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Indian Railway consists of an extensive network spread over 109,221 Km. covering 6906 stations. Operating on three gauges - broad gauge (1676mm)-meter gauge (1000 mm) and narrow gauge (762 and 610 mm), trains in India carry about 17.7 million passengers and 1.49 million tonnes of freight every day. Broad gauge although forming 72 % of the route, generated 98.5% of freight output and 90.5% of the passenger output during 2002-03. Almost all the double/multiple track sections and electrified routes lie on broad gauge 16272 route kms, constituting over 26 % of the total network and 33% of broad gauge network on Indian Railway is electrified.

Indian Railways has nearly 1,19,984 bridges of which 9792 are major bridges. In 2002-03, 1151 bridges were rebuilt/rehabilitated. The transport effort is sustained through the use of 7681 locomotives, 214760 wagons and 44756 coaching vehicles. Over two lakh thirty thousand telephone exchange line, 6809 long haul MW Kms., 9138 optical fiber communication route Kms and over 1686 trunk tele channels kms distinguishes Indian Railway telecom network.

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terms of transport output is 424 BTKMS, during the final year of the X plan (2006-07). During 2002-03, the revenue earning freight traffic moved by Railways was 518.7 million tonnes. The total passenger traffic in the year was 5048.2 million originating passengers. The growth rate of transportation, in general, is directly related to the growth of economy, the mobility of the population and other related factors. The Indian economy in the last few years has seen a robust growth and is expected to grow at the same rate in the next two years of the Xth Plan. Indian Railways has planned to carry the traffic offered by the buoyancy in the economy. The increased output of basic industries such as power, steel, cement, fertilizers etc. is foreseen as necessitating facilities for bulk transport in which the Railways have a comparative advantage. The increasing rate of urbanization was also expected to generate demand for rapid transit system.

The Xth Five Year Plan had envisaged a growth rate of 4.8% per annum of originating loading and 3.5% per annum of freight output in terms of billion NTKM. As compared to this the growth of originating loading in the first three years of the Xth Plan is expected to be 5.6% and the freight output in terms of billion NTKM is 5.8%.

On the passenger traffic front however, the growth rate vis-a-vis target has been lower. There was a dip in the number of originating passengers in 2002-03 due to the upward revision of the passenger fares. Further there has been a shift in the short distance passengers to the road sector with the expansion and growth of road network. Against an envisaged growth rate of 2.6% per annum, the actual rate of growth of originating passengers in the first three years of the Xth Plan is likely to be 1.2%. However the passenger traffic in terms of passenger kms. has grown at a rate of 3.9% per annum.

The thrust areas identified for Xth Plan period (2002-07) included strengthening of high density network-investment towards building up capacity, technological upgradation of assets for improving efficiency, throughput and increasing average speed of trains, utilizing information technology, improving safety of operations by replacement of over-aged assets through Special Railway Safety Fund, mobilization of additional resources through private-public participation in Railway projects and to increase share of passenger and freight traffic. Large investments in wagons, locomotives and tracks were foreseen and planned for, to augment the transport capacity of Indian Railways. Investment was needed for opening alternative routes to the congested corridors, which included converting meter gauge tracks to broad gauge.

During the Xth plan it has been planned to wipe out accumulated arrears of asset renewals as well as to take care of the fresh accruals. To finance the liquidation of accumulated arrears of such overaged assets, by providing for their replacement, a Special Railway Safety Fund had been created in 2001-02. The replacement of identified assets is being undertaken from this fund with the objective of completing the same by 2006-07. Annual arisings of renewal of overaged assets during the Xth plan period are being planned simultaneously through Depreciation Reserve Fund (DRF).

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To meet the transport demand of future and to ensure safe services to the customers, Indian Railways have laid down ambitious plans for enhancing transport capacity through upgrading technology and introduction of improved
management systems. A critical issue to bear in mind is that Railway infrastructure is capital intensive and has a long gestation period.

