सत्यमेव जयते

Interim Report of the Committee for Mobilization of Resources for Major Railway Projects and Restructuring of Railway Ministry and Railway Board

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Rail Bhavan
New Delhi

The Committee presents its interim Report for stakeholder comments views and discussion on the recommendation. These will be duly considered before the final report is submitted. A copy of the report may also be hosted on the Indian Railways website http://www.indianrailways.gov.in for inviting comments.

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Chapter 0: Preface

0.1 On the 22nd September 2014 (Office Order No. ERB-I/2014/23/39), the Ministry of Railways (Railway Board) constituted a Committee for making recommendations for the mobilization of resources for major railway projects and restructuring of Railway Ministry and Railway Board. The specific terms of reference (TOR) of this Committee state: "(i) Reorganizing and restructuring the Board and subsequently the Department so that policy making and operations are separated, the Department does not work in silos, policy making focuses on long term and medium term planning issues and operations focuses on day-to-day functioning of the Organization; (ii) Promote exchange of Officers between the Railways and other departments; (iii) Estimate financial needs of the Railways and ensure appropriate frameworks and policies are in place to raise resources, both internally and from outside the Government, to enable Railways to meet the demands of the future; and (iv) Examine and suggest modalities for implementing the existing Cabinet decision on setting up a Rail Tariff Authority and give recommendations." Especially in view of (i) and (iii), the TOR is fairly broad and, de facto, amounts to a blueprint for reforming the Indian Railways.

0.2 The history of the Railways in India is conventionally dated to 16th April 1853, when a train left Bori Bunder for Thane (then Tannah). Strictly speaking, this was the first commercial passenger train, since Railways were earlier used for other haulage purposes. With three steam locomotives (Sindh, Sultan and Sahib) that journey took 1 hour and 15 minutes in 1853. Bori Bunder station is no longer used. A non-stop EMU (electric multiple unit) train from Chhatrapati Shivaji Terminus to Thane still takes 57 minutes. The standard arguments in favour of the Railways, vis-à-vis other forms of transportation, figured even then. For instance, a report authored by R. Macdonald Stephenson in 1845 said, "A Calcutta merchant who desires to visit Mirzapore must incur an expenditure of pounds 70, and a loss of six weeks, if he avails himself of the Steam vessels, and if he proceeds by Dak the amount will be nearly the same, and the period required to perform the distance there and back will be about ten days of unremitting and most fatiguing travelling. The Railway will enable him to perform the entire distance to Mirzapore and back to Calcutta in thirty hours…These rates would unquestionably…induce very many to avail themselves of the facilities offered, who are at present of necessity prevented by the delay and loss of time, more than on account of the expense which is entailed."[1] The

[1] *Report upon the Practicability and Advantages of the Introduction of Railways into British India*, R. Macdonald Stephenson, 1845,https://archive.org/stream/reportuponpract00stepgoog#page/n10/mode/2up

Railways evolved, through the guarantee system. The issue of non-remunerative lines, and their funding, was a concern even then.[2]

0.3 In 1901, the recommendations of the Thomas Robertson Committee led to the initial formation of the Railway Board, later formalized in 1905 and reconstituted again in 1908 after the Railway Finance Committee[3] submitted its recommendations. The 1905 Indian Railway Board Act conferred the powers or functions of the Central Government under the Indian Railways Act of 1890[4] on the Railway Board. Subsequently, following the recommendations of the Acworth Committee (1920-21), there was the Separation Convention of 1924, leading to the separation of Railway finances from general finances. When the proposal for resolution was presented to the Legislative Assembly in 1924, the government stated the following. "In the first place, as far as State Railways are concerned, we want to abolish altogether this system of programme revenue voted for a year. We want to establish a proper depreciation fund, a depreciation fund arranged in a scientific and intelligible manner. Secondly, we want to build up Railway reserves. We want to build them up in order that our finances may be more elastic, in order that we may have provision to equalize dividends. And generally, we want to introduce a system of finance which while maintaining unimpaired the centrality of this House and while ensuring to general revenues a fair return from their Railway property, will be more suited to the needs of a vast commercial undertaking. Finally, and most important of all, we want to establish the principle, it is right and proper that the tax-payer, the State, should get a fair and stable return from the money it has spent on its Railways; but if you go further, if you take from the Railways more than that fair return, then you are indulging in a concealed way in one of the most vicious forms of taxation, namely a tax on transportation. One of the objects we have most at heart in putting these proposals before this House is to establish that principle."[5] Perhaps one should mention the Indian Railway Enquiry Committee of 1936-37, under the Chairmanship of Ralph Wedgewood. Among other things, this Committee was one of the first to flag passenger amenities, public relations and advertising. It also recommended the closing down of uneconomic branch lines. At the time of Independence in 1947, there were 42 separate Railway systems, including 32 lines operated by former Princely States. All of these were brought together under public ownership in 1951.

0.4 There is a long list of Committees that have examined the functioning of the Railways at various points in time. There have also been related documents. An indicative list is the following. There have also been Rail Tariff Enquiry Committees, Freight Structure Enquiry Committees and Railway Convention Committees. 1947 –Indian Railway Enquiry Committee; 1962 –Railway Accidents Committee; 1968 – Enquiry Committee on Railway Accidents (Wanchoo); 1968 –Kunzru Committee as part of the 1st Administrative Reforms

[2] See, for example, Ian J. Kerr, *Building the Railways of the Raj, 1850-1900*, Oxford University Press, 1995.
[3] *Report of the Committee on Indian Railway Finance and Administration*, East India (Railways), 1908.
[4] Revised in 1989.
[5] http://www.indianrailways.gov.in/railwayboard/uploads/codesmanual/ADMIN_FINANCE/AdminFinanceCh7_Data.htm

Commission; 1978 – Report of the Expert Group on the Capital Structure of Indian Railways; 1979 – Report of the High Level Committee on the Social Burdens of the Indian Railways; 1981-85 – Railway Reforms Committee (Sarin); 1993 – Railway Fare and Freight Committee (Nanjundappa); 1994 – Railway Capital Restructuring Committee (Poulose); 1994 – Committee to Study Organizational Structure and Management Ethos (Prakash Tandon); 1994 – Committee on Rationalization of Management Services (Gupta-Narain); 2001 – The Indian Railways Report (Rakesh Mohan); 2009 – Indian Railways Vision 2020; 2009 – White Paper on Indian Railways; 2009 – Expert Committee on PPP funding (Amit Mitra); 2010 – Indian Railways Accounting Reforms; 2012 – Report of the Expert Group on Modernization of Railways (Sam Pitroda); 2012 – High Level Safety Review Committee (Anil Kakodkar); 2014 – Report of the Committee on Creative Financing for Indian Railways (Montek Singh Ahluwalia); 2014 – India Transport Report (National Transport Development Committee); 2014 – the D. K. Mittal Committee; 2015 – the Sreedharan Committee (2015). This large number of reports has both a positive and a negative angle. On the positive side, this large number illustrates the importance attached to the Railways. On the negative side, repeated reports highlight the non-implementation of recommendations, compounded sometimes by the phenomenon of recommendations being conflicting. This Committee has gone through those earlier recommendations, with a focus on reports that are of more recent vintage. In addition, this Committee's report emphasizes the process, the road map of transiting to a more efficient Railway system. The recommendations of those earlier Committees are given in Annexure 1a. There has been an internal stock-taking by the Indian Railways on the implementation of the recommendations of some of these Committees, though not all. That is appended in Annexure 1b.

0.5 In terms of the recommendations of this Committee, this Report is structured into 7 Chapters and 4 Annexures. In order of sequence, these 7 Chapters are (1) The Role and Purpose of Indian Railways; (2) Ensuring Choice, Competition and Autonomy; (3) The Decision-Making Structure of IR; (4) Accounting Practices of IR; (5) Human Resource Management in IR;(6) Budgetary Relationships between Governments and IR; and (7) Financing and Generation of Resources by IR. A word of explanation is needed about the expressions used. This Committee visualizes choice and competition and the entry of private players. Today, the Indian Railway system is synonymous with a public sector provider. With the entry of private sector players, that need no longer be the case. Throughout this Report, by the expression Indian Railways, we will mean the broader railway network and providers, while IR will refer to the public sector provider. Thus, Indian Railways is broader than IR. Annexure 1 has already been mentioned. Annexure 2 contains data and tables pertaining to IR. It is also important to benchmark and learn from what other countries have accomplished. Annexure 3 is thus on the global railway restructuring experience, while Annexure 4 is on some global railway performance parameters.

0.6 The specific terms in the Committee's TOR are addressed as follows. Item (i) is covered in Chapters 1, 2, 3 and 5. Item (ii) is covered in Chapter (5). Item (iii) is covered in Chapters (4), (6) and (7). Item (iv) is addressed in Chapter (1), (2) and (3).

0.7 Finally, a word about why this Report is titled an "Interim" Report. The time frame given to this Committee was one of 9 months, which takes one to the end of August 2015. However, this Committee has decided to first prepare an Interim Report, which would then be placed in the public domain, so that comments can be received from everyone, and not only from people within the Railway system or the Railway Ministry. Once this consultation with stake-holders is over, including through conferences and workshops, the Final Report will be submitted in August 2015. Thus, this Interim Report has the characteristics of a draft. It represents work in progress and is submitted as a document for discussion and debate, which will also constitute inputs for this Committee to take into account before the Final Report is submitted in August 2015. The experiences of other countries have shown that Railway reform is a long process. The process, and the sequencing of reforms, is just as important as the terminal goal, perhaps even more so. Hence, the Final Report will flesh out much more the time-path and sequencing of restructuring and reforms. The extremely brief Epilogue at the end, just before the Annexures, indicates the tentative time-lines this Committee has in mind, as of now. But as has just been stated, this will expanded in the Final Report.

Chapter 1: The Role and Purpose of Indian Railways – Past, Present and Future

The Role of the Railways

1.1 "India is a vast and complex place. The phones seldom work, the mail is unreliable, the electricity is liable to sudden stoppages. There are numerous natural disasters and there are 800 million people. It is almost inconceivable that the country is still viable……Towards the end of my Indian journey I decided that India runs primarily because of the railway……It is impossible to imagine India without the railway, or to think what could possibly replace it."[6] "But when you have once introduced machinery into the locomotion of a country, which possesses iron and coals, you are unable to withhold it from its fabrication. You cannot maintain a net of railways over an immense country without introducing all those industrial processes necessary to meet the immediate and current wants of railway locomotion, and out of which there must grow the application of machinery to those branches of industry not immediately connected with railways. The railway-system will therefore become, in India, truly the forerunner of modern industry."[7] These are two completely different authors, writing with a gap of more than 100 years.

1.2 India has one of the largest railway networks in the world, regardless of the indicator used. A standard indicator is railway length in km, which includes urban/suburban mass transport systems and tracks used for freight, but not necessarily for passengers. The International Union of Railways has data to compare across countries and India has the 4th largest railway network in the world. The United States has 224,792 km, China has 103,144 km, Russia has 128,000 km and India has 64,460.[8] Among the top 10 countries in the world, using this indicator, 8 have nationalized railways, the United States and Canada being the only exceptions. Those absolute figures can be normalized by geographical area, or by population. Normalized by geographical area, each km of track covers 45.74 sq. km in India. This is roughly comparable to that in the United States, significantly lower than that in Germany, but much lower than the figures for Russia, China or Canada. Normalized by population, each km of track caters to 19,133 people in India. The Chinese figure is 13,227. Among countries with large railway networks, there is no other country with a figure like that of India for people covered per km of track. One would have to look to countries like Indonesia, Pakistan, Thailand or Vietnam.

[6] Paul Theroux, *The Imperial Way*, 1983.
[7] Karl Marx, *The Future Results of British Rule in India*, 1853.
[8] There are some problems with the data. For example, if railway lines used for common usage alone are counted, the Russian figure is more like 85,000 km. There are also time-lags with data. The 2012-13 Indian route length is 65,436 km, with 115,833 of track km.

Travel on the Indian railways during the years of the Raj. A comparison of the two classes: extracts from the diaries of an Englishman.

Gentlemen always carry with them a counterpane padded with wool, and a small pillow or two. At night the settee is converted into a sleeping berth by the aid of the counterpane and pillows. At daybreak the train stops to allow passengers time to eat the chota-hazare, or early breakfast, and inhale the cool, dewy air before the intolerable heat begins. Etiquette permits ladies and gentlemen to appear during this meal in the light sleeping costume always worn by through travellers. After the early breakfast comes the bath, dressing, and reading of the novel or newspaper. Native gentlemen used to travel first-class, but they made themselves such a nuisance to the English lady passengers by chewing pan, smoking their hookahs, and removing their clothing above their waists, that they were quarrelled with by English gentlemen, and soon by tacit agreement they learned to take the second-class cars, where they make themselves disagreeable to English clerks and soldiers only.

The swart Hindoos arrive at the station four or five hours before the starting of the train. They are always accompanied to the depot by friends, or dependents, numbering from two to a hundred, and the peasant, if his stay abroad is to be for a week or so, often fetches along a bag of rice, one of flour, a supply of ghee (or clarified butter), and a small donkey-load of sugar-cane; for he has heard that provisions are dear where he is going, and he chuckles at his foresight in taking his supplies with him. But the poor fellow finds at the last moment that the freight charges are such as to turn the scales the other way; he cannot, however, throw away his provisions, and so pays the bill with a heavy heart, and many groans and maledictions. There are often as many as one or two thousand natives at a station awaiting the arrival of a train. They are not admitted within doors until about an hour before the train starts. So they squat on their hams outside in the sun, chewing sugar-cane, eating sweetmeats, and chatting with those who have come to see them off. The noise, confusion, and stench are something wonderful. When the ticket office is opened the clatter of voices rises into a wild uproar as the crowd rushes in, each man fighting his way forward as best he can. When a native from the back country presents himself at the ticket-window he is told that his fare to such a place is, say one rupee six annas. Now he has all his life been accustomed to have one price asked him, and to pay another, and the state of mind of the English official may be imagined when he is asked if he will not take one rupee two annas for the ticket. If the native does not come instantly to terms he gets a rap from the stick of the policeman who stands nearby in order to expedite matters. The Hindoo next rushes to the freight agent to get his baggage weighed; and there again he tries to beat down the price asked. In the meantime the train has arrived, and is now ready to start. But the locomotive whistles and the station-bell rings in vain; only one half of the crowd is yet aboard. If one of them wishes to find a friend in the crowd he raises so terrific a yell for him — calling him by name — that the sound drowns even the locomotive whistle. It is usually half an hour after the advertised time before the last man is in. his place and the train moves off. There are no seats in the cars occupied by the natives; they all squat on the floor, first stripping themselves to the waist. "The third and fourth-class cars," says an anonymous writer, "are one and all distinguished by the quiet and the fragrance of a monkey-house, the roominess of a herring-barrel, and all the picturesqueness derivable from an endless welter of bare brown arms and legs, shaven crowns, and shaggy black hair, white cloaks, red wrappers, blue or scarlet caps and turbans, grinning teeth, rolling black eyes, and sharp-pointed noses adorned with silver rings so huge that you feel tempted to seize them and give them a double knock,— all exhaling a mingled perfume of coconut oil and overheated humanity sufficient to knock down a fireman."

1.3 The recent White Paper produced by the Ministry of Railways illustrates how important the Railways are for India.[9] Every day, there are nearly 21,000 trains – about 13,000 passenger trains that carry more than 23 million passengers and the balance freight trains that carry around 3 million tonnes of freight per day. There are only 4 countries in the world that carry more than 1 billion tonnes of originating freight a year and these are China, Russia, the United States and India. IR is a cheap and affordable means of public transport, certainly for passengers and covers 29 States and 3 Union Territories, across almost 8,500 stations, from Baramulla in the north to Kanyakumari in the south, from Naliya in the west to Ledo in the east. IR has played a significant role in the development and growth of industries. The textile industry in Mumbai, the jute industry in and around Kolkata and the coal industry in Jharkhand are examples. Raw materials are carried to factory sites and finished goods are carried to markets. Agricultural produce is carried cheaply through bulk rail transportation. Apart from the national integration objective, in times of natural calamities (droughts, floods, famines and earthquakes) and man-made calamities (disturbances, insurgency), IR has helped relief and rescue, as well as movements of police, troops and defence equipment, when required.

1.4 The recently published Economic Survey builds a case for public investment in the Railways.[10] "Railways are found to focus strong backward linkages (demand pull from other sectors) with manufacturing and services.[11]From the 2007-08 data (the latest year for which the input-output tables are available), it appears that increasing the railway output by Rs 1 would increase output in the economy by Rs 3.3. This large multiplier has been increasing over time, and the effect is greatest on the manufacturing sector. Investing in the IR could thus be good for 'Make in India'…Further, there are sectors where railway services are an input to production (forward linkages). An Rs 1 push in railway sector will increase the output of the other sectors by about Rs 2.5. This forward linkage has declined over time but this is largely endogenous to capacity constraints in the railways sector which has led to reliance on other modes of transport. Combining forward and backward linkage effects suggests a very large multiplier (over 5) of investments in the Railways." Even without these precise numbers, the multiplier effects are obvious enough.

[9] *Indian Railways, Lifeline of the Nation*, Ministry of Railways, February 2015.
[10] *Economic Survey 2014-15, Vol.I*, Department of Economic Affairs, Ministry of Finance, February 2015.
[11] Though *Economic Survey* says manufacturing, it actually means industry.

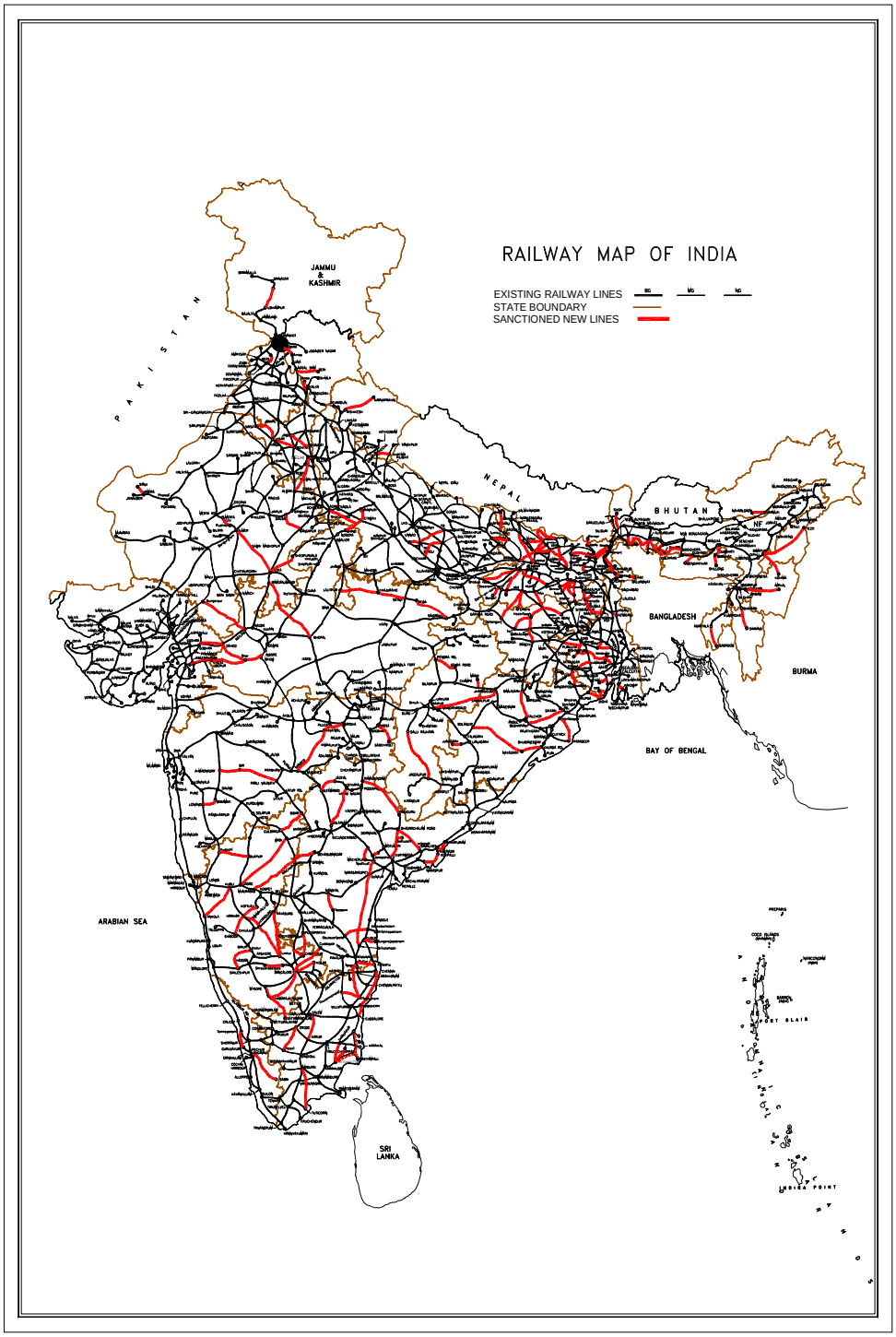

RAILWAY MAP OF INDIA
EXISTING RAILWAY LINES
STATE BOUNDARY
SANCTIONED NEW LINES
BG
MG
NG
JAMMU & KASHMIR
PAKISTAN
NEPAL
BHUTAN
NF
BANGLADESH
BURMA
BAY OF BENGAL
ARABIAN SEA
SRI LANKA
PORT BLAIR
INDIRA POINT

Table 1.1: Statistical Snapshot, 2013-14

Number of passengers carried (millions)	**8,397**
Passenger kilometres (billion)	**1,159**
Passenger earnings as % of gross earnings	**25.28**
Express long-distance passenger as % of passenger earnings	**80.49**
Average suburban lead (km)	**37.0**
Average non-suburban lead (km)	**257.5**
Number of railway stations	**7,172**
Number of railway stations identified for multi-functional complexes	**196**
Number of daily passenger trains	**12,961**
Average speed of mail/express trains on broad gauge (km/hour)	**50.6**
Average speed of ordinary passenger trains on broad gauge (km/hour)	**36.0**
Average rate per passenger km (paise)	**31.53**
Revenue originating tonnes (million)[12]	**1,051.64**
Net tonnes km (billion)	**691.66**
Bulk freight as % of goods earnings	**88.87**
Number of daily goods trains	**8,637**
Wagon turn-around time on broad gauge (days)	**5.13**
Average speed of goods trains on broad gauge (km/hour)	**25.9**
Average net load of goods trains on broad gauge (tonnes)	**1,686**
Average rate per NTKM (paise)	**137.5**
Proposals for private freight terminals	**47 (19 finalized)**
Working expenses as % of gross earnings (operating ratio)	**93.60**
Number of employees (thousands)	**1,334**
Wage bill as % of working expenses	**49.13**
Rate of return on capital (%)	**7.42**
Number of locomotives	**9,956**
Wagons	**2,45,267**
Coaches	**66,392**
Land owned by IR	**4.55 lakh hectares**[13]

[12] Excluding Konkan Railway.

