Public Enterprises. BCL's major product range includes manufacturing of newly built Wagons, Repairing of Wagons, Structural Steelwork, Cranes and



BOBRNHSM1 - NTPC

Steel Castings (Bogie & Coupler). The Company got accredited with ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 standards.

BCL's core competency is in developing & manufacturing of various types of wagon mainly for Indian Railways. Recently BCL has executed a contract awarded by M/s IRCON International Ltd. for fabrication of 19 x 123 m span Bridge Girder for Railway cum Road Bridge over river Ganga at Patna, having a project cost of Rs. 230 Cr (Approx). The Company is also pioneer of manufacturing of various types of Cranes and supplied the same in major Ports and Steel / Power Plants etc The Company also undertakes the job of upgradation / revamping / AMC of different types of cranes. Major performance highlights are as follows:



Milk tank van

Particulars	2015-16	2016-17
Production of Newly Built Wagons (No.)	526	777
Production of Repair Wagon (No.)	1,269	915
Sales (₹ in Lakhs)	12,070.32	15,418.54
Net Profit (after tax) (₹ in Lakhs)	64.48	895.50

BCL completed and delivered 915 repairing wagon in 2016-17 and achieved excellent rating in MoU 2016-17 in this parameter. Substantial increase of Newly Built Wagons also took place in 2016-17 compared to production in 2015-16. However, the year 2016-17 could not be a year of success due to various unforeseen constraints mainly due to Involvement of several prototype wagons hindering bulk productions, non-availability of critical inputs for production of wagon and low price of wagons, inadequate remunerative order in hand resulting into low production etc.

Technological developments, innovations and activities of importance:

BCL is making continuous efforts to develop its products commensurate with new technologies coming up in the market. In such developmental process the company could achieve the following in the year 2016-17 under review.

- i) Approval of Prototype 25T BOXN Wagon received from RDSO after completion of various tests successfully including Oscillation Trials. The type of wagon with higher axle load is manufactured for the first time in India for operating in dedicated routes of Indian Railways.
- ii) Approval of Prototype Milk Tank Van received from RDSO on successful completion of field Trials. The Milk Tank Van manufactured by the Company is of latest & upgraded design made by RITES with modern technologies.
- iii) Approval of Prototype BOBRNHSM1 Wagon received from RDSO which enabled commencing series production. This wagon is against order from NTPC. The wagon is an upgraded design of conventional BOBRN wagon with improvements like BMBS, CRF in centre sill, 70 BD Coupler etc.



BOXNS

The company could complete manufacture and obtain approval of most of the Prototype wagons in 2016-17. This enabled the company to concentrate series production in 2017-18.

The future outlook for the segment of wagon repairing / rehabilitation job is also bright keeping in view the expected order of repairing of 2200 nos. BOXN wagons for S.E. Railway in the year 2017-18.

Taking into consideration of experiences of previous years, the company has emphasized to execute the only remunerative orders of railway wagons. The company has also made plans to reduce dependence on the business only in wagon segment. The expansion & diversification plans include entry into civil sector and going for business in a large volume in the field of structural fabrications & cranes apart from other possible areas of business. The company is also giving thrust in the following areas for new business:

- a) Exploring more opportunities of wagon repair / rehabilitation business in various zonal railways.
- b) To enter into infrastructure projects in the field of Civil Construction.
- c) To manufacture specialized high capacity Rail Cranes through foreign collaboration. In this regard, the company has recently entered into MOU with an organization of international repute, M/s. Kirow Ardelt GmbH, Germany, for technical knowhow.
- d) To execute high valued Structure Fabrication orders.

With various steps taken for development and expansion as well as giving more focus on existing core products, the company foresees bright future ahead.



Roll on Roll off (Ro Ro) Service, KRCL