Indian Railways (IR) has laid thrust on acquiring high-powered electric and diesel locomotives. State of art high capacity 6000 H.P. Electric locomotives and 4000 H.P. diesel locomotives have been imported along with Transfer of Technology (TOT). Manufacture of these locomotives is also been acquired and commissioned into commercial services, with TOT for manufacture in India. RCF is also exploring the possibility of attracting funds from other sources which include State Governments, beneficiary industries, port infrastructure companies etc. A beginning has already been made and execution of some projects within different models of cost sharing with State Governments, Private agencies etc. are already going on. The total BG Kms. added during the X Plan is expected to exceed 5000 Kms.

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(2) Target for additional BG Lines

Traditionally, the Railways have financed the augmentation of line capacity through New Lines, Gauge Conversion and Doubling from within the funds allocated by Ministry of Finance towards Capital expenditure. However, considering the large shelf of projects within these three activities, these funds are not found to suffice for completion of the projects within a reasonable time frame. The Railways have explored the possibility of attracting funds from other sources which include State Governments, beneficiary industries, port infrastructure companies etc. A beginning has already been made and execution of some projects within different models of cost sharing with State Governments, Private agencies etc. are already going on. The total BG Kms. added during the X Plan is expected to exceed 5000 Kms.

(i) Track:

During the X-Plan period, an endeavour to upgrade the goods trains for high speed. Indian Railways would lead to optimal utilisation of the existing infrastructure, rolling stock and man-power and, in the process, not only increase revenue from freight traffic but also effect substantial reduction in operational cost.

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In the case of freight trains, pay load to tare ratio and introduction of self steering bogies.

(iii) Operation of high speed freight trains on Indian Railways:

Till recently, the Indian railways had been operating freight trains with a maximum speed of 75 /80 kmph. A modified design of Casunub bogie fitted to airbrake wagons has enabled wagons to be run at a maximum speed of 100 kmph.

TECHNOLOGICAL UPGRADEATIONS

High horse power Electric Locos, Diesel Locos and Improved technology LHB type coaches have been introduced on the Indian Railways. The technology to produce such Locos and coaches has also been adopted on Indian Railways as a step towards technological upgradation. Also high-speed goods wagons are being introduced to upgrade the goods trains for high speed.

The Indian Railways have compacted the first phase of the computerized Freight Operation Information System to enable online tracking of cargo. The second phase of the project covering Terminal Management System would be completed in 2004-05 and would improve the quality of services substantially. The increased use of IT by Indian Railways would lead to optimal utilisation of the existing infrastructure, rolling stock and man-power and, in the process, not only increase revenue from freight traffic but also effect substantial reduction in operational cost.

During the X-Plan period, an endeavour to upgrade technology in all spheres with the objectives of improving reliability, reduce maintenance requirement, increase customer satisfaction and to reduce cost of operation has been made. The technology initiatives include the following:-

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(a) Thrust is to be given to strengthening of Golden Quadrilateral and diagonals connecting the four metros. Active cooperation and participation of several non-Railway agencies in this effort are being sought. This includes entering into funding arrangements with State Governments, other Ministries and private parties.

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iv) Coaches & EMUs: Introduction of all stainless steel coaches to reduce maintenance requirements, use of air-springs in EMUs to improve riding comfort, etc.

(v) Computer based Centralised Traffic Control system: Initiatives has been taken to introduce Computer based Centralised Traffic Control system on Ghaziabad - Kanpur section under modernisation of Signalling and Telecommunication system on this system.

SAFETY

Implementation of Corporate Safety Plan

Railways have formulated a Corporate Safety Plan to enhance safety (2003 to 2013). The main objectives of the Corporate Safety Plan are to reduce the number of accidents and to reduce chances of passenger fatality in consequential train accidents etc.

While clearing of the arrears of replacement of tracks, bridges, signaling gears and rolling stock would be addressed through the SRSF, annual arising for these items will be taken care of by normal provisioning under DRFE. In addition, in the plan period, thrust will be given on safety enhancement works as identified and detailed in Corporate Safety Plan. The total expenditure involved for these safety enhancement works would be Rs. 31,835 cr.