IR's Performance

1.5 The benchmark for comparison is important. One kind of benchmark is temporal, the performance of the Railways over time. For instance, in 2013-14, route km has increased to 65,806 from 53,596 in 1950-51.[14] Freight carried has increased from 73 million tonnes in 1950-51 to 1.052 million tonnes in 2013-14. In days, the wagon turnaround has declined from 11 in 1950-51 to 5.13 in 2013-14. The wagon capacity has increased from 4.14 million tonnes in 1950-51 to 13.65 million tonnes in 2013-14. The number of originating passengers has increased from 1,284 million in 1950-51 to 8,397 million in 2013-14. The number of daily passenger trains has increased from 6,392 in 1980-81 to 12,961 in 2013-14. The seat/berth capacity has increased and so on. These are undeniable improvements. However, the point is that these supply-side improvements have not been commensurate with demand and requirements. As one instance, notice the slow speeds of passenger and goods trains indicated in Table 1.1. This isn't a new phenomenon. In September 1954, a rather prescient "Note on Railways", was authored by Shri A.K. Chandra, Secretary, Railways, and discussed in a Cabinet meeting.[15] We will return to this note later. However, it also stated, "Despite substantial additions to the rolling stock and an appreciable improvement in the power position, it is distressing to find that this year's budget statistics reveal that there has been a deterioration in operating efficiency. Even otherwise, the speed at which freight and passenger traffic has been moving in recent years has yet to attain the pre-war level. This lends support to the general complaint that non-availability of transport is tending to become an impediment in industrial development." Were this to be written today, the words would have been articulated far more forcefully. To return to the speed issue, the high-density network is roughly identical with the network that connects the metros and this is over-stretched. The broad gauge lines are now classified into Groups A to E, depending on the maximum permissible speeds. Group A permits speeds up to 160 km/hour. Group B permits speeds up to 130 km/hour. Group C consists of suburban lines. Group D are lines that permit speeds up to 110 km/hour. Group E consists of sections and branch lines that have speeds up to 100 km/hour. None of these is anywhere near attaining those maximum permissible speeds and the problem isn't one that is associated with rolling stock. It has to do with track and over-stretched capacities, with mixed traffic of Rajdhani/Shatabdi/Duronto, slow passenger trains and goods trains. Tables 1.2 and 1.3 illustrate how bad the situation is. The maps that follow illustrate the same problem visually. Such high levels of capacity utilization, with the introduction of more and more trains, lead to speeds slowing down.

[13] 90% required for operational and allied usage.

[14] Depending on the source, there is sometimes a discrepancy in the figures. These figures are from the February 2015 White Paper.

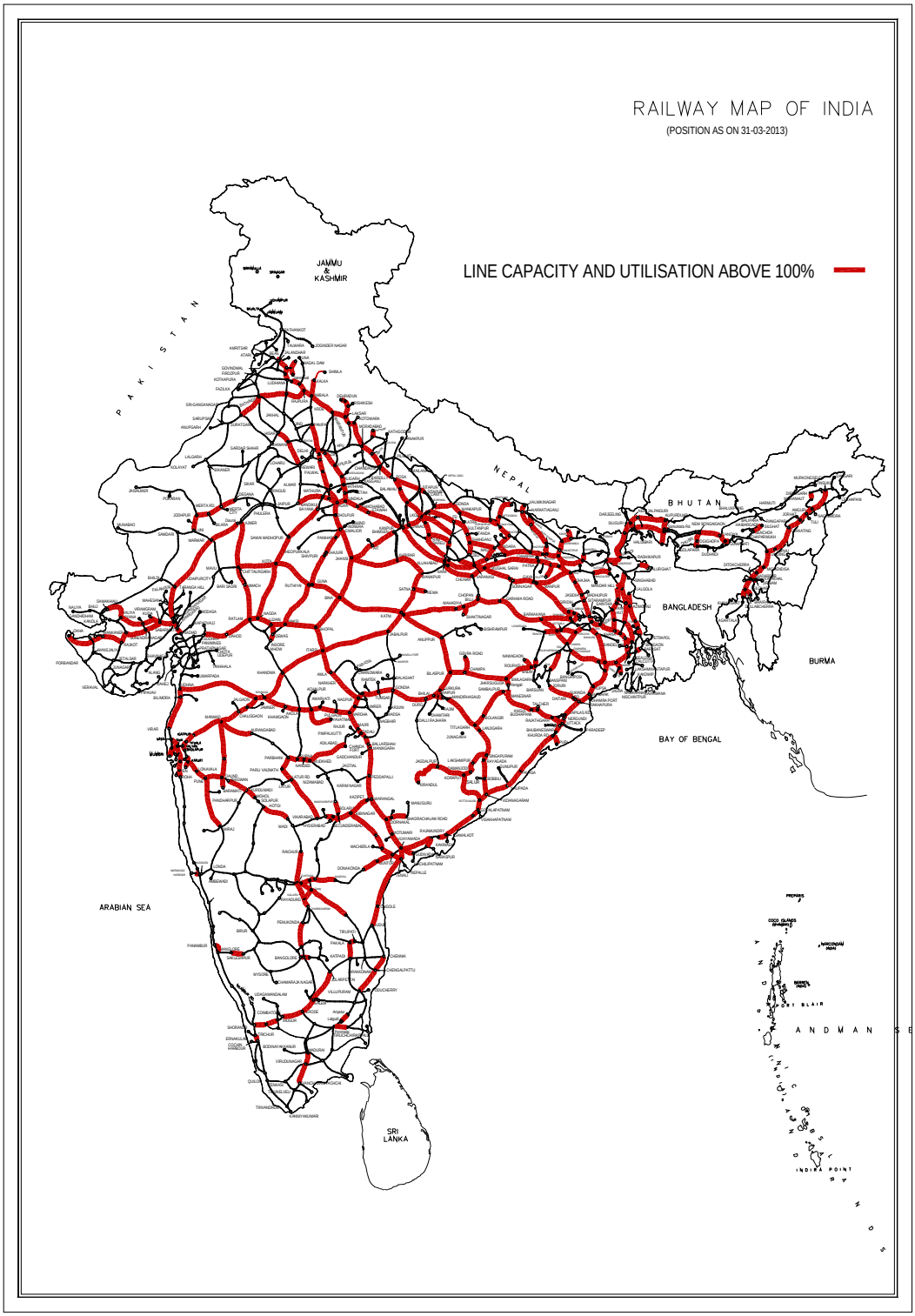
[15] No. 179/CF/54 of 18th September 1954.

Table 1.2: Capacity Utilization for Sections on IR

Railway	<80%	80-100%	100-120%	120-150%	>150%	One train only system	Total
Central	34	9	11	12	7	1	74
East Coast	16	9	9	16	2	4	56
East Central	16	13	19	22	16	5	91
Eastern	22	22	41	1	-	3	89
North Central	11	3	7	22	2	1	46
North Eastern	12	6	12	6	6	-	42
North Frontier	18	10	4	14	3	11	60
Northern	70	26	29	23	10	4	162
North Western	39	7	6	3	1	4	60
South Central	20	32	23	8	9	-	92
South Eastern	24	13	14	17	1	2	71
South East Central	9	6	9	7	2	-	33
Southern	53	38	25	15	-	-	131
South Western	38	12	-	-	-	1	51
West Central	1	4	7	6	3	-	21
Western	32	18	17	21	4	48	140
Total	415	228	233	193	66	84	1219

Table 1.3: Capacity Utilization for Sections on IR along the High Density Network

Railway	<80%	80-100%	100-120%	120-150%	>150%	Total
Central	12	4	7	12	5	40
East Coast	5	-	6	8	1	20
East Central	1	5	4	3	3	16
Eastern	-	3	7	-	-	10
North Central	-	1	5	19	1	26
North Eastern	1	3	6	1	3	14
North Frontier	-	3	-	5	1	9
Northern	3	4	5	7	2	21
South Central	-	14	2	2	2	20
South Eastern	2	2	6	6	-	16
South East Central	-	-	3	5	1	9
Southern	5	8	4	-	-	17
West Central	1	-	2	2	2	7
Western	-	9	2	9	2	22
Total	30	56	59	79	23	247



1.6 Indeed, the introduction of new trains and scheduling of stops illustrate how decisions are often not taken on the basis of commercial considerations. Several requests are received for the introduction of new trains and extensions of existing trains. These are ostensibly scrutinized by a Zonal Time Table Committee and subsequently by a national Inter-Railway Time Table Committee (IRTTC). Thereafter, decisions are taken about

new trains and extensions. A scrutiny of IRTTC minutes reveals that there is rarely a scrutiny of what the costs and benefits are of such decisions, of what such new trains and extensions mean in terms of disruption to existing traffic flows. At best, there are assertions about "demand" and a check on whether rakes and locomotives are available. Ditto for stops and halts. Including halts, there are 8,495 stations, as shown in Table 1.4. These stations are divided into various categories. A-1 are non-suburban stations with an annual passenger earning of more than Rs 60 crores, A are non-suburban stations with an annual passenger earning between Rs 8 and Rs 60 crores, B are either non-suburban stations with an annual passenger earning between Rs 4 and Rs 8 crores or stations that have tourist importance or are important junction stations, C are all suburban stations, D are non-suburban stations with annual passenger earnings between Rs 60 lakhs and Rs 4 crores, E are non-suburban stations with annual passenger earnings less than Rs 60 lakhs and F are halts. As is obvious a priori, 75 A1 stations account for the bulk of the passenger revenue. Barring stops because of operational reasons, there are clear guidelines on when a stop at a station is warranted. For instance, the minimum number of tickets to be sold at a station must be at least 40 or more for sleeper class, for a distance of at least 500 km, with a multiple added for higher classes. In the suburban section, no additional stoppages are to be provided to long distance trains. When a section has a capacity utilization of more than 90%, no additional stoppage will be provided along that stretch. An examination of the present stops shows that these principles are often breached. There are larger reasons why IR doesn't follow commercial principles and we will turn to those later. For the moment, the limited point being made is that even when the application of commercial principles is possible, IR doesn't always do so. The costing of trains is a case in point. One doesn't quite know how much a train costs. In the present costing system, all annual expenses are allocated to different services and one thus arrives at a unit cost for trains. That doesn't enable one to know how much a specific train costs. The revenue figures are easier to determine. However, since one doesn't know how much a specific train costs, one doesn't know how much of profits a specific train brings in. This is true of both passenger and freight trains. In a proper costing system, say for a passenger train, one would cost for different types of coaches, power car, pantry and parcel van, add depreciation and interest costs, add terminal and line haul costs and so on, imputing perhaps costs because of loss of path to goods trains. For the year 2014-15, and for Rajdhani, Shatabdi and Duronto, such a tentative exercise was undertaken for this Committee and the results are shown in Table 1.5. Before a decision is taken to introduce to a new train, or eliminate an existing one, such an exercise should be automatic and mandatory. It is not impossible to do. However, the present system sees no reason to do it.

Table 1.4: Category-wise, breakup of stations, based on annual passenger earnings for 2011-12

Railway	A1	A	B	C	D	E	F	Total
CR	8	26	14	85	44	203	95	475
ER	3	12	10	216	46	119	148	554
ECR	6	29	23	0	82	272	276	688
ECOR	3	10	34	0	22	179	56	304
NR	14	49	25	0	140	544	223	995
NCR	6	14	10	0	44	215	83	372
NER	3	11	22	0	85	226	143	490
NFR	2	20	21	0	62	298	102	505
NWR	3	22	12	0	62	336	142	577
SR	8	42	25	75	85	352	142	729
SCR	5	31	38	21	80	378	151	704
SER	2	8	5	28	39	167	104	353
SECR	2	6	14	0	40	134	114	310
SWR	2	15	17	0	47	167	88	336
WR	6	22	18	35	71	388	252	792
WCR	2	15	14	0	34	180	43	288
MR	0	0	0	23	0	0	0	23
Total	75	332	302	483	983	4158	2162	8495

Table 1.5: Fully distributed costs for Rajdhani, Shatabdi and Duronto (illustrative), 2014-15

Train No.	Itinerary	Coaches (number)	Distance (km)	Revenue per trip (Rs)	Cost per trip (Rs)	Profit/loss per trip (Rs)
Rajdhani Express						
12235	DBRG-NDLS	20	2453	3046580	4494832	(-)1448252
12301	HWH-NDLS	20	1447	2118708	2049608	69100
12309	NDLS-RJPB	21	1001	1759609	1501893	257716
12313	SDAH-NDLS	20	1454	2121310	2056328	64982
12424	NDLS-DBRT	19	2438	3194791	3829002	(-)634211
12952	NDLS-BCT	20	1384	2206010	1891494	314516
Shatabdi Express						
12001	NDLS-HBJ	17	707	1182530	932536	249994
12006	KLK-NDLS	14	303	515676	444148	71528
12011	NDLS-KLK	17	303	675531	518983	156548
12015	NDLS-ALL	15	443	634634	700621	(-)65987
12029	NDLS-ASR	19	448	874764	683615	191149
Duronto Express						
12213	YPR-DEE	16	2367	2082170	2551347	(-)469177
12246	YPR-HWH	16	1946	1589578	1731113	(-)141535
12223	LTT-ERS	14	1599	1036742	2127222	(-)1090480
12261	CSTM-HWH	18	1969	2144657	2353701	(-)209044
12263	PUNE-NZM	17	1520	1757203	1790407	(-)33204

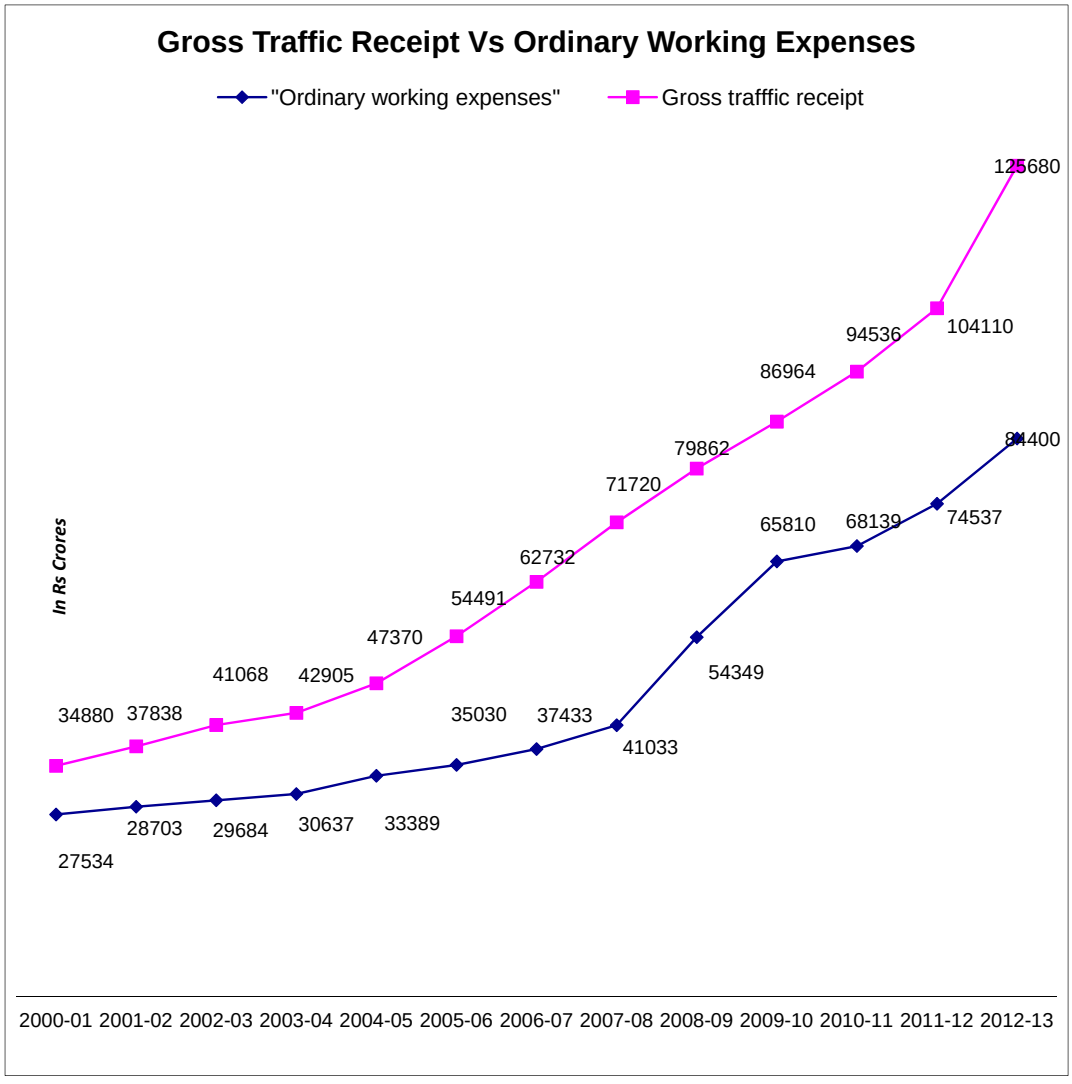
1.7 This is part of a broader malaise, since IR doesn't follow a commercial accounting system. Therefore, one doesn't quite know the accounts for fixed railway infrastructure,

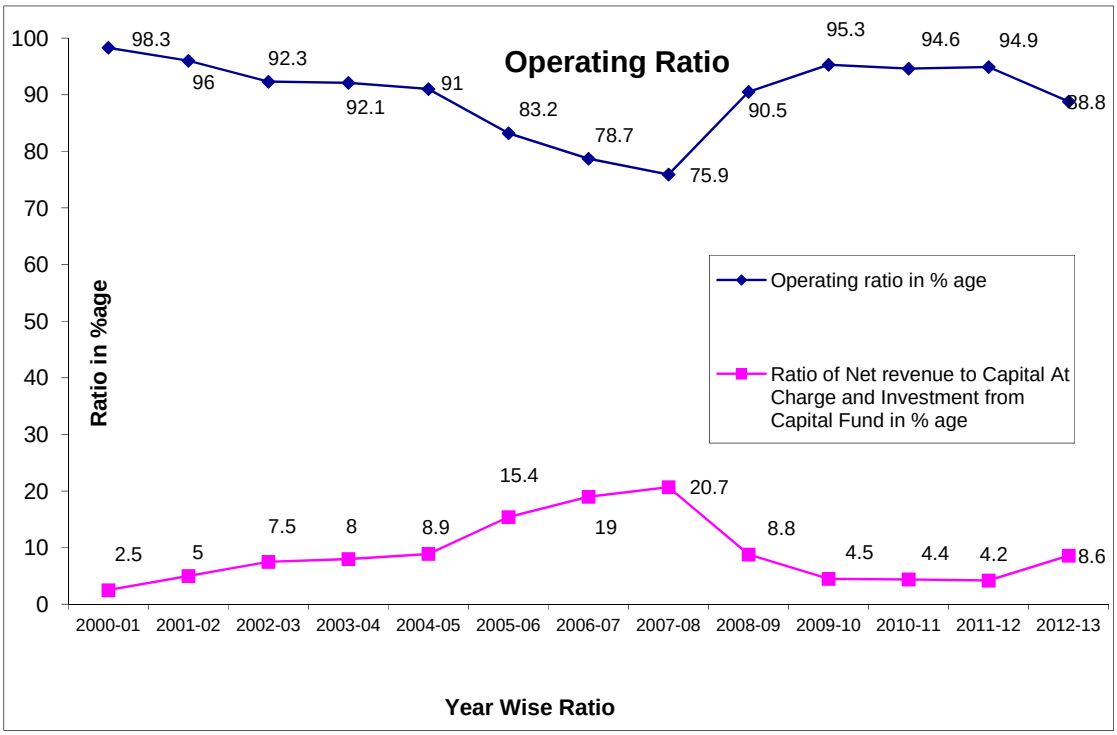
passenger traffic, freight traffic, suburban railways and the production and construction units. This isn't an argument against subsidization. A proper accrual-based double entry accounting system enables one to know the precise extent of subsidization. The present organizational structure of Indian Railways (IR) is shown in the chart, with the Ministry of Railways and the Railway Board at the top of the pyramid. Below that, including Kolkata Metro Rail, there are 17 zones, each headed by a General Manager (GM). Each zone is divided into divisions, headed by a Divisional Railway Manager (DRM) and there are 68 divisions. There are production units and 16 public sector undertakings (PSUs) that are under the administrative control of the Ministry of Railways. While one doesn't expect every zone to be profit-making, commercial accounting enables one to allow the 17 zones to function as separate cost and profit centres. One obtains an inventory of fixed assets and rolling stock. One can cost services, including welfare services like RPF, schools and medical services properly. There can be no reforms of any type without transiting to such a commercial accounting system. Of the 17 zones in IR, one happens to be Kolkata Metro, established in October 1984. There are other metro railways in the country and they have nothing to do with IR. Why should Kolkata Metro be a part of IR? For the record, Kolkata Metro's working expenses are far in excess of its earnings and its operating ratio, depending on the year, is almost 300.[16] Why was a decision taken to include Kolkata Metro as an IR zone, instead of making it independent? For a long time, IR possessed only 9 zones. East Central (with headquarters in Hajipur) and North Western (with headquarters in Jaipur) were added in 2002. East Coast (with headquarters in Bhubaneswar), North Central (with headquarters in Allahabad), South East Central (with headquarters in Bilaspur), South Western (with headquarters in Hubli) and West Central (with headquarters in Jabalpur) were added in 2003. Such new zones may have limited multiplier effects in the immediate vicinity, though there are opportunity costs of those expended resources also. But, in terms of economic rationale, the arbitrary creation of zones does not add to IR's efficiency, however defined. In whatever fashion efficiency is defined, and despite the dangers of a post hoc ergo propter hoc kind of fallacy, by every efficiency indicator, IR's efficiency was better with 9 zones than with 16. Indeed, Kota division is rather a strange example. It is part of West Central and the headquarters are in Jabalpur. Kota to Jabalpur is a distance of 656 km and takes about 11 hours by train. The headquarters of North Western division is in Jaipur. Kota to Jaipur takes less than 4 hours by train. Why is Kota division not part of the North Western zone? This too underlines the extreme arbitrariness in decision-making.

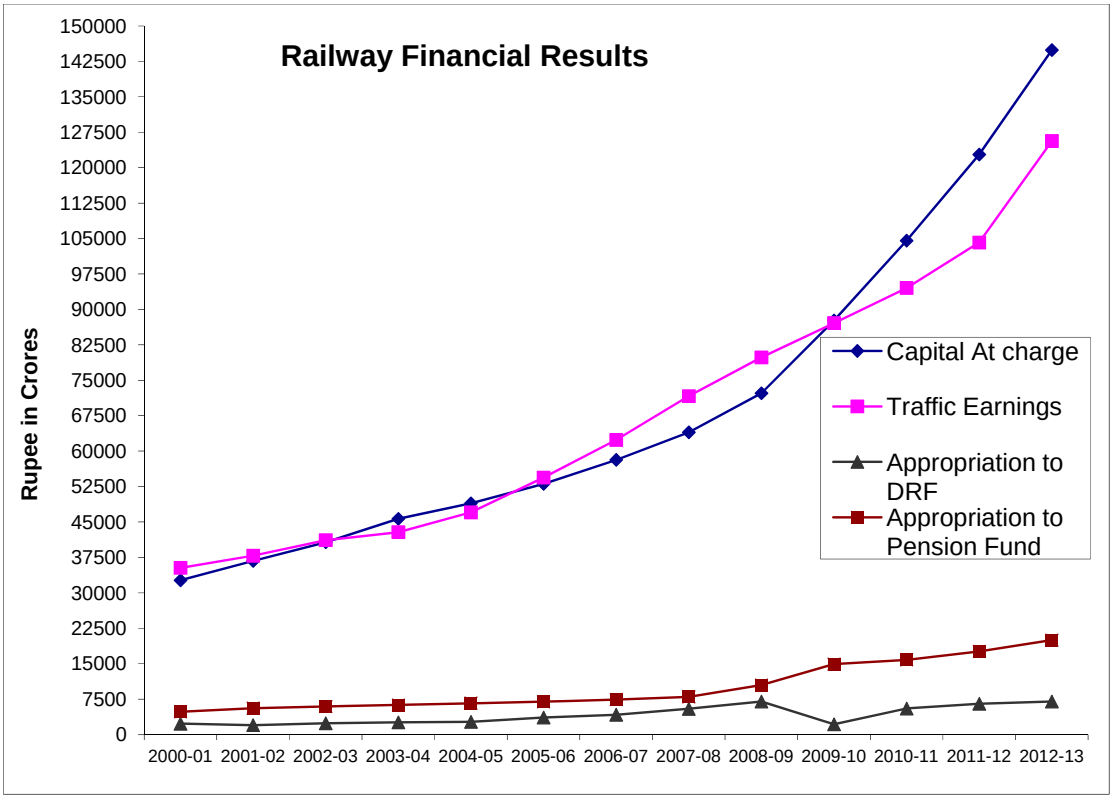
1.8 The lack of clear commercial principles spills over into the evaluation of projects. But before that, a few words are necessary about IR's fiscal crisis, which is also an opportunity for triggering reforms, as has been the case in many other countries in the world. As the graph below indicates, in recent years, IR has not made operating losses, defined as the difference between total earnings (gross traffic receipts) and total expenditure (ordinary working expenses). Since 2007-08, the spike in ordinary working expenses has occurred as a consequence of an increase in staff costs after the Sixth Pay

[16] It was 286 in 2013-14. The final figures for 2014-15 aren't available yet, but may decline a bit.

Commission. An indicator that is often used is the cost coverage ratio, the rail operator's revenue to cost ratio, a number colloquially referred to as the operating ratio. While there can be no objectively defined "ideal" operating ratio, in many countries, it is of the order of 75%. A high operating ratio simply means that there are limited resources for capital investments. IR pays for its own pensions. In addition, there is a Depreciation Reserve Fund (DRF) for the replacement of assets. However, neither DRF, nor what is paid in the name of "dividends" to the Union government, are objectively determined. For a start, dividends aren't what one would assume them to be in a commercial framework. Effectively, the Union government has extended a loan in perpetuity to IR and "dividends" represent a repayment of interest on that, without the principal ever getting extinguished. Dividends are exogenously determined. With dividends and appropriation to the pension fund fixed, a "desirable" operating ratio is determined and appropriations to the DRF obtained as a residual. Thus, whenever appropriations to the Pension Fund have increased, as they have after the Sixth Pay Commission, appropriations to DRF have declined and IR has been constrained to fund even rolling stock through market borrowings through IRFC.




Operating Ratio
Ratio in %age
Year Wise Ratio
Operating ratio in % age
Ratio of Net revenue to Capital At Charge and Investment from Capital Fund in % age
98.3
96
92.3
92.1
91
83.2
78.7
75.9
90.5
95.3
94.6
94.9
88.8
2.5
5
7.5
8
8.9
15.4
19
20.7
8.8
4.5
4.4
4.2
8.6
2000-01
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13


Railway Financial Results
Rupee in Crores
Capital At charge
Traffic Earnings
Appropriation to DRF
Appropriation to Pension Fund
2000-01
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13

1.9 Some of the legacy, including that of a separate Railway Budget, is due to the report of the William Ackworth Committee, which submitted a report in 1921. A longish quote from the Ackworth Committee's report is warranted.[17]

"The defects mentioned in the last Chapter are primarily due to the failure of the Government to provide the Railways with adequate funds for capital expenditure on development and extension, and even for essential operations of renewal and repairs. They are the inevitable result of a paralyzing system which has not been adapted and developed to meet the requirements of what is essentially a commercial enterprise of the first magnitude…We do not think that the Indian Railways can be modernized, improved and enlarged, so as to give India the service of which it is in crying need at the moment, nor that the Railways can yield to the Indian public the financial return which they are entitled to expect from so valuable a property until the whole financial methods are radically reformed. And the essence of reform is contained in two things: (1) the complete separation of the railway budget from the general budget of the country; and its reconstruction in a form which frees a great commercial undertaking from the trammels of a system which assumes that a concern goes out of business on each 31st of March and recommences de novo on the 1st of April; and (2) the emancipation of the railway management from the control of the Finance Department…the Railway Department, subject to the general control of the Government once it has met its liability to its creditors, should itself regulate the disposal of the balance, and should be free to devote it to new capital purpose (whether directly or as security for new debt incurred) or to reserves or to dissipate it in the form either of reduction of rates or improvement of services."

1.9 The separation of the Railway Budget from the Union Budget was only one small piece of the pie, the only one that was really implemented. The government was supposed to be no more than a share-holder and was supposed to allow IR to function freely and independently, in accordance with commercial principles. And, in addition, IR was supposed to pay an interest on loans taken from the government, that interest being the same as the interest paid by the government when it borrowed to fund investments in IR. The short point is that with the exception of the separation of the Railway Budget from the Union Budget, none of the other recommendations were ever implemented. This is not to suggest that everything done by IR must be on commercial considerations. The debate on the funding of un-remunerative passenger lines and branch lines has been going on since the 19th century, when the railways were developed privately, without any satisfactory resolution. That's the reason some annual losses on the operation of strategic lines are borne by the general revenue. That's the reason there are subsidy reliefs in dividend payments for strategic lines. Subject to what was said about accounting, IR computes the burden of social cost obligations, divided into (a) carrying essential commodities below cost; (b) passenger and other coaching services; (c) operation of uneconomic branch lines;[18] and (d) new lines. Excluding staff welfare costs (Rs 4,287 crores) and law and order costs (Rs 2,947 crores), in 2013-14, these social

[17] Quoted in *Indian Railways, Strategy for Reform*, K. B. Verma, Foundation Books, 2015. Only a small part of the quote has been reproduced. There is much more in the longer quote and in the Acworth Committee.

[18] There are an estimated 90 uneconomic branch lines.

service obligations were estimated to impose a burden of Rs 24,886 crores. Under all four heads, there should be better ways of handling the problem. Projects are now divided into 7 categories – national projects (A1), projects on cost sharing basis (A2), critical projects (A3), sub-critical projects (A4), important projects (A5), other projects (B) and least important projects (C). A3, A4 and A5 are priority projects from the perspective of IR. Within this segment, there is a throw-forward of more than 200 projects, with an original estimated cost of more than Rs 208,054 crores, spanning new lines, gauge conversion, doubling, traffic facilities, signaling and telecommunication, railway electrification and workshops. Project execution has been tardy and calculation of rates of return slipshod. For A1 and A2, there should be cleaner bearing of the subsidy burden between the Union government and State governments on the one side and IR on the other, covering not only capital investments, but also operating losses. An instance of such clean separation is suburban rail transport, the Mumbai Urban Transport Project (MUTP) being an instance of what can be done through the JV route. There is also the Mumbai Railway Vikas Corporation (MRVC), for suburban rail improvement projects.

1.11 On (a) and (b) above, not only is the system non-transparent, the cross-subsidization of low passenger fares by artificially high freight rates has often been commented upon. Despite Railways being inherently cheaper and more environmentally friendly, the modal mix of transport has shifted in favour of road transport, not only for freight, but also for passenger transport with shorter leads. "It is estimated that the skewed intermodal mix of India's transport infrastructure costs the country up to the equivalent of 4.5 per cent of GDP. Raising the share of rail to at least 50 per cent in freight transport, as is the case in China and the United States, should be a strategic priority of the new government and would entail a major expansion in railway capacity."[19] Nor, for both passenger and freight tariffs, within those categories, are prices set in accordance with elasticities of demand. Two additional points should be made about those low passenger fares. First, as is the case with other economic services, there is no convincing argument in favour of low user charges across the board. If subsidies are warranted for those who are poor, there are better ways of targeting them, such as through direct benefit transfers. Perhaps it is worth mentioning the extent of this subsidization, worked out by this Committee for April-October 2014, for non-suburban second class passenger traffic. This is not proper marginal cost pricing, since the present accounting system doesn't allow the Committee to do this. These numbers are best understood as a better distribution of costs, though far short of marginal cost principles. For mail/express trains, the earnings per passenger km were 22.6 paise, while the costs were 38.3 paise. For ordinary trains, the earnings per passenger km were 15.5 paise, while the costs were 49.1 paise. Second, it is not the case that passengers are unwilling to pay higher fares. In 2012, NCAER conducted a survey for IR.[20] This covered both suburban and non-suburban passengers, reserved as well as

[19] "Modernizing Transport Infrastructure," Rajiv Lall and Ritu Anand, in, Bibek Debroy, Ashley J. Tellis and Reece Trevor edited, *Getting India Back on Track, An Action Agenda for Reform*, Random House, 2014. The 4.5% figure is through Planning Commission.

[20] Shashanka Bhide, Saurabh Bandyopadhyay and Palash Baruah, *Understanding Passenger Demand for the Indian Railways*: *Issues and Perceptions in a Socio-Demographic Framework*, NCAER, August 2012.

unreserved. One of the findings was an obvious one. Passengers are willing to pay higher fares, provided there is the quid pro quo of an improvement in the quality of services available to passengers, at stations and on trains. Services to passengers cover a wide spectrum. There have been several surveys of passenger complaints. Typically, these are the following: one can't get reservations when one wants; on-board, and off-board, there are problems with cleanliness, food and bed-linen; trains run late; there are safety and security issues. While there is no question that passenger fares have to be increased, there must be the quid pro quo of better passenger services and amenities.

1.12 There was a point when IR was almost a monopoly, both on passenger and freight operations. A classic monopolist has no reason to bother about attracting new customers, or retaining current ones. That's no longer the case when the monopoly status is threatened by competition. Threatened by competition, IR's systems haven't been able to adapt, or haven't adapted fast enough. An idea of what IR intends can be obtained from the Citizen's Charter that has been accepted.[21] The Preamble states, "Provide safe and dependable train services; set notified standards for various services wherever possible; provide courteous and efficient counter services; set up a responsive and effective grievance redressal machinery, at various levels for time bound resolution of complaints and grievances as far as possible." Elaborating further, there are major segments on reservations/bookings and refunds, dissemination of information about time-tables and running positions of trains, catering, cleanliness, off-board amenities (waiting halls, platforms, refreshment rooms), on-board amenities (lighting, berths/seats, toilets), redressal of public grievances and accidents, with some other segments too. This suggests that on each of these, there will be standards that will be notified. However, there are none that have been notified. To make matters worse, that Citizen's Charter does not find a place in any of the Zonal or divisional websites, with the exception of South Central. Table 1.6 illustrates the quality of customer information available at these websites, in addition to that of overall IR.

Table 1.6: Quality of customer information

	Passenger services	**Parcel services**	**Freight services**	**Complaints & suggestions**
IR	**E-ticketing, PNR status, train arrival/departure**	**Rules, rates, wharfage, cabin layout**	**Stations, sidings, rakes, track and trace**	**Complaints menu, 24/7 SMS & call services for passengers**
Central	**PNR status, reservations, train schedule, seat availability**	**No separate information, incomplete information under commercial**	**No separate information, incomplete information under commercial**	**Menus exist, but don't work**
East	**PNR status, reservations, train**	**No information**	**No information**	**Only a feedback**

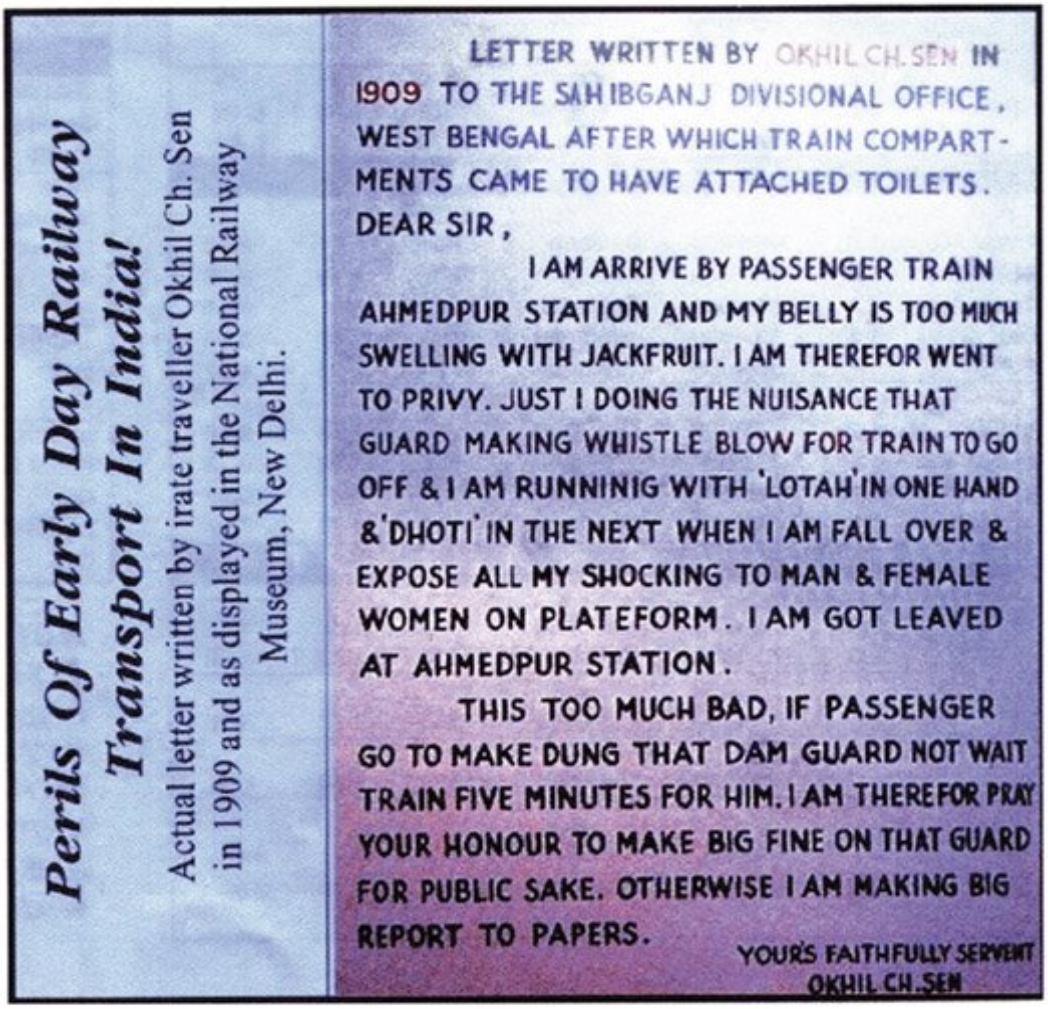
[21] http://www.goicharters.nic.in/railways.htm#pre

Central	**schedule, seat availability**			**menu**
East Coast	**PNR status, reservations, train schedules, seat availability**	**No information**	**No information**	**Only a feedback menu, grievance redressal takes one to Department of Administrative Reforms**
Eastern	**PNR status, reservations, train schedules, seat availability, rules for FIR**	**Parcel rules, rates, claims for lost parcels under passenger information**	**Freight charges and freight claims under passenger information**	**Detailed public grievance redressal**
North Central	**PNR status, reservations, train schedules, seat availability, passenger claims**	**No information**	**No information**	**Detailed public grievance redressal**
North Eastern	**PNR status, reservations, train schedules, seat availability, claims**	**Parcel handling licences**	**Demurrage & wharfage**	**Limited information on public grievances**
North Western	**PNR status, reservations, train schedules, seat availability, dormitory and retiring rooms**	**No information**	**No information**	**Grievance redressal takes one to the Department of Administrative Reforms**
North East Frontier	**PNR status, reservations, train schedules, seat availability, refunds, retiring rooms, catering, lodging FIR**	**Lost goods**	**Lost parcels**	**Feedback menu**
Northern	**PNR status, reservations, train schedules, seat availability, refunds**	**No information**	**No information**	**Feedback menu**
South Central	**PNR status, reservations, train schedules, seat availability, internet booking, PRS centres**	**No information**	**No information**	**Detailed grievance redressal menu**
South East	**PNR status, reservations, train**	**No information**	**No information**	**Grievance redressal takes**

Central	**schedules, seat availability, refunds**			**one to the Department of Administrative Reforms**
South Eastern	**Extremely detailed information for passengers**	**Only claims for parcels**	**Extremely detailed information for goods**	**Feedback menu under construction**
South Western	**Extremely detailed information for passengers**	**No information**	**Demurrage/wharfage, rakes**	**Feedback menu**
Southern	**Extremely detailed information for passengers**	**No information**	**No information**	**Detailed grievance redressal menu**
West Central	**Extremely detailed information for passengers**	**Rules and rates**	**Rules/rates, wagon loading/unloading forecasts**	**Feedback menu, complaint numbers**
Western	**Extremely detailed information for passengers**	**Loading/unloading of parcels**	**Detailed information on freight**	**Feedback & complaints, including SMS**
Metro, Kolkata	**Detailed information for passengers**			**Feedback, grievance cell**

1.13 There is an oft-quoted, and therefore somewhat clichéd letter, written by Okhil Chandra Sen to the Divisional Superintendent of Sahibganj in 1909, familiar to all those who know about Indian railway history. The original letter is in the National Railway Museum, Delhi. This is believed to have led to the introduction of toilets on trains, a statement that is not quite true, since many trains, particularly in the upper class segments, started to have toilets in the 1870s. That self-explanatory letter is shown in the box. Sahibganj (in Jharkhand) has seen better days, from the Railway point of view. It is no longer on the Howrah-Delhi main line. Ahmedpur is in West Bengal and Mr Sen must have travelled along the Bardhman-Sainthia section of what is called the Sahibganj loop. That's part of railway history. But the point is the following. Were such a letter to be received today, would IR act on it? How conscious is IR, given its history of a privileged and monopoly status, of the client – passenger, freight and parcel? What do PROs do? How trained are GMs, DGMs, DRMs, station masters and other railway officials in handling media, including social media? Is there a notion of corporate relations and PR? Do the officers and staff of the public relations departments have degrees in mass communication or journalism? How much effort has IR put into promoting the IR brand? These are meant to be rhetorical questions. Consequently, even when IR has a good case, or introduces a service for the client, there is little effort in promoting or disseminating it. There is a need for a relook at the composition of the Railway Users' Consultative Committees, set up at various levels, and at what they are meant to do. They do not provide broader client feedback. Nor do they act as brand ambassadors for

IR. On the other hand, there are organizations like the IRFCA (Indian Railways Fan Club Association).[22] No attempt is made to rope such organizations in for the cause of the railways.