Special Railway Safety Fund

A non-lapsable Special Railway Safety Fund of Rs. 17,000 crores was set up with the approval of the Government. The funding was to be done by a dividend free grant of Rs. 12,000 crores from the General Exchequer and Rs. 5,000 crores to be generated by the Ministry of Railways by levy of safety surcharge on passenger fares. The objective was to liquidate the accumulated arrears of renewal of assets up to 1.4.2001 within a time frame of 6 years from 2001-02 to 2006-07.

Out of Rs. 17,000 crore of Non-Lapsable Special Railway Safety Fund (SRSF) set up in 2001-02, to wipe out arrears in renewal and replacement of over-aged assets within a time frame of six years, the expenditure in first three years is Rs. 6504.38 crores. For the year 2004-05, the total allocation (Net) at the time of BE for Special Railway Safety Fund is Rs. 2931 crores.

Anti Collision Device: An Anti-Collision Device (ACD) has been developed by Kankan Railway Corporation designed to prevent collisions like situations e.g. head-on collisions, side and rear-end collisions and those caused due to infringement by derailed vehicles on adjoining tracks. This device also helps in detecting train parting, and provides audible and visual warning at level crossing gates when trains approach. The system works on satellite-based Global Positioning System (GPS) and Angola Deviation count principle for identification of track layout. The ACD is an intelligent micro-processor based equipment. It consists of central processing unit, a global positioning system, and a digital modem for communication with other ACDs. When installed on a locomotives, brake vans and at stations and level crossing gates, these ACDs network among themselves to prevent accident like conditions.

The first prototype of ACD was demonstrated by RRCL in December, 1999. After limited trials, the device was put on extended field trials on Jalandhar - Amritsar section of Northern railway in 2002-03.

To start with, provision of ACD on about 1735 Route Kms. BG section of Northeast Frontier railway has been taken in had. Total cost of the work is about 65 crores. This shall be completed in the year 2004-05. Further sanctioned works of provision of ACD on about 1730 Route Kms. of sections on Northern, Southern, South Central and South Western railways shall be taken in hand after the successful completion of Northeast Frontier railway pilot project. Additional ACD route survey on about 10,000 route Kms. has also been sanctioned on important sections of Indian Railway. On present day prices, its introduction on the entire IR network would cost about Rs. 1800 crores.

Crash Worthiness of Coaches: To improve the crash worthiness of coaches, as an immediate measure, coach interiors have been re-designed with improved fittings and features, which would not cause injury. Simultaneously, the coach body is being re-designed to absorb more impact so as to keep passenger carrying areas intact.

Longer Rails: Indian Railways and Bhilai Steel Plant of Steel Authority of India Limited are also planning together to produce longer rails i.e. 26 metres and 65 or 78 metres, instead of the conventional 13 metres length to reduce the number of welds in the track. This would ensure greater safety of track. The potential for wild features on Long Welded Rail(LWR) and Continuous Welded Rail(CWR) would significantly reduce.

Integrated Modernisation Plan (2005-2010)

Railways have formulated an Integrated Modernization Plan covering the period 2005-06 to 2009-2010 with the aim towards transforming the Indian Railways into a modern system of global standards. It is hoped that the initiatives outlined will go a long way in bringing about the desired transformation. The total expenditure involved for these identified items would be about Rs. 24,000 crores.

Saliency features of the Plan are:

Passenger Business Segment
- Towards high speed travel.
- Shatabdi/Rajdhani trains to run with latest technology coaches.
- Integrated and Extended National Train Enquiry System.
- Expansion of Computerised Passenger Reservation System.

Freight Business Segment
- Running of Freight Trains at 100 kmph on identified sections.
- Completion of 75 Throughput Capacity Enhancement works.
- Development of 50 Modern Freight Terminals.
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Special Railway Safety Fund

A non-lapable Special Railway Safety Fund of Rs. 17,000 crores was set up with the approval of the Government. The funding was to be done by a dividend free grant of Rs. 12,000 crores from the General Exchequer and Rs. 5,000 crores to be generated by the Ministry of Railways by levy of safety surcharge on passenger fares. The objective was to liquidate the accumulated arrears of renewal of assets up to 1-4-2001 within a time frame of 6 years from 2001-02 to 2006-07.