Thoughts on Restructuring and the Way Forward

1.14 There is a broader issue of determining what IR is supposed to do. What is its core function? The core function of IR should be the business of running trains. The total workforce of 1.334 million has been mentioned earlier. Of this, within Groups C and D, there are 57,312 Railway Protection Force (RPF) and Railway Protection Special Force (RPSF) personnel. With significant variations across the zones, it costs an average of Rs 24.1 per train km to ensure security on trains. IR runs a medical service, with an infrastructure of 125 hospitals, 586 health units and 14,000 beds. There are 2,597 medical officers and 54,000 paramedical staff. IR runs 1 degree college and 168 railway schools. As a first slicing of core versus non-core, do these need to be part of the IR system or can they be delinked and made independent? IR's efficiency indicators have

[22] www.irfca.org.

improved over time. For example, traffic units (net tonnes km + passenger km) per employee was 244,000 in 1980-81 and increased to 1,467,000 in 2012-13. But judged by international benchmarks like traffic units per employee, they are still low. Slightly dated data from 2006-07 show that this indicator, traffic units/employee, was 0.84 for India, 1.4 for China, 2.1 for Japan, 3.4 for South Africa, 10.4 for Canada, 15.1 for the United States and 2.0 for Russia. One must be a trifle careful in using such indicators though, because this is an aggregate indicator and is a function of the composition of passenger and freight, which varies across countries. The afore-mentioned White Paper has more recent data, for 2009-10 and has numbers for Russia, China and India. NTKM per employee was 1.81 million in Russia, 1.23 in China and 0.44 in India. PKM per employee was 0.15 million in Russia, 0.38 in China and 0.66 in India. That is, India fares better on the passenger indicator and worse on freight. More importantly, the over-staffing of IR is too much of a generalization. With substantial recruitments having taken place in RPF/RPSF, medical, education and Group D, the real problem is the composition of the work-force, with a shortage in the core skilled operations of running trains. The so-called teeth/tail ratio is low. As a second slicing of core versus non-core, do the PSUs need to be part of the IR system? As a third slicing of core versus non-core, do the production workshops need to be part of the IR system, or can they be made independent? We will return to these points later in the report. For the moment, in this chapter, two preliminary points need to be made. First, in no country in the world where successful railway restructuring has been attempted, has the attempt been overnight. It has taken more than 10 years. With the terminal goal clear, there has been a gradual and incremental move towards that objective. Second, restructuring is integrally linked to a HR issue, with protection of existing staff and recruitment of new staff on new terms. There is a natural attrition due to retirements and there is a bunching together of such retirements in the next few years. For instance retirements in Groups C and D will increase from 54,937 in 2014-15 to 57,233 in 2015-16, 57,682 in 2016-17 and 57,284 in 2017-18, before beginning to taper off. This is thus an opportune time for restructuring.

1.15 This Chapter is about Indian Railways. It is not on IR and presupposes that there will be a segment of railway operators who are no longer public. That is, the identification of Indian Railways with IR will break down. Having said this, it is by no means obvious a priori, theoretically or empirically, on the basis of the experiences of other countries, what form that competition should take.[23] Network utilities like the Railways exhibit economies of scale and density. Economies of scale occur when unit costs decline as the size of the network increases. Economies of density occur when unit costs decline as the volume of traffic increases. Since railways exhibit features of both, they often lack competition. There may also be economies of scope, when unit costs decline because several functions are simultaneously performed. The expressions privatization, liberalization and deregulation are freely used in the context of railway restructuring, often synonymously. This Committee will use the word liberalization and not the terms privatization and deregulation, as both of these two terms are apt to be misunderstood.

[23] This paragraph draws on *Competition in Intermodal Rail Transport: The Case of Indian Railways*, Manoj Singh, PhD thesis submitted at the University of Leeds, 2009.

Deregulation suggests the absence of a regulator, unless it is clarified otherwise. For reasons that will become evident, this Committee will talk about the need for a regulator and hence, avoid usage of the word deregulation. This Committee does not recommend privatization of IR, except in very specific non-core segments, outlined later in the report. It does recommend private entry. But because of the two very different senses in which the word privatization is issued, this Report prefers to use the word liberalization, so that there is no confusion. There is strong empirical evidence to suggest that railway networks exhibit economies of scale, density and scope. In addition, there are high fixed costs in railway infrastructure in the form of track, signaling and terminals, even if one unbundles and takes out rolling stock. Interpreting liberalization in a vertically integrated railway network like IR is quite different from a country like the United States, where the historical evolution has been entirely different. In the framework this Committee recommends, we suggest a government SPV (with a possibility of disinvesting in the future) that owns the railway infrastructure, delinked from IR. The creation of such a Railway Infrastructure Company makes the market for operating trains contestable. Once this has been done, there are essentially three modes for liberalization. In terms of the taxonomy that has been used in the literature, first, there can be competition for the market. For a zone, or between two points, this essentially means a competitive award of a concession for a limited period of time to a bidder who offers the lowest price or offers the best service. In different forms, this has been tried out in South America, Africa and some European countries. Second, between two points, or for a zone, there can be competition in the market. This means that in this segment there is a pair of vertically integrated railway operators that compete. For freight operations, this is the model in the United States and Canada. Third, once that Railway Infrastructure Company has been unbundled and has been separated out, there can be open access for any new operator who wishes to enter the market for operating trains. There is non-discriminatory access to the railway infrastructure and a level playing field. There are instances in Europe and Australia. Given the history and the context, this Committee recommends the third method of liberalization.

1.16 There is an important caveat though. As Table 1.7 and the accompanying graph shows, IR earns a significant share of its revenue through freight, and within that, through bulk freight. Estimates by this Committee suggest that once the Dedicated Freight Corridor Corporation of India Limited (DFCCIL) is fully operational, 55% of the present revenue earning freight of IR may move to DFCCIL. While this frees up track capacity for IR, it does not augur well for its commercial operations. In addition, the welcome time-tabling of goods trains in the Railway Budget makes the entry of private freight operators more attractive. In this situation, if lucrative passenger lines are also being opened up to the private sector, where does this leave IR? The Committee recommends that the Indian Railways Act be amended to allow the levy of tariffs by private operators and that there no longer be any administered tariff-determination, fares being left to the market, with a qualification about passenger fares that we will highlight later. Having said this, what happens if private service providers remove lower-fare categories and do not offer services along un-remunerative lines? There is thus a need to stipulate some guarantees on the provision of a certain amount of services of a particular passenger class, such as

ordinary sitting class and sleeper class. This is a bit like a universal service obligation. The Committee feels the need for the setting up of a Public Service Costing (PSC) exercise, independent of IR. The PSC exercise can be entrusted to the RRAI (Railway Regulator of India), elaborated on later. The PSC exercise will determine the costs incurred by IR and other rail service providers in providing social services, such as the construction, operation and maintenance of lines in specified locations and in providing specified rail services on identified existing branch lines. For such classes, the Ministry of Railways will prescribe standards of travel and a proposed capacity, as a proportion of the total passenger carrying capacity of the train route. (This means that the service provider can choose to run a train along a route, without any such identified classes, as long as it provides compensating capacity on other trains along that route.) For such classes, the PSC exercise will calculate the opportunity cost of the service provider in providing the designated passenger capacity. After the PSC calculations, the Ministry of Railways will compensate, through the Union Government and the State governments, the service provider for providing the specified capacity at the specified fare. (We will have comments on freeing passenger tariffs further down.) Ideally, this Committee believes, that as an end goal, suburban services should be separated and run as JVs with State and/or local governments, with tariff determination by State and/or local governments. But until that end goal is achieved, suburban passenger traffic could also be subject to similar principles.

Table 1.7: FREIGHT OPERATION

COMMODITY-WISE REVENUE EARNINGS (Rs in millions)	
BULK COMMODITIES	**2012-13**
Coal	**3,58,944**
Iron Ores	**74,441**
Cement	**80,012**
Mineral Oils	**47,179**
Food Grains	**69,852**
Other	**2,04,360**
Total	**834788**

1.17 Let us return to a quote from the afore-mentioned 1954 Cabinet Note on the Railways. "While, initially, the Railway Board was constituted for a limited purpose, with its reconstitution in 1924, it became, for the first time, responsible for both policy and technical administration….In the best of circumstances, it is somewhat difficult to entrust policy and administration, as well as technical control, to the same body of men…The unitary conception of the Indian Railways also requires the adoption of the British model,

in which policy-making is separated from functions of technical control….It may be desirable, as a further measure of reorganization, to place, under the same umbrella, all transport activities of Government, such as Railways, Civil Aviation, Road Transport and Coastal Shipping. This may be considered separately at the appropriate stage." With the inter-modal nature of transportation, the eventual transition to a Ministry of Transport may indeed happen. But that is in the future. For the moment, in our framework, the Ministry of Railways sets the policy for open access, as explained above, and the framework for the Railway Infrastructure Company. In addition, the Railway Ministry determines the policy for raising resources for social cost obligations, extending the railway network and offering on-budget and targeted subsidies to poor passengers who need them. For the PSCB, the Railway Ministry also sets the policy on passenger service standards. The Railway Board becomes a board for IR alone and will thus be discussed in subsequent chapters. This leaves the question of the regulator, henceforth referred to as the Railway Regulatory Authority of India (RRAI).

1.18 After a decision by the Cabinet in August 2013 and after the views of the Ministry of Law and Justice were ascertained, the Ministry of Railways proposed the setting up of a Rail Tariff Authority (RTA). Pending an amendment in the Railways Act, the Railway Board, in a Resolution dated 27thJanuary 2014, proposed the setting up of an interim RTA. "Now, therefore, the Government of India do hereby constitute the *interim* Rail Tariff Authority (RTA) under the overall administrative control of the Ministry of Railways as follows: The primary function of this Authority would be to develop an integrated, transparent and dynamic pricing mechanism for the determination of tariffs of Indian Railways and pending enactment of the requisite legislation, to advise the Central Government on fixation of tariffs for Indian Railways based on cost of operations and factors impinging on it, with a view to not only achieve its recovery but, also, generate requisite surpluses for healthy growth in times ahead." The RTA is part of the TOR of this Committee, but has been overtaken by events. Paragraph 116 of the Railway Budget Speech for 2015-16 states, "Indian Railways currently is the only rail-based trans-city infrastructure provider and operator in the country. Therefore, for the purpose of orderly development of infrastructure services, enabling competition and protection of customer interests, it is important to have a regulation mechanism independent of the service provider. Initially it was contemplated to set up only a Tariff Regulator, however, it is now proposed to set up a mechanism, which will be entrusted with making regulations, setting performance standards and determining tariffs. It will also adjudicate on disputes among licensees/private partners and the Ministry, subject to review in appeal."

1.19 Several questions arise. First, can tariffs be completely freed or should they be subject to some regulation? Internationally, there is limited tariff regulation of freight, where regulation has more to do with access to tracks, terminals and other multi-user infrastructure. In order to promote efficiency in transport and logistics, most countries have allowed multiple operators to enter into the freight market in various roles. Freight transport by rail also has to compete with other modes of transport – road being the most prominent. The intermodal competition and multiplicity of operators in rail freight

services limits the requirement of the regulator to enter into issues of tariff determination. This Committee does not feel that the Indian regulator needs to enter into issues of tariff fixation for freight, once the rules of competition have been laid down in the policy enunciated by the Ministry of Railways. The regulator only comes into play if those rules of competition are violated. Passenger tariffs are a different matter. Some developed countries refrain from heavy-handed determination of passenger tariffs. But such minimal oversight is only possible when competition has sufficiently developed. While that minimal oversight can be a terminal goal, this Committee does not believe that passenger tariff fixation can be left to the market. Therefore, passenger tariffs should be recommended by the regulator. Since the market is insufficiently developed and since this issue is linked to the passenger service standards set by the Ministry of Railways, appropriately costed for by a PSCB-kind of exercise, we do not believe the regulator's recommendations should be binding. The Ministry of Railways should take the final decision on the recommended passenger tariffs.

1.20 Second, the Competition Commission of India (CCI) was established through the Competition Act of 2002 (subsequently amended through the Competition (Amendment) Act of 2007). This is an independent regulatory body with the responsibility "to eliminate practices having adverse effect on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade in the markets of India". The CCI has already been involved in settling a dispute between two private freight train operators on one side and the Container Corporation of India Limited (CONCOR) and the Ministry of Railways on the other. Two separate informants – Arshiya Rail Infrastructure Limited and Kribhko Rail Infrastructure Limited, filed three separate complaints with CCI under Section 19(i)(a) of the Competition Act for alleged abuse of dominant position by the opposite parties – Ministry of Railways and CONCOR. Among the allegations were the following: (a) Discrimination against private container train operators (PCTOs) by prohibiting transportation of goods such as ores, minerals, coke and coal, which constitute almost 65% of freight traffic; (b) Arbitrary increase of haulage and stabling charges for the PCTOs; (c) Unfair advantage to CONCOR by providing land to it at favourable terms; (d) Denial of terminals and sidings owned and exclusively used by CONCOR to PCTOs, thus increasing costs for PCTOs and making them less viable; and (e) Restriction of competition in the derivative after-market of maintenance services. This case is important because the CCI took this opportunity to clearly establish its jurisdiction over matters of "commercial nature", as opposed to sovereign functions of the Ministry of Railways. The Ministry had claimed that these issues were part of the sovereign function and were outside the jurisdiction of the CCI. The CCI rejected this view. In a separate case, the CCI has also looked at the preference for SAIL in rail procurement by IR. While this specific case was about access issues for private container train operators, in principle, such access issues will arise for all private freight trains and private passenger trains. For instance, in collaboration with IRCTC, State Tourism Development Corporations and the government of Maharashtra, IR runs luxury trains like Palace on Wheels, Golden Chariot, Royal Rajasthan on Wheels, Maharaja Express and Deccan Odyssey. There is a Buddhist Special Train. There are Bharat Darshan Trains and special tourist trains for Pilgrim Circuits. With the emphasis

on tourism, there will be more such trains, operated not only in collaboration with State governments and IRCTC, but also run completely by private tour operators. While there may not have a legal case yet, informally, the operators complain about access problems, both for the track and for other access issues. The issue before this Committee was whether the CCI was equipped to handle such anti-competitive disputes, or whether a separate RRAI was warranted. Having considered the pros and cons, this Committee is of the view that, given the technical and specialized nature of the railway sector, a separate RRAI was warranted. Once the RRAI has been set up, the Competition Act can be suitably amended, to elucidate the CCI's jurisdiction. A report that examined the issue had the following to say.[24] "In most jurisdictions this issue of overlap has arisen and been satisfactorily dealt with even without statutory provisions to address the interface between the sector regulator and the Competition Authority. Different models have been adopted by different countries…. Section 21 of the amended Competition Act enables a sectoral regulator to refer competition matters either suo moto or at the instance of any of the parties to the CCI. Section 21A in turn enables the competition authority to refer any matter which falls within ambit of the sectoral law to the sector regulator. Although in either case, the reference is voluntary, the sector regulator or the CCI, as the case may be are required to state the reasons for their decisions on the advice. It would be desirable to make provisions in both competition law and sectoral laws to make references to the CCI or the sectoral regulators, as the case may be obligatory."

1.21 Third, this Committee feels that the proposed RRAI should be set up statutorily, with an independent budget, so that it is truly independent of the Ministry of Railways. The RRAI will have the powers and objectives of economic regulation, including, wherever necessary, tariff regulation; safety regulation; fair access regulation, including access to railway infrastructure for private operators; service standard regulation; licensing and enhancing competition; and setting technical standards. It will possess quasi-judicial powers, with appointment and removal of Members distanced from the Ministry of Railways. Given the vacancy and backlog problems associated with the Railway Claims Tribunals, this Committee does not feel that consumer complaints, including class action complaints, should be addressed to the RRAI. The Consumer Protection Act is adequate for that purpose. Hence, there is no a priori need for benches outside Delhi. There should be an Appellate Tribunal which will hear appeals against the orders of RRAI and further appeals against the orders of the Appellate Tribunal can be directed to the Supreme Court. It is important that the licensing function remains with RRAI, rather than the Ministry of Railways, once the policy has been set by the Ministry. Licensing can be a competition-enhancing device, as it can be used to deter competition. Therefore, one needs to avoid any conflict of interest. Inappropriate standards can also be used to restrict competition. Competition in the railway market is not sufficiently developed to allow the setting of standards to be developed by the market, through producer and user associations. Therefore, the setting of technical standards should

[24] *Competition and Regulation in India*, CUTs International, 2013. Chapter 5 of this report is on regulatory issues in the Railways sector.

come under the ambit of the RRAI. This means a bifurcation of the dual role played by RDSO (Research, Design and Standards Organization) as a R&D organization of IR and technical advisor to the Railway Board and as a standard-setting organization. Prior to 1957, RDSO was bifurcated into a Central Standards Office (CSO) and a Railway Testing and Research Centre (RTRC). Consequently, this Committee sees no problems with such a bifurcation. The technical standard-setting role should come under the ambit of the RRAI. RDSO's technology role for IR can remain with IR, or alternatively be clubbed with the Railway Research Centres that will now be set up in selected universities. A similar point extends to the Commissioner of Railway Safety. In 1939 and 1940, this was deliberately made independent of the Railway Board and has thenceforth, administratively been with the Ministry of Civil Aviation. Under Chapter III of the Railways Act, the duties of the Commissioner of Railway Safety encompass, "to inspect new railways with a view to determine whether they are fit to be opened for the public carriage of passengers and to report thereon to the Central Government as required by or under this Act; to make such periodical or other inspections of any Railway or of any rolling stock used thereon as the Central Government may direct; to make inquiry under this Act into the cause of any accident on a Railway; to perform such other duties as are imposed on him by this Act or any other enactment for the time being in force related to Railways". These principles are further elaborated in Sections 22 to 24 of the Railways Act.The administrative control of the Ministry of Civil Aviation is somewhat anomalous and happened because of historical reasons.(The administrative control used to be with the Department of Posts and Air earlier.) Be that as it may, more importantly, this Committee believes that, given the template of liberalization and the setting up of the RRAI, as with the standard-setting role of RDSO, the Commissioner of Railway Safety needs to be integrated with, and subsumed under, the RRAI. It is also necessary to mention another aspect explicitly. RRAI should also be given the task of overseeing rules and norms that ensure fair competition for SPVs that have been created through railway connectivity projects. PRCL (Pipavav Railway Corporation Limited) & BDRCL (Bharuch Dahej Railway Company Ltd) are examples.

1.22 In sum, this Chapter has set out the template of liberalization contemplated by this Committee. Under that template, with free private entry, one needs an independent regulator, with policy laid down by the Ministry of Railways. Since we have said policy should be determined by the Ministry of Railways, with a possible transition from the Ministry of Railways to a unified Ministry of Transport, we should explain what this Committee means by "policy". In this Committee's view, this policy should be based on ensuring what is in the best interests of the country as a whole and for the Railway sector, and not based on what are the interests of IR alone. That policy should ensure competition in the Railways sector and encourage private entry and private investments. It will involve: (a) some aspects that are sectoral; (b) Parliamentary functions and interactions; (c) Planning for investment resources and ensuring their availability; (d) Taking care of social responsibility and the funding of social costs; and (e) Interaction with other Ministries. Ipso facto, compared to the present situation, the Ministry of Railways will become leaner. However, it still needs to be served by officers who possess sufficient seniority.

1.23 This template also requires IR to adjust. From Chapter 3 onwards, the rest of this Report concentrates exclusively on how IR needs to adjust. This includes restructuring of the Railway Board, which becomes a Board for IR alone. Finally, we underline what has been stated earlier. Railway restructuring is a long-drawn out process, spanning at least 10 years. This is both because of the international experience and because of the importance that Railways have in India. Dramatic and overnight experiments at restructuring are doomed to fail and should not be attempted. The costs of failure are too disastrous. Instead, once that 10-year road-map is clear, one works towards it, incrementally. However, before talking about IR proper, from Chapter 3 onwards, in Chapter 2, we focus on the scope for private sector entry, thus drawing the distinction between Indian Railways and IR.

Case Study of Frontier Mail

The Frontier Mail (rechristened as the Golden Temple Mail in 1996) runs between Bombay (now rechristened as Mumbai) Central &Amritsar Junction. It is a daily service, covering the distance of 1891 km in 32 hours 15 mins. It leaves Mumbai Central every day at 21:30 hrs and reaches Amritsar Junction at 05:45 hrs the third day, averaging a speed of 58.6 Kmph over this journey.

In 1928, when the train service was introduced, it took 40 hrs from Bombay to Amritsar, leaving Bombay at 1950 hrs and reaching Amritsar at 1145 AM the third day, averaging a speed of 47.3 Kmph. The train was non-vestibuled and needed at least 30 minute halts at each of the major stations for passengers, to alight for meals in the dining cars(for upper class passengers) and at refreshment rooms for 3rd class passengers. This was also the interval for third class passengers to attend to nature's call, as only the first class, Inter class and 2nd Class coaches had toilets provisioned. A dining car time-table of the era is reproduced below. The total time necessitated by these meal halts was one fourth of the total journey time.

Frontier Mail – Northbound

station	Day	arrive	Depart	Notes
Bombay	A	--	7:50 pm	Departure
Baroda	B	5:30 am	6 am	breakfast begins
Nagda	B	11 am	11:30 am	luncheon begins
Kota	B	5 pm	5:30 pm	dinner begins
Mathura	C	midnight	12:30 am	
Delhi	C	3:30 am	4 am	carriages changed
Ambala	C	7 am	7:30 am	breakfast begins
Amritsar	C	11:45 am	noon	luncheon begins
Lahore	C	1 pm	1:20 pm	
Rawalpindi	C	5:40 pm	6 pm	dinner begins
Peshawar	C	7:50 pm	--	Destination

Several minor water and coaling stops not shown

While several arguments can be put forth that the number of coaches hauled have been augmented from six (carrying capacity of 450 passengers) to twenty one, steam traction has been replaced with diesel/electric traction, the maximum speeds having gone up from 90 Kmph to 130 Kmph, the average speeds tell a different story. Higher maximum speeds have not translated into lower journey time for passengers.