Out of Rs. 17,000 crore of Non-Lapable Special Railway Safety Fund (SRSF) set up in 2001-02, to wipe out arrears in renewal and replacement of over-aged assets within a time frame of six years, the expenditure in first three years is Rs. 6504.38 crores. For the year 2004-05, the total allocation (Net) at the time of BE for Special Railway Safety Fund is Rs. 2933 crores.

Anti Collision Device: An Anti-Collision Device (ACD) has been developed by Konkan Railway Corporation designed to prevent collisions like situations e.g. head-on collisions, side and rear-end collisions and those caused due to infringement by derailed vehicles on adjoining tracks. This device also helps in detecting train parting, and provides audible and visual warning at level crossing gates when trains approach.

The system works on satellite-based Global Positioning System (GPS) and Angula Deviation count principle for identification of track layout. The ACD is an intelligent micro-processor based equipment. It consists of central processing unit, a global positioning system, and a digital modem for communication with other ACDs. When installed on a locomotive, brake vans and at stations and level crossing gates, these ACDs network among themselves to prevent accident like conditions.

The first prototype of ACD was demonstrated by KRCL in December, 1999. After limited trials, the device was put on extended field trials on Jalandhar - Amritsar section of Northern railway in 2002-03.

To start with, provision of ACD on about 1735 Route Kms. BG section of Northeast Frontier railway has been taken in had. Total cost of the work is about 65 crores. This shall be completed in the year 2004-05. Further sanctioned works of provision of ACD on about 1750 Route Kms. of sections on Northern, Southern, South Central and South Western railways shall be taken in hand after the successful completion of Northeast Frontier railway pilot project. Additional ACD route survey on about 10,000 route Kms. has also been sanctioned on important sections of Indian Railway. On present day prices, its introduction on the entire IR network would cost about Rs. 1800 crores.

Crash Worthiness of Coaches: To improve the crash worthiness of coaches, as an immediate measure, coach interiors have been re-designed with improved fittings and features, which would not cause injury. Simultaneously, the coach body is being re-designed to absorb more impact so as to keep passengers carrying areas intact.

Longer Rails: Indian Railways and Bhilai Steel Plant of Steel Authority of India Limited are also planning together to produce longer rails i.e. 26 metres and 65 or 78 metres, instead of the conventional 13 metres length to reduce number of welds in the track. This would ensure greater safety of track. The potential for wild features on Long Welded Rail(LWR) and Continuous Welded Rails(CWR) would significantly reduce.

Integrated Modernization Plan (2005-2010)

Railways have formulated an Integrated Modernization Plan covering the period 2005-06 to 2009-10 with the aim towards transforming the Indian Railways into a modern system of global standards. It is hoped that the initiatives outlined will go a long way in bringing about the desired transformation. The total expenditure involved for these identified items would be about Rs. 24,000 crores.

Salient features of the Plan are:

Passenger Business Segment

- Towards high speed travel.
- Shatabdi/Rajdhani trains to run with latest technology coaches.
- Integrated and Extended National Train Enquiry System.
- Expansion of Computerised Passenger Reservation System.
- Expansion of Computerised Unreserved Ticketing System.
- Computerisation of Parcel Management System.
- Modern and environment friendly toilets in coaches.
- Mechanised cleaning of Stations.
- Mechanised cleaning of Coaches.
- Extension of Coaching Operations Information System (CO IS) for improved passenger traffic operations.
- Introduction of Public Address Systems on important trains.
- Improved safety features in coaches - Internal and External crashworthiness, anti-climbing features and use of fire retardant material in coaches.

Freight Business Segment

- Running of Freight Trains at 100 kmph on identified sections.
- Completion of 75 Throughput Capacity Enhancement works.
- Development of 30 Modern Freight Terminals.
Logistic support for improving share in freight traffic

A number of steps have been taken during tenth plan period to improve Railway’s share in freight Traffic. Some of these are listed below:--

- Rationalisation of freight tariff structure.
- Total number of classes for charging freight reduced from 59 to 27.
- The ratio of the highest and lowest freight rates reduced from 8.0 to 2.8.
- Reduction in Freight rates from 3.7% to 10.7% for certain high rated commodities.
- Trainload benefit for all block rakes and commodities.
- Higher Powers given to General Managers for flexible rating policy for specific pairs of stations.
- Incentives to Promoter Customers generating freight earnings of more than 25 crores per annum for traffic originating from the sidings.
- Policy to attract short lead traffic through higher freight concessions.
- Computerisation of freight movement through Freight Operations Information System.

At present the approaches to all major urban agglomerations are extremely congested with passenger and freight trains competing for available line and berthing capacities. Creation of adequate terminal capacity will remain an area of vital importance to the Railways.

The approaches to major yards, important freight and coaching terminals particularly on the high-density traffic routes had been identified for improvements in the X Plan. Facilities would also be created for running of longer passenger trains (26/24 coach lengths) on identified routes.

At the same time, the user industries would also have to take effective steps to modernise loading and unloading systems.
Introduction of high axle load operations on selected routes.
Warehousing facilities near rail terminals through public/private participation.
Web based Claims Management System.
Extension of Freight Operation Information System to cover Terminal, Rake and Crew Management Modules.
Introduction of Double Stack Containers on identified routes.
Modernisation of Freight Maintenance.
Induction of corrosion resistant stainless steel body wagons.
Induction of light weight aluminium wagons to increase carrying capacity.
Modernisation of Guard's brakevan.
Provision of Bogie Mounted Brake System on freight stock.
Development of Roll-On-Roll-Off door-to-door service.
Locotrol for Diesel and Electric locomotives on identified Sections.

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- Incentives to Prime Customers generating freight earnings of more than 25 crores per annum for traffic originating from the sidings.
- Policy to attract short lead traffic through higher freight concessions.
- Computerisation of freight movement through Freight Operations Information System.

Providing warehousing facilities through CWC and private freight terminals. MOU has been signed for providing integrated freight terminals at 22 locations in the country.
Port connectivity and inter-modal transport.
Introduction of more and more number of high speed wagons to carry goods faster to the destination.
Introduction of Refrigerated parcel vans to carry perishables and food stuff across the country on express trains.

It was expected that in the X Plan about 1500 bridges would have to be strengthened/rebuilt yearly not only on account of the backlog but also larger arising of distressed bridges on account of heavier and more intensive traffic. In 2003-04, 1544 bridges were rehabilitated.

The objective of the X Plan was to complete the doubling of the quadrilateral trunk routes, to undertake construction of third and/or fourth lines on certain very busy routes and to undertake doubling on other important routes where the existing single line had reached its saturation limit. In all about 1500 km. of doubling are planned to be completed in X Plan. During the Xth plan 742kms. of doubling is likely to be completed during the first three years of the plan period.

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The approaches to major yards, important freight and coaching terminals particularly on the high-density traffic routes had been identified for improvements in the X Plan. Facilities would also be created for running of longer passenger trains (26/24 coach lengths) on identified routes. At the same time, the user industries would also have to take effective steps to modernise loading and unloading systems.
Keeping in view the massive transport requirements of the metropolises, the Railways propose to continue investment in projects already on hand and complete all the on-going projects. A joint venture with the Govt. of Maharashtra under the auspices of MRVC (Maharashtra Rail Vikas Corporation) is already underway for implementing new projects of the Mumbai suburban network. Similar joint ventures are also on with Govt. of West Bengal for extension of the Cuttack metro and with Govt. of Tamil Nadu for development of Mass Rapid Transit System at Chennai.