Chapter 2: Choice, Competition and Autonomy

Why Choice, Competition and Autonomy Matter

2.1. A market economy in a free, democratic society is based on the principles of choice, competition and autonomy. Choice enhances the lives of ordinary people by giving them freedom to choose between competing sellers. Competition between providers of services like the Railways, lowers costs and prices, improves customer service, spurs innovation and optimizes the resources of society. Autonomy leads to accountability and efficiency and improves the lives of employees. Existing IR employees also benefit from choice, not just as consumers, and this is explained in later Chapters. Moreover, choice and competition are mutually reinforcing. Empowered consumers activate competition by rewarding those providers who deliver the best service to meet their needs; while competition gives service providers the incentive to deliver what consumers want, as efficiently and innovatively as possible.

2.2 In pursuit of these fundamental principles, country after country has broken the monopoly of its state-owned railways. The results of these efforts have been spectacular, as we shall see below: services have improved, customers are empowered and happier, balance sheets of the railway companies are stronger, and the state no longer carries the financial burden of subsidies. This experience has also disproved the old myth that the Railways are a natural monopoly.

2.3 Earlier, it was believed that competition could not be introduced in the Railways, because it was a natural monopoly because of the huge economies of scale in the railway industry. In recent years, this thinking has changed. Experience has shown that whereas duplicating track infrastructure is generally inefficient, operations of rail transport services can be subject to competition. In other words, while the track and infrastructure may be a natural monopoly, multiple operators can compete with each other in running trains along these tracks.

2.4 IR remains one of the last state railway monopolies in the world. It is an outlier in an era where choice, competition and autonomy are fundamental values. Since 1991, Indians have experienced in abundance the benefits of breaking down state monopolies. The revolution in telephone communication is the most dramatic example. In 1990, there were only five million telephones in India; in December 2014, there were 970,955,980 mobile phones in use, apart from landlines. As a result of competition in telecom, supply increased, prices came down, services improved, corruption diminished and innovation flourished. The same impressive benefits have accrued in breaking the monopoly of Air India/Indian Airlines in civil aviation, of Doordarshan in television, and of state monopolies in many other sectors.

Problems Arising from State Ownership of Railways

2.5 Some decades earlier, the common structure for the Railway sector in most countries was that of a single, state-owned firm, as in India. This structure essentially gave rise to three sets of problems:(a) *Absence of hard budget constraints*. By virtue of being state-owned, Railways do not face a hard budget constraint; they always have an option to have recourse to government funding. This means that Railways have little incentive to be cost-effective, or to respond flexibly to changes in user demand. (b) *Government interference in operations*. Railways do not enjoy adequate autonomy. The government interferes in Railway's day-to-day operations to attain political objectives. Faced with the obligation of fulfilling the government's political objectives, the Railways find it difficult to focus on commercial goals. This also weakens the accountability of management, which tends to become passive (for example, changes to route networks and services usually require government approval) and unlikely to respond to changing market conditions. (c) *Vertically integrated monopoly structure.* Historically, Railway enterprises, the world over, have been publicly owned monopolies, entrusted with the unified management of both the infrastructure (rights of way, track, terminals and associated traffic management) and Railway services (the conveyance of passengers and freight). Further, since Railways emerged as monopolies, it became imperative for owner governments to regulate their prices and service provisions to protect public interest. Such vertically integrated structures of Railways, both owned and regulated by the government, remained broadly unchanged in several countries, primarily because governments found this structure most suitable for advancing political objectives. This structure, however, does not allow any introduction of competition, or its concomitant benefits for consumers or for the nation.[25]

2.6 As has been indicated in Chapter 1, these three problems typify IR too. As a protected monopoly, IR has failed to respond to new demands for expanded services or improved quality. The costs have tended to be too high, partly due to excessive staffing. In addition, political pricing of passenger fares has forced IR to charge uncompetitive and high freight tariffs. Dissatisfied with deteriorating services and rising tariffs, freight customers have shifted to road transport; profitable higher end passenger customers have also begun to move to low-cost airlines in recent years. As revenues have fallen on account of this, IR has found it difficult to adequately maintain assets or create new capacity to serve customers, and this in turn has forced even more customers to turn away, leading to a financial crisis.

[25]The reasons for the failure of publicly owned railways have been neatly summed up by the Economic and Social Commission for Asia and Pacific in its report, *The Restructuring of Railways.*

Key Reasons for the Failure of State-Owned Railways

Misguided Intervention– whereby governments, for example, have often imposed unsustainable fare and service conditions, overestimating what can be accommodated through internal cross subsidies. In India, passenger fares have been kept at unsustainably low levels and new trains have been introduced on economically unsustainable routes.

Excessive Operating Costs– often arising from a combination of over-staffing, operational inefficiency, and poorly targeted capital investments. In India, the wage and pension bill of IR accounts for nearly half of its operating costs. Also, a wide range of non-core activities undertaken by the railways--which are unrelated to running trains, nor a part of their core competence--have both distracted management and worsened finances. In addition, IR has often had to bear track and infrastructure costs which have not been borne by operators in other competing transport modes, especially road transport operators.

Perverse Management Incentives – where, entry into the rail sector is restricted and fares and freight charges are usually controlled to limit the rate of return on capital. This has led to the "padding up" of costs by management, which is reflected in unwillingness to pool resources such as terminals; an unwillingness to lease; excessive vertical integration and so on. This is true in India too. There have been instances of IR being unwilling to pool terminals in the few, reluctant examples of opening up container train operations to the private sector. Further, despite significant scope to lease wagons, a cheaper solution for operations, IR has hardly resorted to it.

Lack of Dynamism **–** for example, being a monopoly excludes or limits the possibility of providing innovative forms of lower cost rail transport. As a result of a monopolistic 'take it or leave it' attitude, IR has failed to meet the transport demands of both poorer groups and richer groups willing to pay for more comfort.

The Rationale, Experience and Mode of Restructuring

2.7 The main shortcoming of the traditional structure and management style of IR has been the lack of incentives to align the interest of IR and its management with the interests of users. It has been proven around the world that the only way to create such incentives is through competition and private participation in the supply of railway infrastructure and train services. But railway providers do face competition from other sectors, referred to as intermodal competition. In fact, Railways in several countries, including India, have lost substantial business to the road sector over the years. If competition holds the solution for the sector, why is competition from road transporters not able to spur the Railways to respond?

2.8 The answer is not the incompetence of the managers of the Railways. It is the institutional structure regulating the relationship between governments and their railway organizations which undermines the normal incentives of a competitive economy. The structure does not inspire Railway managers to react in a professional, business-like manner to changing market conditions or changing consumer preferences. If normal incentives were to operate, well-managed Railways would have responded and held on to market shares. Poorly-managed Railways would have perished. But most governments have not allowed their Railways to die, because they recognized that Railways have environmental and other advantages.

2.9 While they cannot let go of their Railways, governments find it increasingly costly to operate them. Faced with competing demands for resources from other sectors, such as education and healthcare, governments have been forced to make their Railways more efficient. This has been the spur to change the arrangements between the government and the Railways and to restructure. The main aim of restructuring is to make the Railways more efficient, dynamic and financially viable, such that they can operate without funding from governments, other than compensations for "public service" obligations. This has invariably required that Railway services become more responsive to customer needs. This has also entailed a major cultural transition within the Railways, from being production-focused to being customer-focused.

2.10 To achieve this end, governments have restructured their railways by: (a) Changing the institutional arrangements between the government and the Railways, and (b) Introducing competition in the functioning of the Railways. These are the same twin objectives that we recommend for the Indian government and IR. The experience in country after country, which opened up to competition, has shown that the entry of competitors has lowered costs and prices, led to better services, and thrown up innovative solutions to customer needs. There is a rich experience from other countries in creating competition and India has a great deal to learn from it, particularly as it is one of the last countries to restructure. The Japanese experience teaches how to make highly profitable use of land and airspace above and near railway stations. The German experience teaches how Railways can morph into an outstanding logistics company. The key lesson from the UK is to retain the rail-track and infrastructure as a publicly-owned monopoly, while opening up rolling stock operations for passengers and freight to the private sector. Three boxes at the end of this Chapter record the lessons from Sweden, Australia and the United States.

2.11 Thus, the mission of the restructured Railways is to provide an efficient Railway service, both for freight and passengers, by replicating the behaviour of a commercial, profit-oriented railway enterprise operating under conditions of competition. This means that Railway services will be demand-driven, customer-oriented and market-determined. If the government, as opposed to the market, wants Railway operators (public or private) to provide certain services that fall short of market terms (such as an unviable route or unviable fare for poor passengers), both IR and private operators will be *obliged* to provide them, as long as the government (Union or State) commits itself to pay for the shortfall.

2.12 Restructuring requires a number of steps that are elaborated in greater detail later in this report. Overall, it requires a clear division of responsibility between the government and operating railway organizations. The government, through the Ministry of Railways, will only be responsible for Railway sector policy. First, it will give autonomy to IR and not micromanage it, nor promote its interests at the expense of competitors. On the contrary, the Ministry will promote competition and encourage private investments. Second, private investments will only come if there is an independent umpire, a regulator, responsible for ensuring fair and open access and for setting access charges on the rail-track. This RRAI will set tariffs in cases where there is no price discovery by the market. It will adjudicate disputes between competitors. The regulator will ensure safety at all levels in the Railway system. Third, private entry in the running of trains will only be possible if there is clear separation between the organization responsible for the rail-track/common infrastructure and the trains that will run on them. Thus, IR will need to be unbundled into two organizations—one, responsible for the track and infrastructure and another that will operate trains. We will elaborate on this further in Chapter 3. Fourth, open access will encourage the private sector to run both freight and passenger trains in competition with IR. Private participation in various railway infrastructure services and non-core activities like production and construction will also be allowed. Fifth, in order to efficiently compete with the private sector, IR will have to focus on its core activity of running trains and divesting itself of non-core activities. These non-core sectors are elaborated in Chapter 3.

Essential Components of Restructuring

- A clear division of responsibility between the Government of India and railway organizations. The Ministry will only be responsible for policy and Parliamentary accountability.
- Need for an independent umpire. The private sector will only come in if there is fair and open access to infrastructure. Hence, shift regulatory responsibility from the government to an independent regulator.
- Separate, independent organizations for Railway infrastructure and those responsible for running trains. Hence, the necessity of unbundling of IR into two independent organizations: one, responsible for the track and infrastructure and another that will operate trains.
- Allow private entry into running both freight and passenger trains in competition with IR. Encourage private participation in various Railway infrastructure services and non-core activities like production and construction.
- IR will focus on core activities to efficiently compete with the private sector. It will distance itself from non-core activities, such as running a police force, schools, hospitals and production and construction units.

How to Create Opportunities for Competition?

2.13 Many activities traditionally performed by a state owned monopoly like the public Railways can be more effectively performed by the private sector. As discussed, the benefits can be huge in creating transparency and accountability. How does one generate opportunities for competition and private participation? One of these is via decentralization. Decentralization is particularly appropriate for local passenger services (i.e. suburban or non-trunk routes), which rarely cover costs, but which local governments may wish to subsidize. The advantage of getting State Governments to provide passenger services, where the transport need is essentially local, is that such decentralization would promote greater accountability to local people and be subject to local sensitivities. Since State governments have no experience in running trains, this would create opportunities for the entry of the private sector via long term contracts.

2.14 Other opportunities arise from unbundling a state-owned monolith. The separation of rail-track from rolling stock is only one form of unbundling. Another comes from separating non-core activities. Functions such as maintenance, ticketing, sanitation, catering and laundry can bring in competitive private sector entry. Delinking totally peripheral activities - such police, hospitals and schools - creates opportunities for competitive private sector participation and will deliver great returns, not only in capital invested, but in terms of focus.

2.15 Both decentralization and unbundling will also address the ills of a monopoly--the absence of transparency and lack of accountability. Unbundling will lead to the establishment of profit and cost centres within IR and these will help improve financial information and accountability.

What Forms can Private Sector Participation Take?

2.16 Private sector participation can enhance the performance of the Railway sector, as well as that of IR. Private participation is usually based on contracts. An important lesson from the earlier incremental experience (documented below) is that the present system of choosing the lowest bidder has to weighed against the need to bring in higher quality providers who can become long-term, strategic partners of IR. Pioneered by the Japanese automobile industry, this practice is followed by the best organizations in the world, both in the private and public sectors. We list below some of the ways in which the private sector can play a larger role.

2.17 **(a) Service Contracts -** IR can have the private sector perform many activities on the basis of competitive, well-designed, long terms contracts from the construction of infrastructure, to manufacturing of wagons, to maintenance of locomotives to ticket sales and inspection. "Pakistan Railways contracts out ticket sales and inspection and on-board services for two lines out of Lahore. The contractor pays a fixed rate to the railway and therefore has an incentive to collect as much as possible. This arrangement has

reduced the previously high level of ticket-less travel. Other contracted services in Pakistan include luggage handling and parcel service."[26]

2.18 **(b) Management Contracts -** Here, several private firms bid for O & M (operation and maintenance) contracts and the chosen contractor assumes responsibility for operations and maintenance of a particular activity, or even an entire Railway. This can be designed such that the compensation is based at least partly on results.

2.19 **(c) Leasing to the Private Sector -** This is also done on a competitive basis; but here, the contractor pays a fee for the use of fixed assets. The lease contractor typically finances working capital and replacement of some assets, thereby taking more risk than O&M contractors. The lease contractor gets more autonomy, particularly in respect of control over working capital and all aspects of staffing and management. In 1985, the State Railways of Thailand contracted, through a lease agreement to private operators, the provision of long-distance express passenger services on three lines, which were previously unprofitable. Through improved service quality, the new operators could attract several road users, particularly high-income, long-distance customers and in two years, began to earn substantial profits.

2.20 **(d) Leasing from the Private Sector -** In many countries, there are private companies that buy equipment and lease them to the Railways. IR created a subsidiary, the Indian Railways Finance Corporation (IRFC), which issued bonds to private individuals and entities, to buy equipment, and lease it to the Railways. Those who subscribe to IRFC bonds are no doubt a source for private financing of Railways; but they hardly bother to monitor the risks of IRFC, a government-owned enterprise. There is yet another weakness of this system; namely, the risk embedded in the business of buying equipment and leasing them out to Railways should ideally reside outside the railways, not with a Railway PSU.

2.21 **(e) Concessions -** A concession is a contract between a company and a government that gives the company the right to operate a specific business within the government's jurisdiction, subject to certain conditions. The concessionaire usually has to pay the government ongoing fees that may either be a fixed amount or a percentage of revenues. Concessions are a form of lease in which the contractor agrees to make certain fixed investments and retains the use of the assets for a longer contract period, sometimes up to 30 years. Concessionaires for a specific business are chosen on the basis of a transparent auction process.

2.22 **(f) Joint Ventures -** Typically, joint ventures involve private partner companies contributing to the development capital, planning and management expertise in the development of land or other real estate owned by a Railway. British Rail created a Property Board to develop station space in concert with the private sector.

[26] ESCAP, *Ibid.*

2.23 **(g) Private Ownership -** Here, the controlling interest lies with the private sector. Examples can be found in Sweden and the United Kingdom, where the right to provide services has been franchised to privately-owned and operated train operators. The most important feature of this method is that the market risk resides with the private sector.

Past Attempts to Attract Private Entry into IR

2.24 Private sector participation in IR has been muted, particularly when compared to other sectors like ports, telecom, electricity, airports and roads. Several attempts have been made, in the last several years, to involve the private sector, particularly in wagon procurement and leasing, freight trains and container operations, terminals and warehousing facilities, catering services, and other rail infrastructure through schemes framed by the Ministry of Railways. There are rich lessons to be learned from these mostly failed efforts. High costs and lower returns, policy uncertainty, lack of a regulator to create a level playing field, the lack of incentives for investors, and procedural/operational issues have significantly restricted private sector participation. Some of these past attempts at involving private sector are detailed below.

2.25 Wagon Investment Schemes (OYWS, WIS, LWIS, WLS) - The *Own Your Wagon Scheme*, launched in1992, was an early attempt to tap private sector participation for augmenting wagon supply in IR. Under this scheme, private sector firms could procure wagons either through IR or directly from approved wagon builders, own them and lease them to IR. In return, IR paid an annual lease charge, which was linked to the procurement cost. This scheme has been successively revised and recast as the Wagon Investment Scheme in 2005 and the Liberalized Wagon Investment Scheme in 2008. In 2008, yet another scheme was launched to introduce the concept of leasing of railway wagons. The revisions were aimed at expanding the scope of private participation and were based on the lessons learned from earlier schemes. Despite several amendments, these schemes did not achieve success, partly because of delays on the part of IR in (a) formulating new schemes; and (b) providing clarity on various aspects of these new schemes. Moreover, IR's stringent conditions and tedious procedures further reduced investor interest.

2.26 Container Policy Liberalization (Container Train Operators) - Since inception in 1989, the Container Corporation of India (CONCOR) has had a virtual monopoly in the container operation segment in India. This lasted till 2006, when the Government, recognizing that the Railways were continuing to lose container traffic to the road sector, despite the existence of CONCOR, decided to allow private players to obtain licenses for running container trains on the IR network. The initial response to the policy was encouraging, with 14 operators signing an agreement with IR to run container trains in the first year of registration. In the subsequent year, however, the number came down to two, as CONCOR imposed restrictions on the 13 container train operators from the previous year to do business with its existing customers as a precondition for accessing its terminals. Further, huge costs (registration, acquiring land and developing facility, haulage charges – for using IR facilities, etc.) and special treatment to CONCOR (given that IR held 63% stake in it) brought down investor interest even further. The recent

sharp hike in haulage charges (as high as 100% for some commodities) by IR has been a huge negative for these private container train operators. The lesson here is that in the absence of an independent regulator, it is not possible to have a level playing field for private players, especially where a publicly held company under the Ministry of Railways is one of the competitors.

2.27 Special Freight Train Operator Scheme (SFTO) - Along the lines of container train operators, the Ministry of Railways introduced the Special Freight Train Operator Scheme in July 2010, for commodities requiring specialized wagons. This scheme aims to increase the share of Railways in non-conventional traffic, such as bulk cement, bulk fertilizers, fly ash etc. (which require SPWs or Special Purpose Wagons). This policy provides an opportunity to logistic service providers or manufacturers to invest in wagons and use advantages of Railway transport to tie up with end-users and market the train services owned by them for rail transportation of these commodities. This scheme too failed to draw any investor interest, partly because it favoured IR and partly because of poor implementation at the zonal and divisional level. The Ministry of Railways later relaxed several conditions to make it more investor friendly in July 2013, including increasing the rebate period to 20 years and reducing registration fees. But it is unlikely to succeed in the absence of a lack of trust between the private sector and IR. Only a truly independent regulator can help establish trust.

2.28 Automobile Freight Train Operator Scheme (AFTO) - Further, to increase IR's market share in the transportation of automobiles (two/three-wheelers, cars and tractors) by inviting private participation, a new scheme, namely, the Automobile Freight Train Operator Scheme (AFTO) was introduced in July 2010. At present, less than 5% of automobiles move by trains, with the remaining moving on trucks, much lower than other geographies (70% of the movement in the United States is by trains). This new policy will facilitate bulk movement of automobile traffic by rail from production hubs to consumption centres. Given limited takers due to excessively high pricing, this policy was later tweaked in March 2013 to make it more investor-friendly by adding more cargo (to include spare parts, knocked down units of automobiles and car shells, apart from finished vehicles), opening the scheme to car makers and simplifying the rate structure. Maruti Logistics and APL Vascor are the only companies who have registered as AFTO operators.

2.29 Special Parcel Train Operator Scheme (SPTO) - In another attempt to encourage the private sector for wagon procurement and to regain market share in non-bulk traffic (where IR has been losing share to the road sector), IR recently introduced the Special Parcel Train Operator Scheme in November 2014. Under this scheme, any private company satisfying specified eligibility criteria is eligible to apply to procure Parcel Vans. While it is too early to assess the success of this scheme, the lack of coordination between the zonal railways to eliminate operational constraints could prove to be a major deterrent, as witnessed historically with other similar schemes. The nation today stands at the cusp of an e-commerce revolution. The Railway sector can play a major

role in it, as long as it changes its mindset to either become a logistics company or lease out its facilities to a logistics company. With an independent regulator, this should be possible.

2.30 Private Freight Terminals (PFTs*)* - To facilitate the rapid development of a network of freight handling terminals, a policy known as Private Freight Terminals was introduced in 2010 to invite private participation and was later revised in 2012. The objective of the policy was to provide efficient and cost effective logistics services with a warehousing solution to end-users. This would be a new business opportunity for investors to augment presence in the logistics chain and gain access to handling third party cargo. The Ministry has close to 35 proposals for PFTs from 22 companies, as of December 2014. Setting up a PFT requires Rs 100-150 crores. In the recent budget, the Railway Minister has pointed out that certain issues like agreement conflicts and delays in approvals have emerged, which are discouraging further investments in PFTs. The Government intends to address these urgently, so that expansion of these terminals is not hampered. There are other issues as well, relating to the consideration of private sidings to operate as PFTs or to the ability to operate OPFTs (own private freight terminals) on land jointly owned /leased by private parties and IR. But the long-term solution again lies in introducing an independent regulator to reduce the trust deficit.