### Table: ACQUISITION OF ROLLING STOCK IN X PLAN

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<thead>
<tr>
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<th>Expected acquisition of Rolling Stock during X Plan is given below:-</th>
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<tbody>
<tr>
<td></td>
<td>Original targets Proposed by Railways</td>
</tr>
<tr>
<td>Diesel Locomotives</td>
<td>444</td>
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<tr>
<td>Electric Locomotives</td>
<td>34</td>
</tr>
<tr>
<td>Coaches (conventional)</td>
<td>9,160</td>
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<tr>
<td>EMUs</td>
<td>1,965</td>
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<td>Waggons (FWUs)</td>
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### Policy and Procedures for Private Participation in Railways

#### BOLT/BOT Scheme

Projects identified for taking up under BOLT Scheme were Gauge Conversion, Doubling of existing single lines, electrification projects, telecom projects, supply of rolling stock such as wagons and passenger coaches, diesel and electric locos, supply of tracks, machines etc. The scheme had been successful. The new BOLT scheme, with features which are more investor-friendly, is to be put on trial for 2 projects. Meanwhile, a copy of the draft model documents has been sent to some zonal Railways, to facilitate compilation of the requisite technical and other details, which are to form part of the BOLT tender for these 2 projects. With role of financier being recognized and comfort being provided to financier by means of co-participation arrangement between Railways, Concessionaire and financier, - a feature which was absent in the earlier BOLT scheme, this scheme is likely to provide substantial investment by private agencies in infrastructural projects, where the BOLT scheme failed.

### Luxury Tourist Trains

The Railways run luxury tourist trains in collaboration with the State Tourism Departments e.g. the Palace on Wheels in collaboration with the Rajasthan Tourism Corporation (RTDC), the Royal Orient Express with the Tourism Corporation of Gujarat Ltd. (TCGL) and the Deccan Odyssey in collaboration with the Maharashtra Tourism Development Corporation (MTDC). An MOU has also been signed with the Karnataka State Tourism Development Corporation (KSTDC) for running such a luxury tourist train. The costs and the revenue in these projects are shared by the Railways and the participating State on a predetermined ratio.

### Indian Railways

Indian Railways is operating in the core sector of the economy and to strengthen, modernise and expand the network, it seeks to attract private capital as also State funding in the following categories of rail projects viz. projects for port connectivity, Gauge Conversion, Connectivity to Remote/Backward areas-New Lines, Doubling, Electrification and Suburban Transportation.

(i) A Joint Venture named K-RIDE (Rail Infrastructure Development (Karnataka) Limited has been formed jointly with the State Government of Karnataka for early completion of four identified projects in the State of Karnataka. K-RIDE will execute these projects through Project Specific SPVs. First such SPV named HRMDC (Hassan - Mangalore Rail Development Co.) has been formed with equity participation from Ministry of Railways, Government of Karnataka and K-RIDE. Strategic partners and other financial institutions will also take part in the equity contribution. Besides, Government of Karnataka has agreed for funding of three rail projects by contributing two-thirds of the cost.

(ii) The Government of Tamil Nadu is also continuing to share two-thirds of the cost of Mass Rapid Transport System Project between Thirumayilai and Vellacherry; it has also been agreed to contribute 50 percent of the cost of Salem - Candolim Gauge Conversion Project and Chennai Beach - Tambaram - Chenglapur Suburban Gauge Conversion project.

(iii) Among other significant developments regarding partnership with State Governments for funding of projects, is the signing of a MOU between Government of Jharkhand and Ministry of Railways, for execution of six projects estimated at Rs. 1997 crores. Two-thirds of the project cost will be borne by the State Government and one-third by the Ministry of Railways. These projects will be completed in a time-frame of five years.

(iv) Apart from participating in MBVC (Mumbai Rail Vikas Corporation), Maharashtra Government through CIDCO is contributing two-thirds of the...
Regarding electrification of routes, objective of the X Plan was to complete the ongoing works, to take up electrification of the remaining un-electrified sections of the golden quadrant as also to cover certain missing links. Conversion of 1500 VDC suburban system in Mumbai area (CR & WR) to 25 KV AC was planned in the X Plan as it is no longer possible to increase the frequency of the suburban services on the DC system as it is not capable of taking any additional electric load is progressing well.

The objective in X Plan was to construct project oriented lines to serve new industries, complete missing links for developing alternative routes, lines required for strategic reasons, lines for establishment of new growth centres and to develop backward areas. About 3310 kms. of New Lines were planned for completion in the X Plan. However, the achievement on this front is likely to be around 613 kms. only during the first three years of the X Plan.