2.31 Dedicated Freight Corridors (DFCs) - The first seeds for the Dedicated Freight Corridor (DFC) were sown in April 2005. The DFC project involves six freight corridors along high density routes across the country. The corridors are planned for faster freight movement by reducing congestion at various junctions and terminals. Two DFCs in the Western (connecting Haryana and Maharashtra) and Eastern (connecting Punjab and West Bengal), covering about 3300 km have already been approved. The estimated cost of the project has risen to Rs 800 billion (from Rs 280 billion estimated initially), and the target for completion has been extended to March 2018. The plan, however, has evoked serious introspection against the backdrop of poor response so far. The policies, tilted grossly in favour of IR, have discouraged private players from investing in DFC projects. Although it was launched in 2006, the first major contract for the construction of the 343-km long track in the Eastern Corridor was awarded to a Tata-Aldesa joint venture in January 2013, and the second to L&T-Sojitz joint venture in June 2013. Other issues in the implementation of the project include delays in funding and land acquisition, frequent changes in management and cancelled tenders or slow orders. This case study is typical of the ills that beset a state-owned monopoly.

The Framework for Private Sector Entry

2.32 The schemes listed above are not exhaustive, but they give a clear indication of the problems and prospects of private participation in the Railway sector. IR has progressively demonstrated its interest in attracting private participation in areas which have been the exclusive preserve of IR. The schemes have achieved success in varying degrees, but it would be fair to say that most of the schemes have not delivered. The reasons for the failure differ from scheme to scheme, but there are some common themes.

2.33 The first reason for failure is that policy-making, the regulatory function, and operations are vested within the same organization. There is a clear conflict of interest when the policy-maker and regulator is also a competitor. As long as this is the case, private players will always suspect that the schemes are tilted in favor of IR or one of its PSUs. An atmosphere of trust is absolutely essential for private sector entry. The CONCOR experience demonstrates that a level playing field cannot be created without an independent regulator. Hence, it is imperative to split the roles of policy-making, regulation, and operations.

2.34 Second, many of the schemes were well-meant and even innovative, but they turned out to be ill-conceived, because they were formulated without involvement of the user. As a sovereign monopoly, IR had a mind-set that precluded a duty to consult with the private sector. It took many years before the schemes were withdrawn or revised. In the meantime, investor confidence eroded further. Today, there is a real trust deficit, which can only be overcome with the radical restructuring that is proposed by this Committee.

2.35 Third, there was a tendency in these schemes to start with stiff, user-hostile conditions and then loosen them subsequently, when the scheme failed to deliver. In fact, there is a strong perception in the minds of IR that the private sector must not earn undue profits from Railway assets and services. The fact of the matter is that all such initiatives involve a combination of risk and return. If IR begins with the belief that all risks in any proposed scheme or partnership should involve the risk residing in private parties and that profits should be "modest" irrespective of the risk involved and conditions imposed, it should not come as a surprise that such initiatives have failed to deliver anywhere near expected outcomes. The Automobile Freight Train Operator Scheme (AFTO) scheme, for example, was tweaked three years after it was launched to expand its scope by allowing more cargo, opening up to car makers, and so on. It is worth pondering as to why the scheme was not designed sensibly from the beginning. Had the policy function been housed in a separate organization from the outset, there would have been a greater chance of success--the scheme would have been formulated more objectively from the outset. Overall, this Committee's assessment is that sustained and large scale private sector participation will not be possible without separating the functions of policy-making, regulation and operations, as also a sea change in the mindset of IR towards private sector participation.

2.36 There are three broad ways in which a private company can get involved in the "competition for the market": a private company may (i) receive a flat fee for management, without any responsibility for investment (service contract); (ii) do O & M, with a limited responsibility for investment (O & M contract); and (iii) have complete responsibility for procuring and operating a train or constructing and operating a physical infrastructure (such as terminal or laying of tracks), and financing necessary investment at its own risk (concessions). The private sector has shown far greater interest in the first two categories, as compared to the third category, with investment and risk-taking by the private sector. In the first two categories, governance is typically a challenge. This Committee recommends that IR moves progressively to the third category. While the first

two cannot be wished away, at least for the next few years, attempts must be made to address the governance issues.

Attempts to Attract Foreign Investment

2.37 Core and non-core activities of IR have been progressively opened up to foreign direct investment (FDI), beginning in May 2001, when FDI was permitted up to 100% via the automatic route for Mass Rapid Transport Systems in all metropolitan cities. Till now, however, FDI into the Railways as a whole has been a paltry USD 634 million (till December 2014). Recognizing this, in August 2014, the Government permitted FDI in construction, operation and maintenance of high speed train projects, dedicated freight lines, rolling stock, including train sets, signaling systems, freight terminals, to name a few areas. The Ministry of Railways has since issued sectoral guidelines for domestic/foreign direct investment in the Railways in order to "augment capacity, modernize and bring efficiency through technology upgradation on the Indian Railways network and to generate finances for undertaking these activities from both domestic and foreign investors."

2.38 The experience so far in attracting FDI has been lower than expectations because of a number of reasons, emanating from the way IR has dealt with potential FDI investors. There have been numerous incidents of changing goal posts midway, altering ground conditions subsequent to the RFQs (request for quotations), and delays or complete lack of delivery by IR of its commitments. The classic example of this is the attempt to bring FDI in the manufacture of locomotives via the two locomotive factories in Madhepura and Marhaura which were still languishing 7 years after the initiation of the projects. The bidding process, even after undergoing several rounds of alteration and iterations, did not reach conclusion. This, when leading global players in the locomotive technology had evinced interest and were shortlisted, and the process was being monitored at the highest level.

2.39 The Government is rightfully optimistic about bringing foreign direct investment into the Railway sector, as the benefits are significant: the induction of cutting-edge technology and international management practices that can dramatically help to modernize IR. However, foreign investment will not come under the present scenario. It will come only if the Railway sector is reformed along the lines discussed in this Report and the change in incentives and structure as proposed in this Report are put in place. The Railway sector will then become worthy of foreign investment in ancillary production units, terminals, signaling, logistics and the operation of trains.

Creating Autonomy and Conditions for Liberalization

2.40 Like choice and competition, autonomy is one of the fundamental principles of success in the market place. It improves efficiency, leads to accountability and improves the motivation of employees. IR has made several successful attempts to create autonomy and these have lessons. With the aim of organizing several parts of its activities under an autonomous setting, IR has from time to time created a number of PSUs: for example, CONCOR was created to manage container traffic, RITES for consultancy, IRFC to raise funds from the market and IRCTC for catering, e-ticketing etc. There are 16 such organizations under public ownership (although CONCOR was the only one publicly listed) and most of them operate as monopolies. The aim of creating these organizations was to enhance organizational focus. Their Boards were given autonomy and made accountable. But all of them enjoyed the patronage of IR. Although they have met with varying degrees of success, it would be fair to say that granting a degree of autonomy to these organizations, has helped IR to carry out some of its activities more efficiently than otherwise. Even so, the full benefits of autonomy have not been achieved, primarily because these organizations have been protected from private competition and allowed to act as monopolies. IR has, in fact, granted autonomy to some of its traditional activities within a corporate setting: for example, CONCOR was created to manage container traffic, RITES for consultancy, IRFC to raise funds from the market and IRCTC for catering, e-ticketing etc. There are 16 such organizations under public ownership and most of them operate as monopolies. The aim of creating these organizations was to enhance organizational focus. Their boards were given autonomy and made accountable (although CONCOR was the only one publicly listed). But all of them enjoyed the patronage of IR. Although they have met with varying degrees of success, it would be fair to say that granting a degree of autonomy to these organizations, has helped IR to carry out some of its activities more efficiently than otherwise. This needs to be extended to production units and construction organizations. The overall lesson from these efforts of IR is that autonomy does indeed help in creating focus and efficiency. Autonomous bodies (such as PSUs and SPVs) are organizationally better suited to create focus than departmental structure. Of course, for an organization like IR, autonomy is not the only way to create focus. Nor should it be the first step. For example, IR can be more focused by simply shedding all its non-core activities.

2.41 Container Corporation of India Ltd (CONCOR) - A Navratna Public sector undertaking, CONCOR commenced operations in1989, taking over seven inland container depots from IR. It was listed on Indian stock exchanges with the current public holding of 37%. The rail container business grew rapidly and CONCOR enjoyed great success as a result of customer focus and reliability in providing container transport from inland depots to the ports. Its depots and terminals have grown to 61 and its share price increased, reflecting its success. CONCOR's success proves that autonomy matters. Although it was managed by persons trained by IR, it has run independently, with outside shareholding

reinforcing autonomy. It has focused on its main business and responded to customer needs and has held its own in competition against road container services. However, it had the advantage of being a first mover and of being a monopoly for 15 years. By the time that container rail service was opened to the private sector, CONCOR was deeply entrenched and it was difficult for new entrants to make headway. Had competition come at the beginning, the country might possibly have benefitted more.

2.42 Port-based projects executed with private funds through autonomous Special Purpose Vehicles (SPVs) - In addition to the PSUs stated above, IR has also created autonomy through the SPV route, which involve both public and private investments. The port connectivity projects created this way have achieved a great deal of success. Four port-connectivity projects are operational and three more are in progress. What is noteworthy is not so much the size and extent of private equity contribution, but the autonomy enjoyed by the SPVs, which partially helped in the single-minded and focused pursuit of project work by management. A snapshot of the operational projects is shown in Table 2.1.

Table 2.1: Port-based projects through SPVs

	Pipavav Railway Corporation Ltd.	**Kutch Railway Company Ltd.**	**Bharuch Dahej Railway Company Ltd.**	**Krishnapatnam Railway Company Ltd.**
Route Length (km)	**271**	**301**	**67**	**113**
Date of Commissioning	**1-4-2003**	**24-03-2006 (Ph-I) & 26-11-2006 (Ph-II)**	**08-03-2012**	**Jul-09**
Project Cost (Rs. Crore)	**406**	**500**	**385**	**1203 (including Ph-II and III)**
Total Equity Contribution of Promoters (Rs. Crore)	**196**	**200**	**155**	**270**
Total Debt (Rs. Crore)	**210**	**300**	**230**	**933**
Investment by MoR or its PSU(s) (Rs. Crore)	**98**	**100**	**55**	**81**
% of cost invested by MoR/its PSU(s)	**24.14%**	**20%**	**14.30%**	**6.73%**
Annual Traffic 2013-14 (Million Tonnes)	**8.71**	**26.9**	**6.63**	**15.4**
Expected Annual Traffic 2014-15 (Million Tonnes)	**9.83 (up to February 2015)**	**29.19**	**11.2**	**16.4 (upto Dec 2014)**
SPV's Share in Earnings 2014-15 (Rs. Crore)	**266.25 (up to February 2015)**	**584**	**139**	**45 (upto Dec 2014)**
IR's share in Earnings 2014-15 (Rs. Crore)	**1261**	**4471**	**1422**	**1443 (upto Dec 2014)**

2.43 In pursuit of the principles of choice, competition and autonomy, and based on the experience outlined in this Chapter, we recommend and reiterate the following. Create a clear division of responsibility between the government and the operating railway organization. The government, through the Ministry of the Railways, will only lay down

policy for the Railway sector and give operating autonomy to IR. The aim of the Ministry will be to promote competition and encourage private investment in the Railway sector and not micromanage, nor promote the interests of IR. Create an independent umpire--a regulator. Competition in the Railway sector is only possible if the regulator ensures fair and open access and sets access charges; establishes tariffs in cases where there the market fails to discover a price; and adjudicates disputes between the track-owning organization and train operators, and between competitors. The regulator will ensure safety in the Railway system. Ultimately, even explore the possibility of unbundling IR into two organizations—one, responsible for the track and infrastructure and another that will operate trains in competition with private players. Make fair and open access a reality and open up both freight and passenger trains, in competition with IR. Successfully attracting FDI will require a complete change in the mindset of IR.

2.44 This Chapter has provided the Committee's vision of a vibrant, reformed Railway sector, based on the principles of choice, competition, and autonomy. In that template, policy is determined by the Ministry of Railways and the principles of competition are enforced by the RRAI. There is liberalization in the form of greater private sector entry. IR must be empowered to survive in that regime of competition. Therefore, in Chapter 3, we turn to the way in which IR must be empowered to thrive and prosper in that environment of competition. It cannot be asked to swim, with its hands tied.

Creating Competition in Railways – the Swedish Experience

Sweden is an interesting example of a country that has followed the path of vertical separation and has, thus, managed to introduce intra-modal competition for the provision of most services.

After years of struggling with Railway finances, in 1988 Sweden separated its Railway infrastructure from the incumbent operator (SJ), four years before the EU Commission began the process across the EU. The purpose of the change was primarily to clarify the accounts of the Railways and to separate socially important services from commercial ones, so that public support could be limited to public objectives. In addition, the separation permitted the state to finance infrastructure directly through the infrastructure manager (Banverket), and to impose access charges that would place the Railways on an equal footing with other modes, including environmental impacts. Intra-modal competition was not an objective at the outset, and SJ was left in control of the scheduling and dispatching on the network.

In 1996, control of scheduling and access was shifted to Banverket from SJ, and open access for freight was imposed. SJ continued to operate all passenger services, with support for local and regional services negotiated with local authorities. By 1998, local authorities started to put more and more local services up for competitive franchises and, over the next few years, SJ lost heavily to the competition, because of its high costs and rigid management. SJ managed to retain a monopoly on "profitable" intercity passenger services. Beginning in 2006, the SJ monopoly over intercity passenger services was eroded, at first with entry in the provision of overnight and

weekend trains, then international trains and, in December 2011, the network was fully opened to competing passenger operators.

In 2011, Sweden received the highest score in a study performed by Kirchner (2011), which tried to assess the degree of liberalization of the Railway industry achieved by EU member states via a number of indices. Currently, rail infrastructure is managed by the state agency (Trafikverket) that manages all transport infrastructure. Access charges for freight are low and simple. The state-owned freight operator (Green Cargo) still provides the majority of freight service, but faces increasing competition, both inter-modal and intra-modal. All local and regional passenger services are subjected to gross-cost franchised competition and local authorities work together to provide jointly needed assets, such as rolling stock.

Creating Competition in Railways – the Australian Experience

Railways in Australia were originally built as separate rail networks in each state, often using different track gauges. Several years of reform resulted in a national network with a mixture of public and private ownership. Most public rail networks are still owned by provincial governments, but some provincial rail networks are now managed by the national infrastructure manager. Australia also has private railways linking coal and iron ore mines to ports. There are about 10 freight carriers of significant size and about the same number of infrastructure managers for freight. Most networks are interconnected with other networks.

The Australian Constitution provides all parties with access to strategic assets. Railway infrastructure was designated as a strategic asset in the 1980s. This has transformed the Australian rail sector. Australia has introduced open access for freight Railways built for common use, even if these are in private ownership. For example, the Australian Competition Tribunal in 2010 decided that third parties should be allowed to use some of the lines owned by two major iron ore companies. The third parties would, in practice, be smaller mining companies, for whom it would not be economical to build their own lines. The tribunal did not, however, require open access for other rail lines owned by big mining companies.

Some Railways have vertical separation of infrastructure, while others have retained vertical integration. The isolated mining railways discussed above, however, remain vertically integrated. Most carriers and some infrastructure owners are in private sector ownership.

Infrastructure charges vary between infrastructure managers and lines/trains, but there are common rules:

- Discrimination is not allowed—infrastructure companies must charge the same for the same service.
- Charges can vary between an established floor (based on marginal cost) and an established ceiling (based on total cost).
- Within this range, rates may be negotiated.

Creating Competition in Railways – the North American Experience

The freight Railways of the United States (US) consist of seven large Class I Railways (including two Canadian-based railways that operate in the US) and several hundred smaller Railways (mainly short lines connecting industries to Class I Railways). The freight Railway industry in Canada has a similar structure, with two major national vertically integrated Railways. There is coordination at the national level on technical standards, but not on operational planning and control: each Railway is responsible for its own network and coordinates with other Railways at boundaries.

All Railways in North America are vertically integrated, as they used to be in all countries in the world and still are in most. Freight Railways in North America are privately owned, and ownership crosses international frontiers. Passenger Railways are all loss making and are publicly owned.

To give investors in private and largely unsubsidized freight Railways the best chance of recovering their costs and to ensure that there are adequate incentives to invest, they are not required to provide open access. Third party access (known in the US as trackage rights) is sometimes permitted, but is not automatically available by law to all licensed carriers. The terms of access, including infrastructure charges, are usually negotiated between the Railways buying and selling access rights and generally remain confidential. Trackage rights access may also be imposed by the regulator: for example, as a condition of a merger or if a shipper complains about abuse of monopoly power.

In North America, more than 60% of the freight wagon fleet is not owned by the Railways themselves, but by shippers or leasing companies (compared with 50% in the Russian Federation and 30% in the EU). However, these wagons are exclusively hauled by Railway companies. All wagons used in North America must meet technical standards developed by a joint industry committee and can be used throughout the entire network.

Chapter 3: The Decision-Making Structure of IR

Core versus Non-Core

3.1 From this Chapter, we move on to IR proper. As a preliminary, one needs to define what one means by IR and this amounts to a revisiting of the core versus non-core discussion, indicated in Chapter 1. Thus, we first pin down the core IR function, one of running trains. Having done that, the overarching argument is that of decentralization, the implicit argument being that IR is overly centralized and that this centralization problem has worsened down the years.

Policing or Protection of Railway Property

3.2 The Railway Protection Force (RPF) was constituted under the RPF Act of 1957 and has a sanctioned strength of 75,704. Its task is better protection and security of railway property, passenger areas and passengers. Under the Railways Act, it also has powers against offences like the pulling of alarm chains, travelling on roofs, touting, ticketless travel and unauthorized entry into coaches earmarked for women. Under the Railway Property (Unlawful Possession) Act of 1966, it can also deal with offences like theft, dishonest misappropriation and unlawful possession of railway property. That apart, there are some battalions of the Railway Protection Special Force (RPSF), which will now also have a Mahila Battalion. Unless Railway property is involved, RPF possesses limited powers. Those police powers, for the registration of crimes and their investigation, are vested with the Government Railway Police (GRP). IR bears 50% of the cost of GRP, the remainder is borne by State governments. Though IR bears 50% of the cost of GRP, IR has no administrative control over GRP. That is vested with State governments. In addition, there is the District Police, entrusted with the task of protecting railway tracks, bridges and tunnels. Despite attempts to confer greater police powers to RPF, this has met with resistance by State governments, law and order being a State subject. With three layers of a police force involved, there is lack of co-ordination and conflicts of jurisdiction. While security on running trains is important, there are more efficient ways of accomplishing this. Today, 1,275 mail/express trains are escorted by RPF. But another 2,200 mail/express trains are escorted by GRP. One must remember that there have been other security-related initiatives too, such as the installation of CCTV-s and the introduction of a common security help-line. Historically, the watch and ward function on railways was performed by train operators, through a "private" police force, the governmental function of ensuring law and order being performed through "government" police. The former morphed into RPF, while the latter morphed into GRP and this system continued till 1954. For the GRP, this Committee feels that since IR has no control over GRP, State governments should be persuaded to bear the entire cost, not just 50%. Stated more specifically, there should be negotiations with State governments, to phase out IR's contribution to the GRP, over a stipulated period of time. It is also worth mentioning that there are instances of RPF functions

already being outsourced. For example, in Pune railway station, RPF has already outsourced its functions to a private security firm, Accurate Security Service. Table 3.1 illustrates the cost to IR of ensuring security through RPF. Though there are variations across zones, the costs are inordinately high. With broader governmental police functions taken care of by GRP and the District Police, there remains the question of ensuring security on trains, some of which may be operated by private operators. There is no reason why this function should not be entrusted to the private operators themselves, as used to be the case in the watch and ward era. By the same token, since IR will be constrained to compete with these private train operators, there is no reason to burden IR with the costs of maintaining a RPF or RPSF. This Committee thus advocates the delinking of RPF from the IR system. This is not necessarily a recommendation for dismantling the RPF, per se, but to considerably downsize and bring in private security for protection of Railway property. This will result in huge savings in both staff and pension burden. A parallel can be found in the CISF (Central Industrial Security Force), originally set up to ensure security in PSUs (public sector undertakings). However, that's no longer what CISF does now. It has become a security agency and RPF should also metamorphose into something along those lines. So far as IR is concerned, given the task of ensuring security on a train, the GM of the zone should be free to use private security agencies or even the RPF, on contractual terms. This becomes a matter of conscious choice.

Running Schools

3.3 We now turn to the question of the 168 railway schools. The higher education component, including the centralized training institutes, will be addressed in Chapter 5. These schools are estimated to provide education to 27,216 children of Railway employees and also to 38,441 who are not the children of Railway employees. Historically, pre-Independence, these schools needed to be set up because there was a market failure in areas where new Railway lines were being built, or where new Railway stations and workshops set up. There is a geographical concentration of these schools because of historical reasons, and they are not necessarily concentrated in the most deprived parts of the country. For instance, there are several Railway schools in undivided Andhra Pradesh, Assam, Madhya Pradesh, Madhya Pradesh, Odisha, Tamil Nadu and West Bengal. There aren't that many in Bihar, Chhattisgarh, Jammu & Kashmir, Jharkhand, Rajasthan or the North-East. In contrast, there are 1094 Kendriya Vidayalayas run by the Kendriya Vidyalaya Sangathana and they are much more evenly spread throughout the country. IR itself supports 82 Kendriya Vidyalayas. There are also norms for setting up new Kendriya Vidyalayas. Outside Kendriya Vidayalyas, in places where there are railway colonies, other schools, including private ones, exist now. Therefore, any argument about market failure is difficult to sustain. This Committee favours the integration of the existing Railway schools into the Kendriya Vidyalaya Sangathana set-up. So far as the needs of Railway employees are concerned, there are efficient ways of subsidizing the education of their children in alternative schools, including private schools, instead of IR running schools itself.

Table 3.1: Cost of the Police Force and Railway Protection Force Employed on Railways (2012-13)

Railway	Contribution to State Government for Public	Railway Protection Force				Total Cost to the Railway	Cost	
		Rly. Protection force	Rly. Protection Spl. Force	Contingencies	Total		Per Route Kilometre (in Rupees)	Per Train Kilometre (In Rs)
Central	192215	1525859	112461	48048	1686368	1886507	466758	16.9
Eastern	391250	2424534	257485	19697	2701716	3092966	1214691	44.9
East Central	792049	1798949	246633	159881	2205463	2997512	808847.5	46.7
East Coast	21627	677072	110994	17965	806031	827658	311748.51	18.9
Northern	1049931	2460855	529509	90041	3080405	4130336	579729	29.1
North Central	353517	1055236	92159	16799	1164194	1517711	482000	15.9
North Eastern	212549	938702	159758	11429	1109889	13121781	347270.01	42.4
Northern Frontier	242432	1210212	446117	23662	1679991	1921052	484520.69	65
Northern Western	90967	673509	93165	16538	783212	874179	141335	8.81
Southern	216507	1457394	183082	7452	1647928	1864435	367107.92	26.3
South Central	304658	73686	199518	13924	287128	591786	101118.9	5.38
South Eastern	100909	1375923	211277	19986	1607186	1708095	630084.2	31.2
South East Central	29083	470959	-	13488	484447	513530	206350.5	9.54
South Western	149192	448766	-	3259	452025	601217	188023	16.5
Western	328358	1583627	161482	34101	1779210	2107569	327283	62.3
West Central	114736	556876	-	-	556876	671612	224494	10
Kolkata Metro	11982	119235	-	577	119812	131794	5244488	61.8
Total	**4601962**	**18851394**	**2803640**	**496847**	**22151881**	**26759740**	**408945.23**	**24.1**

Running Hospitals and Medicare

3.4 The issue of the Indian Railway Medical Service (IRMS) is a trifle more problematic. 2,597 medical officers and 54,000 paramedical staff run the services shown in Table 3.2.[27] As this table shows, IRMS performs diverse services: (a) attending Railway accidents and similar incidents; (b) emergency medical treatment for sick passengers; (c) pre-employment medical examination for prospective employees; (d) periodical medical examination for employees; (e) medical boards and other medical certification for employees; (f) safe water supply at Railway stations; (g) safe food supply at Railway stations; (h) running medical first-aid posts for IR factories under the Factories Act; (i) certification of dead bodies; (j) certification of perishable goods; (k) curative health-care; and (l) preventive health-care. The curative and preventive function is not only for Railway employees, but also for those who have nothing to do with the Railways. There is also a Retired Employees Liberalized Health Scheme (RELHS). Unlike schools, where this Committee recommends an immediate integration into the Kendriya Vidyalaya Sangathana, for the IRMS, we favour a more calibrated restructuring, with a phased pruning of the IRMS functions.[28] As Table 3.2 shows, some private hospitals are already recognized for medical treatment. This Committee believes that functions (c), (d), (e), (f) and (g) can be performed by outsourcing to recognized and empanelled private practitioners. The geographical coverage of the CGHS (Central Government Health Service) is limited - it only exists in 25 cities. For (k) and (l), our view is that one should seriously examine the possibility of integrating the 125 railway hospitals into the CGHS framework. There seems to be synergy. The CGHS infrastructure will be extended and IR will be able to concentrate on its core function. In addition, for (k) and (l), subsidized health-care should be extended to Railway employees in more and more private hospitals, and not merely for referral purposes. It needs to be stressed that this treatment for existing Railway employees is cashless and is not on reimbursable basis. It also covers not just in-patient services, but also OPD treatment, including access to medicines. Effectively, since the Railway hospitals aren't closed down, but integrated into the CGHS framework, with the possibility of some of them transiting to a PPP mode and possible conversion to teaching institutions, existing Railway employees obtain greater choice. They too are no longer constrained to seek medical attention in Railway hospitals alone. In sum, the Committee favours a phased, but sharp reduction, in IRMS functions and numbers, in so far as a few limited functions remain with IR. The rest is taken out of IR. It is also possible to introduce an insurance surcharge on tickets, perhaps as an interim measure. This will cover travel-related emergencies, including Railway accidents. Since the incidence of such events will be low, so will the premiums, though the insured amounts can be high. This will facilitate the use of private hospitals and doctors and gradually reduce the need for passengers to depend on IR doctors.

[27] *Indian Railways Annual Report and Accounts, 2013-14*. FSSA is the Food Safety and Standards Act.

[28] For a contrary view, see, *Indian Railways, Strategy for Reforms*, K. B. Verma, Foundation Books, 2015. The contrary view is primarily one directed against privatization and the resultant higher costs. However, this Committee's recommendation isn't quite that.

Table 3.2: The IRMS System, 2013-14

Number of hospitals	**125**
Number of indoor beds	**14,000**
Number of health units/polyclinics	**586**
Number of private hospitals recognized for medical treatment	**250**
Number of patients treated in OPD	**2,31,29,261**
Number of patients treated as in-patients	**4,66,179**
Major and special surgeries performed	**46,661**
Total number of surgeries performed	**1,46,838**
Candidates' pre-placement medical examination	**72,877**
Number of employees' periodical examination	**1,28,171**
Number of railway incidents attended	**30,168**
Number of confinements (deliveries) in railway hospitals	**9,750**
Number of water samples examined for bacteriological reasons	**69,176**
Number of water samples examined for residual chlorine	**10,18,339**
Number of food samples collected under FSSA	**701**
Number of food samples collected under departmental quality checks	**17,705**

Rationalizing Production of Rolling Stock

3.5 IR has six production units. The details are shown in Table 3.4 These units not only produce for IR, but also export overseas, and also sell to domestic customers who are not part of IR. These units are headed by GMs and this flows upwards to the Railway Board and the Railway Ministry. Annual production programmes are approved by the Board. At the level of the Railway Board, there are delays in the finalization of tenders and designs. There is insufficient financial freedom in procurement, works and re-appropriation of funds. GMs lack freedom in vendor development. Quotes in the export market are possible only if they are routed through RITES/IRCON. The production units are inordinately controlled by IR. Indeed, the GMs are also birds of passage from the IR system, with short tenures and no particular interest in the longer term development of the production units. New production units are expected – forged wheels in Rae Bareli, MEMUs (Mainline Electrical Multiple Units) in Bhilwara, coaches in Sonepat, wheels in Chhapra, axles in Jalpaiguri, MEMUs in Kanchrapara and coaches in Kerala. FDI proposals have been invited for an electric locomotive plant in Madhepura and a diesel locomotive plant in Marhora, a consequence of 100% FDI having been allowed in the Railways. In other words, these existing IR production units will be exposed to competition from the private sector, foreign or domestic. Wagons are already produced by the private sector. Coaches and locomotives could follow. Unless they are freed from

their constraints, the existing production units will be unable to face this competition. The Committee therefore proposes that all these existing production units should be placed under a government SPV known as the Indian Railway Manufacturing Company (IRMC). While this remains a government SPV, at least initially, under the administrative control of the Ministry of Railways, making it a government SPV makes it independent of the Ministry of Railways and the government, including in the determination of salary structures, and allows it to borrow. The Independent Directors on the IRMC Board will be chosen by the Public Enterprises Selection Board (PESB). No privatization need be contemplated, at least initially. That would be premature. However, some dilution of equity through IPOs is indeed possible. This would raise capital for modernization of these units. Privatization is to be interpreted as liberalization. That is, in addition to Madhepura and Marhora, private entry should be permitted for the proposed units in Rae Bareli, Bhilwara, Sonepat, Chhapra, Jalpaiguri, Kanchrapara and Kerala. Once the IRMC is taken outside the IR system, there is one minor disadvantage. For rolling stock, wheels and axles bought by IR from IRMC, indirect taxes will have to be paid. However, this is more than neutralized by the benefits. The IRMC model also enables one to devise a better incentive structure for new employees. In fact, this Committee feels that IRMC and its Board should take a decision on commercial considerations. IR has an incentive/bonus system where bonuses are calculated on baseline productivity outputs with little incentive for individual productivity improvements. Ideally, an incentive system works best when it incentivizes individual-based productivity linked to a better final output. Admittedly, incentive systems which unambiguously incentivize an individual to improve his/her productivity are sometimes difficult to implement and one falls back on baseline incentives, such as in the present IR system. For IRMC, a group incentive scheme can be worked out, which works at the production unit level. In addition to being based on physical indicators of performance (output), the incentives can factor in indicators based on the financial performance of the production unit also. All new employment in IRMC can be based on this system. Existing employees in the production units, who now migrate to IRMC, can be given the option of choosing between the existing bonus scheme and the new one. Progressively, everyone can be brought under the new system. All the perks benefits of the existing employees must be protected in the transition, even if a one-time exemption is to be sought for the same.

Table 3.4: Production Units:

Unit	Year established	Item	2013-14 production	2014-15 target
ICF, Chennai	**1952**	**Coaches**	**1,604**	**1,632**
RCF, Kapurthala	**1986**	**Coaches**	**1,550**	**1,593**
CLW, Chittaranjan	**1948**	**Electric locos**	**264**	**264**
DLW, Varanasi	**1961**	**Diesel locos**	**304**	**304**
DMW, Patiala	**1981**	**Diesel rebuilding**	**75 (rebuilding), 81 (manufacture)**	**60 (rebuilding), 81 (manufacture)**
RWF, Bangalore	**1984**	**Wheels and axles**	**188,188 (wheels), 80,750 (axles)**	**175,000 (wheels), 64,203 (axles)**

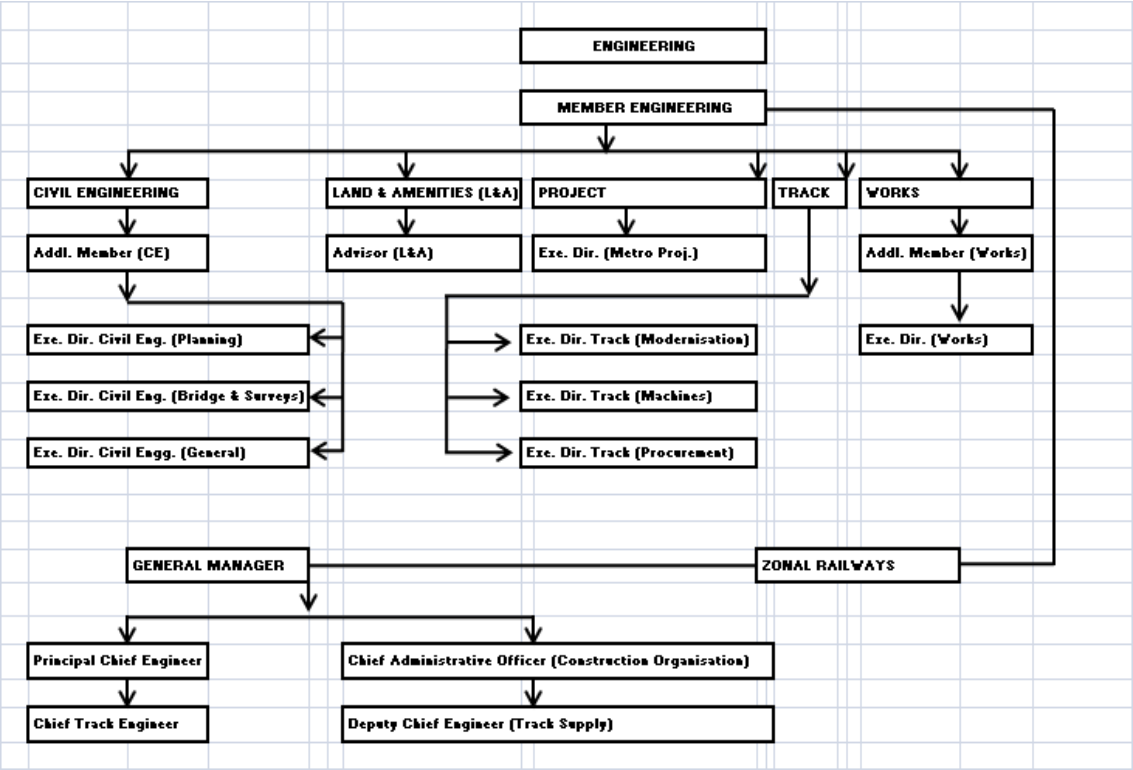
Project Execution and Construction

3.6 IR uses two types of project organizations for execution of its projects. The first type is the zonal project organizations. These zonal project organizations have a matrix structure, with the project organization chief reporting to the zonal head. The project personnel report to the project organization chief, whilst taking technical directions and resources from respective functional organizations of the zone. The second type is project organizations reporting directly to the Railway Board. These organizations handle large scale projects or projects involving work across geographical zones. Examples of such project structures are the Central Organization for Railway Electrification and the construction organization for the expansion of Railway infrastructure in difficult terrain in the North-Eastern parts of India. These organizations also have matrix structures. Their personnel are however drawn from across zones. The Civil Engineering department of IR has two distinct organizations, namely Open Line and Construction. While the Open Line is responsible for maintenance of all fixed assets of IR, i.e. tracks, bridges, buildings, roads, water supply etc., the Construction Organization is responsible for construction of new assets, such as new lines, gauge conversion, doubling and other expansion and developmental works in Railways. At the zonal level, the Open Line department is headed by the Principal Chief Engineer (PCE), who is assisted by various Chief Engineers for track, bridge, planning, track machines, general matters etc. In addition, each Zonal Railway has a construction unit headed by a Chief Administrative Officer, who is responsible for major construction works, such as new lines, doubling, gauge conversions etc., and is assisted by various Chief Engineers (construction). For civil engineering activities, Member (Engineering), Railway Board, is the apex authority and such activities are performed in five Directorates, shown in the flowchart below.

3.7 Despite the creation of such a mammoth departmental organization spread across entire IR, as in other Indian infrastructure sectors, IR's projects also suffer a lot from cost and time over runs. The major reasons for time and cost overruns of IR projects is the inadequacy of funds allotted for projects, problems of acquisition of land required for the project and security problems in the project area. Other reasons for time overrun are lack of supporting infrastructure facilities, delays in finalization of detailed engineering plans, scope changes, delays in scope finalization, unanticipated geological conditions and lack of familiarity with latest technology. Yet other reasons for cost overruns are time overruns, changes in foreign exchange rates and statutory duties, increase in cost of rehabilitation of displaced persons and providing environmental safeguards, increase in cost of land acquisition and inflation over project duration. In a 2008 study of delays in IR construction projects, the Ministry of Statistics and Programme Implementation (Infrastructure and Project Monitoring Division), identified the following seven critical factors, in descending order of importance: (i) Lack of commitment by clients, contractors and vendors, leading to accidents, improper or obsolete construction methods, delays in material delivery; (ii) Inefficient site management due to ambiguous specifications, unskilled labour, ineffective supervision, inadequate experience of contractors, lack of control over sub-contractors;(iii) Poor site coordination due to lack of coordination between site and design offices, non-availability of drawings/designs on

time, unrealistic time schedules built into the contract: (iv) Improper planning in ignoring extreme weather conditions, which lead to low labour productivity and therefore lead to errors in time estimation; improper planning for recruitment of skilled operators for specialized equipment; improper planning in the requirement of equipment and their utilization; (v) Lack of clarity of project scope, resulting in rework or scope creep due to misunderstanding by the contractor or project manager; (vi) Lack of communication with local authorities, resulting in delays in permissions; lack of communication between contractors and clients, resulting in delays in the approval of stages; and (vii) substandard contracts, selection of contractors with inadequate experience or skill sets.

3.8 In the 1990s, IR started the process of creation of wholly or partially owned public sector corporations (PSCs), initially, for the sole purpose of project execution. Typical examples are Konkan Railway Corporation (KRC), Rail Vikas Nigam Ltd. (RVNL), IRCON and DFCCIL. The creation of these PSCs was successful due to following major reasons: The governance structure of these PSCs is independent of IR. PSCs' relationships with IR are governed by a negotiated Memorandum of Understanding (MOU), according to guidelines laid down by the Department of Public Enterprises (DPE). The PSCs have operational autonomy, while being evaluated at periodic intervals on certain previously agreed performance measures by IR. The PSCs can frame their own policies regarding human resource recruitment, training, promotion and transfers. The PSC personnel are not subject to being transferred out of the PSC, before completion of their tenure with the PSC. This enables the creation and retention of experienced manpower for project management. The creation of such experienced manpower enables the PSC to take up projects in other areas; for example, KRC is executing a part of the JUSBRL project. The accounts of these PSCs are maintained independent of IR's system. This allows monitoring and control of these organizations, especially in situations where the SPVs receive funds from sources other than IR. PSCs have higher autonomy and financial powers in respect to capital expenditure, joint ventures and strategic alliances. These PSCs have the freedom to modify procurement policies in line with lending agency requirements. IR has successfully resorted to financing from external agencies in the case of very large PSC-executed projects. KRC was the first BOT project, constructed with equity participation of IR and the State Governments of Karnataka, Kerala, Goa and Maharashtra. This was followed by the Joint Venture Pipavav Railway Corporation Limited (PRCL), between IR and Gujarat Pipavav Port Limited with equal equity participation. PRCL has concessionaire rights to construct, operate and maintain the Surendranagar-Rajula-Pipavav Port project line for 33 years. RVNL uses project specific equity routes and BOT routes for project implementation. In view of the distinct advantages of project execution through PSUs over in-house execution through the construction organizations of Zonal Railways, it would be desirable to bring all the Zonal Construction organizations under the umbrella of one or more PSUs, like RVNL, IRCON etc. This would not only improve the speed, efficiency and quality of execution, but would also result in considerable downsizing of the organization. As Table 3.3 shows, the number of construction staff employed in zones is nothing short of staggering.



Integrated Station Development

3.9 Paragraph 46 of the 2015-16 Budget Speech states, "While the process for development of the already selected stations would continue, for the rest of the stations, we propose to revamp the station development policy completely and simplify processes for faster redevelopment by inviting open bids from interested parties. The present stations will be available for development on "as is where is" basis, to exploit the space and air rights on concession basis." There is a detailed manual on standards and specifications for railway stations, especially of the green-field variety.[29] Other than commercial train operations, this has parameters on utilities (water supply, electricity, drainage), passenger utilities (communications, cloak-rooms, toilets/showers, cyber-cafes, ATMs, book-stalls, food-courts/catering, waiting rooms, potable and non-potable water, escalators/lifts, emergency medical aid), cleaning, garbage collection and disposal, parking/pre-paid public transport, circulating areas, quality of station buildings, parcel-handling, security, porters, trolleys etc. IR also has a model station scheme, now transformed into the Adarsh station scheme. 1052 stations have been selected for development as Adarsh stations.[30] Since 1989, the Railway Land Development Authority (RLDA) exists, with the objective of commercial development of vacant railway land. As of 31 March 2014, 596.53 hectares of railway land have been entrusted to RLDA, with 100 sites. 40 multi-functional complexes will be developed by PSUs (IRCON, RITES, RVNL) and 123 multi-functional complexes will be developed by RLDA. The Indian Railway Stations Development Corporation (IRSDC) has also been set up in 2012, with 51% equity participation from IRCON and 49% from RLDA. For example, IRSDC is

[29] *Manual for Standards and Specifications for Railway Stations*, Ministry of Railways and Railway Board, June 2009.

[30] The complete list is available in *Outcome and Performance Budget of Railways for 2015-16*, Ministry of Railways (Railway Board), 26 February 2015. The stipulated amenities in this scheme understandably fall short of those mentioned in the *Manual* and are primarily, though not exclusively, for A1 and A stations.

engaged in station development in Chandigarh, Habibganj, Shivaji Nagar, Bijwasan and Anand Vihar. This Committee perceives the need for some rationalization between the intentions of paragraph 46 of the Budget Speech and the work of RLDA and IRSDC. In developing stations, issues are often confronted about changes in land use and municipal clearances. After the insertion of Section 11(da) in Chapter IV of the Railway Act in 2005, which is in the nature of a *non obstante* clause, IR does seem to possess over-riding powers, at least *de jure*. But *de facto*, clearances will still be required from multiple State and local body agencies. This Committee was impressed with the system that has been evolved by CR (Central Railway), where a co-ordination committee has been created, and this co-ordination committee meets on a fixed day of every week. The Committee recommends that this is a template that all other Zones/Divisions should adopt.

Table 3.3: Zone-wise and Group-wise Construction Staff

Railway	As on 31st March 2014				
	Group A	Group B	Group C	Group D	Total
Central	57	51	1318	--	1426
Eastern	105	88	1324	147	1664
East Central	70	52	1489	57	1668
East Coast	29	61	509	220	819
Northern	88	100	1405	1714	3307
North Central	36	36	1241	19	1332
North Eastern	34	45	1835	16	1930
Northeast Frontier	95	149	940	1043	2227
North Western	34	64	718	--	816
Southern	101	87	1404	8	1600
South Central	260	129	1163	58	1610
South Eastern	30	85	900	39	1054
South East Central	35	34	659	19	747
South Western	42	62	615	55	774
Western	79	81	1128	14	1302
West Central	4	4	555	--	563
Kolkata Railway	34	31	391	30	486
Total	1133	1159	17594	3439	23325

More Rationalization of Core Activities

3.10 IR has used outsourced mechanized cleaning in 111 coaching depots. There is a Clean Train Station (CTS) scheme, where parts of a train (toilets, door areas, aisles) are cleaned when a train has a scheduled stop. There is an On Board House Keeping Scheme (OBHS) in around 1000 long-distance mail/express trains. There is prescribed pest and rodent control treatment. There are mechanized laundries for washing linen, some on BOOT (Built, Own, Operate, Transfer) basis. However, despite the possibilities of out-sourcing, some cleanliness initiatives will have to be performed in-house, if nothing else, to monitor the work that is being out-sourced. Today, in the present departmental set-up, multiple agencies are involved, with a lack of co-ordination. The following quote is from CAG Report No. 6 of 2007, the 2005-06 Performance Audit Report for the Railways.[31] "A number of directorates in Railway Board are responsible for dealing with the issue of cleanliness in the Railways. The Mechanical Engineering directorates is responsible for maintenance and cleanliness of coaches in service, Engineering directorate for tracks, the Medical directorate for cleanliness of a few railway stations through Chief Health Inspectors (CHI). However, the overall cleanliness at railway stations is the responsibility of Chief Commercial Managers in zonal railway Headquarters and Divisional Railway Managers in Divisions, under the overall direction of the Commercial directorate….Multiple departments were involved in cleanliness activities leading to lack of coordination among them and rendering the cleanliness efforts ineffective. As such, accountability did not go with responsibility. …Railways neither had any mechanism to assess or control the level of expenditure on maintenance of cleanliness in stations and in trains nor a policy on waste management. Inadequate mechanism to monitor the work of contractors for outsourced cleanliness activities including pest control and bed linen washing contracts led to compromise in quality of work done. …The Clean Train Station scheme introduced for en route cleaning of trains was somewhat ineffective due to a number of deficiencies in its implementation." There is much more along similar lines.