One additional project of Udhampur Srinagar-Baramula has also been taken up as national project at a cost of about Rs. 5000 crores, which is to be funded outside the Railway Plan.

Signalling is an area where modernization and replacement are urgently needed. In an era of quantum technological advancements resulting in better equipment & providing greater safety through technical aids, e.g., provision of Ancillary Warning System (AWS) etc., a total of Rs. 1600 crores outlay was proposed in the X Plan. The provisionally estimated expenditure would exceed the proposed outlay.

Keeping in view the massive transport requirements of the metropolises, the Railways propose to continue investment in projects already on hand and complete all the on-going projects. A joint venture with the Govt. of Maharashtra under the auspices of MRVC (Maharashtra Rail Vikas Corporation) is already underway to implementing new projects of the Mumbai suburban network. Similar joint ventures are also on with Govt. of West Bengal for extension of the Cuttack metro and with Govt. of Tamil Nadu for development of Mass Rapid Transit System at Chennai.

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**PUBLIC-PRIVATE PARTNERSHIP IN RAIL PROJECTS**

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(vii) A Special Purpose Vehicle named PRCL (Pipavav Railway Corporation Limited) which was formed with equal equity participation from Ministry of Railways and GPPL (Gujarat Pipavav Port Limited) for construction, Operations and Maintenance of Surendranagar- Pipavav Broad Gauge line, has implemented Surendranagar - Pipavav Gauge conversion/New Line project. The construction of this line has been completed and thrown open for Goods Traffic since March 2003. Earlier, connectivity of Mundra Port on the West Coast to the Broad Gauge network of Indian Railways has already been effected. Gandhidham - Palanpur gauge conversion is being implemented through involvement of Kandla and Mundra ports. Kutch railway Company, SPV formed with Kandla and Mundra ports, Government of Gujarat and RVNL are equity holders.

Implementation of certain Port Connectivity works under National Rail Vikas Yojana through Public-Private Partnership is being explored by Rail Vikas Nigam Limited.

Besides non conventional sources of revenue are also being tapped to supplement the internal generation of funds which are:-

- Commercial utilisation of Railway land and its surrounding - this envisages identification of certain station building and wagon loads in prime areas for advertisement as station-cum-commercial complexes.
- Revenue through commercial publicity, including grant of advertising rights on the wagons and selected passenger trains, advertising rights at level crossing gates and additionally advertising at Railway stations.
- Commercial utilisation of the Railways Right of Way proposed to be achieved by completing a nationwide, broad band telecom and multi media network by laying optical fibre cables.

**GLOSSARY**

- **Passenger Kilometre**: A passenger transported over one Km.
- **Net Tonne Kilometre**: Payload of one tonne carried over one Km.
- **Gross Tonne Kilometre**: A tonne, including payload, tare and weight of engine, carried over one Km.
- **Revenue Earning Traffic**: Traffic which is paid for by consignor or consignee.
- **Non-Revenue Traffic**: Traffic conveyed free for working the Railways.
- **Lead**: Average haul of a passenger or a tonne of freight.
- **Net Load**: Payload of passengers, luggage or goods carried by a vehicle or a train.
- **Wagon Turn-around**: Interval of time between two successive loadings of a wagon.
- **Train Kilometre**: Movement of a train over one Km.
- **Engine Kilometre**: Movement of an engine under its own power over one Km.
- **Vehicle/Wagon Kilometre**: Movement of a vehicle/wagon over one km.
- **Loaded wagon kilometer**: Movement of a wagon, including departmental, loaded with goods over one Km.
- **Route kilometer**: The distance between two points on a Railway system treating all lines (double, treble etc.) as a single line.
- **Running Track Kilometre**: The distance of multiple tracks (excluding track in sidings, yards and crossings at stations) i.e. double, treble etc., taken as two, three or more, as the case may be.
- **Track Kilometre**: The distance of running track kilometer and tracks in sidings, yards and crossings at stations.
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Ministry of Railways
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Fax: 91-11-2338 1224

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Joint Secretary (SIA)
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