3.11 Other than silos across Civil, Medical and Mechanical, part of the problem is piecemeal contracts issued by Zones/Divisions under different budgetary heads. This Committee's view is that there is a need to streamline the present system for cleaning (stations, tracks and trains), whether done departmentally, or through out-sourcing. Contracts should be longer term and there should be decentralization and streamlining of responsibility, so that it can be pinned down. This is especially the case with stations and tracks.

3.12 We next wish to turn to the PSUs and other organizations that are with IR. This means RITES (in existence since 1974), IRCON (1976), CRIS (1986), IRFC (1986), CONCOR (1988), KRCL (1990), RCIL (2000), IRCTC (2001), PRCL (2001), RVNL (2003), RLDA (2005), DFCCIL (2006), MRVC (1999), BWEL (1978), BSCL (1976) and BCL (1976). Out of these, BWEL was incorporated in 1978 through the take-over of two sick private wagon-making companies, Arthur Butler and Company Limited (Muzaffarpur) and Britannia Engineering Company's wagon division (Mokama). The unit for the manufacture of LPG cylinders (at Bela, Muzaffarpur) was added in 1983-84. BWEL's role is to manufacture wagons and undertake structural fabrication jobs and it has been with IR from 2008. There are 2 manufacturing units, in Mokama and in Muzaffarpur. The Committee believes that BWEL should be either revived or closed down, while BSCL and BCL should be brought under the Indian Railway Manufacturing Company (IRMC). This is especially true of BSCL (Burn Standard Company Limited), with engineering and foundry units in Howrah and

[31] http://cag.nic.in/html/reports/railways/2007_6_peraud/contents.htm

Burnpur, and BSCL, which is similar in nature. It has 2 units in Kolkata and 1 in Hooghly with a foundry unit. They have been a government company since 1976, with administrative control moving to IR in 2010. As with BSCL and BCL, BWEL (if revived) too needs to be part of IRMC. At this stage, the Committee has no comments to make about KRCL (Konkan Railway Corporation Limited), PRCL (Pipavav Railway Corporation Limited), DFCCIL (Dedicated Freight Corridor Corporation of India Limited) and MRVC (Mumbai Railway Vikas Corporation), since these are joint ventures with IR. RITES (Rail India Technical and Economic Services), IRCON (IRCON International), IRFC (Indian Railway Finance Corporation), RCIL (Railtel Corporation of India Limited), IRCTC (Indian Railway Catering and Tourism Corporation), CONCOR (Container Corporation of India) and RVNL (Rail Vikas Nigam Limited) are also companies. Their role in expanding Railway's capacity, both in infrastructure and rolling stock, has not been harnessed as it should have been, instead preference has been given to departmental executions.

Integration of IT Initiatives

3.13 First, there is a lack of co-ordination between IRCTC, CRIS (Centre for Railway Information Systems) and RCIL. CRIS was set up as a registered autonomous society in 1986 to develop IT systems for passenger ticketing, freight invoicing, freight and passenger train operations, management of train crews and management of fixed and rolling assets. Other than catering, hospitality, travel, tourism and packaged drinking water, IRCTC is in the Internet-based ticketing segment. RCIL's mandate is to offer telecom and multimedia networks through the optic fibre networks that exist along Railway tracks. Ideally, there should be synergy across these three organizations. Unfortunately, this doesn't happen. Technology adoption by IR suffers and so does the use of technology to provide better passenger amenities. How are the Freight Operations Information System (FOIS), the Passenger Reservation System (PRS) or the Integrated Coaching Management System (ICMS) used in managerial decision-making? More specifically, the silos across IRCTC, CRIS and RCIL can only be broken down if IT and ICT receive emphasis at the level of the Board. While we discuss the revamped Board later, an ex-cadre post of a Chief Technology Officer (CTO) needs to be created, reporting directly to the Chairman of the Board and all IT initiatives be integrated and brought under the umbrella of this directorate exclusive of any departmental handling in Board.

Reorganization of Railway Board and Zones –Decentralization and Empowerment

3.14 As Table 3.5 shows, IR now has 17 zones and 68 divisions. We have removed Kolkata Metro from Table 3.5 though. As we have argued in Chapter 1, this Committee believes that Kolkata Metro should be taken out of IR. Hence, Kolkata Metro is not shown in Table 3.5 and only 16 zones and 67 divisions have been shown. As was also argued in Chapter 1, it is this Committee's view that there needs to be a rationalization of the zones/divisions. There are too many Zones and Divisions. That is a separate rationalization exercise, outside this Committee's mandate. All that is being pointed out is that the present structure of Zones and Divisions has evolved because of historical reasons and is not cast in stone. One should take a rational look at restructuring the present organization into zones/divisions.

Table 3.5: IR Zones and Divisions

Name	Date Established	Headquarters	Divisions
Southern (SR)	14 April 1951	Chennai	Chennai, Tiruchirappalli, Madurai and Salem, Palakkad, Thiruvananthapuram
Central (CR)	5 November 1951	Mumbai	Mumbai CST, Bhusawal, Pune, Solapur and Nagpur
Western (WR)	5 November 1951	Mumbai	Mumbai Central, Ratlam, Ahmedabad, Rajkot, Bhavnagar and Vadodara
Eastern (ER)	14 April 1952	Kolkata	Howrah, Sealdah, Asansol and Malda
Northern (NR)	14 April 1952	Delhi	Delhi, Ambala, Firozpur, Lucknow, Moradabad and Udhampur
North Eastern (NER)	14 April 1952	Gorakhpur	Izzatnagar, Lucknow and Varanasi
South Eastern (SER)	1955	Kolkata	Adra, Chakradharpur, Kharagpur and Ranchi
Northeast Frontier (NFR)	15 January 1958	Guwahati	Alipurduar, Katihar, silchar, Rangia, Lumding and Tinsukia
South Central (SCR)	2 October 1966	Secunderabad	Vijayawada, Secunderabad, Guntakal, Guntur, Hyderabad, Parbhani and Nanded
East Central (ECR)	1 October 2002	Hajipur	Danapur, Dhanbad, Mughalsarai, Samastipur and Sonpur
North Western (NWR)	1 October 2002	Jaipur	Jaipur, Ajmer, Bikaner and Jodhpur
East Coast (ECOR)	1 April 2003	Bhubaneswar	Khurda Road, Sambalpur and Waltair
North Central (NCR)	1 April 2003	Allahabad	Allahabad, Agra and Jhansi
South East Central (SECR)	1 April 2003	Bilaspur	Bilaspur, Raipur and Nagpur
South Western (SWR)	1 April 2003	Hubli	Hubli, Bangalore and Mysore
West Central (WCR)	1 April 2003	Jabalpur	Jabalpur, Bhopal and Kota

3.15 The total employment across the zones varies widely, as the present zones are somewhat heterogeneous. Even if one excludes Kolkata Metro, the total employment in a zone varies from something a little over 30,000 (SWR) to around 150,000 (NR). It is this Committee's view that there must be decentralization down to the level of divisions, with an average employment of something between 15,000 and 25,000. The divisions must therefore be treated as independent business units. This doesn't necessarily mean that each division must earn profits or eliminate losses. Given geographical location and traffic composition, it is impossible for some divisions to accomplish this. However, with the acceptance of GAAP (generally accepted accounting principles) and commercial accounting, it should be possible to compute operating ratios and profit and loss accounts at the level of a division. The cost computations are simpler. A template will have to be devised for a division's earnings, meaning not just originating or terminating earnings, but also apportioned earnings for traffic that passes through the division. There is a double problem with the present powers of DRMs. Given the present departmental structure, officers in divisions report not only to the DRM, but also to the functional PHODs (Principal Heads of Department), who in turn report to the GM who is in charge of the zone. In any vertical structure of accountability, this isn't desirable. However, with the HR-related changes that are proposed in Chapter 5, this problem of departmentalism should disappear. Second, DRMs do not possess sufficient decentralized powers in handling tenders connected with works, stores procurement, service or even revenue-earning commercial tenders. Whether at the level of the Division or the Zone, there should be a switch towards e-tendering, with an emphasis on long-duration (say 3 years) rate contracts. In 2015, a welcome decision has been taken to delegate powers to GMs for tenders. But this has come with the rider that any delegation further down, to the level of DRMs, cannot be done without the explicit concurrence of the Railway Board. This goes against the thrust of decentralization.

3.16 The Committee therefore has the following suggestions. First, when a monetary ceiling is set on the financial powers of DRMs, it should not be set in absolute monetary terms, but should in some fashion be inflation-indexed, so that the monetary value automatically increases over time. Second, a sanctioned budget is based on earnings, as well as expenditure. If the earnings target is achieved, there should be a provision for re-appropriation across the budgetary or Plan heads. This re-appropriation power should cover within the same demand, between Railway Funds that are under the same Plan head and between Plan heads that are under the same Railway Fund. Third, some earnings by the division should be retained at the level of the Division, to be spent on specific purposes. For instance, earnings from commercial publicity can be earmarked for station up-keep, earnings from demurrage and wharfage can be earmarked for goods sheds and earnings from parcels can be earmarked for facilities at parcel loading points. Fourth, DRMs should have powers to sanction new posts that are financially neutral

(created against surrendered posts). Fifth, finance must completely be under the DRM. To the extent RPF remains in a downsized form, so must RPF. Sixth, ADRMs should be an explicit part of the administrative chain. (For example, the Annual Performance Appraisal Report (APAR) can be initiated by the ADRM, reviewed by the DRM, counter-signed by the PHOD and accepted by the GM.) Seventh, before registering a vigilance case, one should ascertain the views of the DRM. (In general, before registering a vigilance case, views should be sought from at least three higher reporting levels.)

3.17 A word needs to be said about stations and station managers (superintendents under the earlier nomenclature). Since IR works in silos, many station managers, and certainly station masters, have limited powers, other than powers over commercial operations. All A1 and A type stations should be manned by gazetted officers as station managers. This will also enable Group A services to have mandatory exposure to working at the grass-roots level in stations earlier in their careers, perhaps for 2 years. In the Junior and Senior time-scale, these posts will have to be re-designated as general posts. Supervisors and other staff who work in the stations will report to their departmental divisional officers only through the station manager.

3.18 The same principles of decentralizing to the divisions also apply to principles of decentralizing to zones. Each Zonal Railway is responsible for operation, management, and development of the Railway system under its jurisdiction. The head of the Zone (GM) must be fully empowered to take all necessary decisions without reference to Railway Board within the framework of policies. It is for this purpose that the power delegation to the General Managers was originally conceived as a negative list (i.e. only the powers in an excluded list require the General Manager to seek Railway Board's approval.) However, over the years, there powers have been constricted by additions and qualifications to this excluded list - mostly with the objective of budgetary control – thus straight jacketing the General Managers with little leeway for independent control and decision making. Further, even these powers were not linked to any inflationary indices and thus they eroded with passage of time, till a revision was again effected. The powers of each Zonal Railway must suffice and be conducive for monitoring of day-to-day operations, including maintenance of fixed assets, as well as rolling stock; development of the infrastructure such as construction/up-gradation of stations and designing and construction of platforms based on the current and projected traffic volumes; addition or removal of trains between routes; upgrading of rail infrastructure on their zones; managing finances, and; monetizing Railway land under their jurisdiction. Each Zonal Railway prepares its annual Zonal Railway revenue budget and submits it to the Railway Board. However, the Railway Board provides the annual financial budget outlay for each Zonal Railway. Within the revenue budget financial outlay, the Zonal Railways should have full powers for expenditure; re-appropriation and sanctions, subject to it meeting its proportionate earning target. This would make each Zonal Railway accountable for its

transport output and profitability. We need not say more on this, because this parallels what has already been said about the empowerment of the Divisions. There is one point that needs to be stressed though. This Committee visualizes a framework where the Zones become independent and autonomous, and to some extent, even compete against each other.

3.19 This takes one to the level of the Railway Board. To recapitulate, the Zones are empowered and made autonomous, the Railway Board having no role to play in their day to day functioning. Policy is determined by the Ministry of Railways and competition ensured by the RRAI. Though this Committee falls short of recommending corporatization of IR (several pre-conditions are necessary for that to be possible), the Railway Board becomes like a corporate board for IR. The Chairman of the Railway Board should thus be like a CEO. He/She is not first among equals and should therefore have the powers of final decision-making and veto (in the case of a divided view). With the departmentalism broken down (as explained in Chapter 5), our suggested composition of the Board would have something like: (a) Member (Traction & Rolling Stock); (b) Member (Passenger & Freight Business); (c) Member (HR & Stores); (d) Member (Finance & PPP); (e) Member (Infrastructure); and two outside and independent experts. Member (Finance & PPP)) and Member (HR & Stores) need not necessarily be from inside the IR system and lateral induction from the outside should not be ruled out. The Chairman, (a), (b) and (e) should be from inside the IR system. An individual should be appointed as Chairman or Member only if he/she possesses at least 3 years of service left. (This clause should also apply to appointment as GM.)

3.20 The present Railway Board is saddled with excess manpower. As far as this Committee can make out, there are 7 Members, 2 DGs, 1 Secretary, 16 AMs, 21 Advisers, 94 EDs, 200 Director/JDs, 250 DDs/US-s and 516 SOs. That's a strength of 1107 officers. This Committee is not convinced about the need for a separate Railway Board Secretariat Services (RBSS) or the Railway Board Clerical Services (RBCS) and recommends that these be merged with the Central Secretarial Services. In the revamped Railway Board, below the Board, the Committee recommends no more than a 3-level hierarchy (Additional Members/ Advisors, SAG officers and SG/JAG officers). The number of Director/JD and DD/US officers should be rationalized from the present 450 to at least half that number.

3.21 IR developed as a system of decentralized railways. It has become overly centralized and controlled. As the message of railway reform in other countries also shows, IR needs to become more decentralized. That is the only way for it to face up to competition. But in that movement towards decentralization and restructuring, a proper accounting system is a necessary prerequisite. We turn towards that issue in Chapter 4.

Chapter 4: Accounting Reforms

Background

4.1 IR (Indian Railways) is a part of the Government, yet by virtue of being engaged in commercial activities, it is different and unique in many ways. Given a separate Budget and a largely self-contained decision making set up, the organization has an elaborate accounting system, which is more sophisticated and informative and explanatory than accounting systems in other segments of the Government. The system lends itself to accounting for expenditure and accounting for earnings. Being a commercial and operational organization, IR has also traditionally used its accounting data for the purpose of costing of various activities and services. The costing system put in place many years ago is based on sound principles, and strives to extract useful managerial information to support decision making.

4.2 The accounting system followed by IR served the objectives for quite some time. Those were the days when external funding support to IR came almost entirely from the General Revenues of the Government in the form of Gross Budgetary Support. However, over a period of time, new challenges have emerged for IR. Funding support from the Government is no longer feasible at earlier proportions of total plan size, and certainly not adequate to satiate the enormous appetite of a large infrastructure entity such as this. Expectations of users have undergone a paradigm change; competition is perpetually threatening to drive business away, and need for efficiencies of operation have become paramount. Market share in the freight segment has dwindled from over three fourths to a little over one third over a period of about half a century. This has happened not only because the competing alternatives are more attractive for users, but also because IR is afflicted with a capacity saturation syndrome, and is not geared to carry more. Capacity augmentation has been far slower than warranted on economic and even environmental considerations. With Government funding getting thinner on account of the Government itself being hamstrung for resources, which have to also feed other competing areas in infrastructure and social sectors, IR has little option but to look for non-government sources of funds for investment. This imperative is a major driver for need based refinements in the way IR prepares and maintains accounts, and costs its businesses, activities and services.

4.3 Shortcomings in the accounting system followed by IR have become a handicap in recent years mainly because despite the relatively minute detail in which account keeping is done by IR, its accounts are kept in a form quite removed from the principles and practices in standard commercial accounting followed by companies and other business entities. Consequently, they are largely unintelligible to non-Railway persons, even to trained accountants. An outsider with an interest in investing in IR or doing business with IR would suffer from lack of clarity about IR's financial health and would get discouraged for lack of comfort on account of translucent accounts itself.

4.4 Admittedly, non-government funding in IR has been infused into IR for over 27 years now in the form of market borrowings through Indian Railway Finance Corporation (IRFC), and through sporadic PPP initiatives in recent years. Similar concerns have always existed with investors in IRFC. However, it has been possible for IRFC to create comfort amongst its investors on the basis of transparent and informative accounts of the company, a strong balance sheet, strength of the business model which centres around financing viable and revenue generating rolling stock assets, and a practice of sharing of broad operating and financial performance of IR, as evidenced broadly in the Railway Budget papers. The model gives adequate confidence to IRFC's investors, bolstering the company's ability to raise target resources at most optimum costs. With the quantum of non-Railway funding required to be infused into IR in the foreseeable future getting pitched at much higher levels to meet the growing investment needs of the Railway system, and areas of investment changing to those perceived as riskier by investors, to draw such an indirect comfort would become increasingly difficult. Such high quantum of resource mobilization would demand as a prerequisite, transparent and intelligible accounts of IR, which suggest a healthy business position of IR, for investors to derive adequate comfort.

> *Investment in IR has to be sharply focused and directed towards solution of the capacity constraint or improvement of operations. Quick pay-off projects that can ease the capacity constraint the fastest would need to be prioritized. IR needs to shift to a programme approach from the current project-oriented approach. Plan-head wise investment approach has to be dispensed with, as it distorts investment priorities and promotes departmentalism. Investment should be focused on total capacity creation, including rolling stock, asset renewal, technology induction, Information Technology and identified investments in modernization etc. This should be quantifiable in terms of incremental tonne kms. Replacement and renewal of assets should be ensured. For this purpose, the ad hoc approach followed in respect of appropriation to Depreciation Reserve Fund needs to be changed to a rule-based approach that adequately takes care of this requirement.* – **NTDPC Final Report (2012)**

4.5 A major overhaul of IR's accounting systems is also strongly suggested by the paramount need to put in place a responsive and reliable costing framework to cost its businesses, services and activities, which would underpin major managerial and strategic decisions of IR in the emerging economic milieu. As stated before, IR has traditionally had a costing system of some substance, but there has been little attention to revising or updating the underlying norms for apportionment of joint costs and other parameters. With the underlying accounting system suffering from handicaps, the resultant costing suffers from corresponding shortcomings. Before we proceed further, a brief description of the structure of Railway Accounts, as it exists today, is necessary.

Structure of Railway Accounts

4.6 IR commands a unique place in the sense that it is a commercial enterprise, but due to its status as a part of the Government of India, it needs to also conform to the accounting requirements laid down by the Comptroller and Auditor General (CAG) and Controller General of Accounts (CGA). Its accounts are thus structured not only to secure the essential requirements of commercial accounting, but also to conform to the practices and requirements of government accounting. This objective is achieved by keeping the accounts of IR on a commercial basis outside the regular government account and by maintaining a link between the two to show how much is coming into Government revenues through IR and how much is spent by the Government, whether as capital or revenue expenditure, in carrying out activities of IR.

> *The accounting system at present is organized to cater to government budget and control functions and not to shed light on the cost of various activities and services. As a result, computation of the losses on various activities and the contribution made by various services is difficult. There is virtually no support to management from the accounting side to enable the manager to achieve his/her objectives. IR's accounting system must be revamped to accurately reflect the cost of various activities and services. Only with a credible accounting system, IR can manage the commercial and social parts of the business on a rational footing. The commercial part of the business must be managed to yield a surplus for reinvestment in the system.* – **NTDPC Report (2012)**

4.7 IR lays demands for Grant, Supplementary Demands, Appropriation Accounts etc. before Parliament, like other Ministries of the Union. This they do through a separate Budget. In addition, they also present a balance sheet and profit and loss statements, unlike any other Ministry of the Union. The Accounts of IR get subsumed into the accounts book of the Union of India. To facilitate such merger, the list of major minor heads (LMMH) of Accounts of Union of India corresponds with list of heads of Indian IR at the major head level.

4.8 The books of accounts of IR are audited by the office of the CAG at various levels - divisions, workshop, Zonal Headquarters, Production Units and Railway Board, so as to ensure conformity with the guidelines and principles laid down by the CAG and CGA. Public Accounts Committee (PAC) of Parliament also examines the accounts in the same manner as it would for any other Ministry. The accounts maintained in accordance with the requirements of Government Accounts are known as the 'Finance Accounts'. The Finance Accounts of a railway are compiled annually, for the purpose of presenting in a condensed form, and various transactions are brought to account in the books of the railway duly condensed, and classified in accordance with the heads of account prescribed for Government accounting.

4.9 On the other hand, accounts of a railway presented in a form so as to facilitate review of its finances as a commercial undertaking are known as 'Capital and Revenue Accounts'.

4.10 The expenditure in IR, like any other enterprise, is classified broadly under Capital and Revenue. Expenditure with character of investment is classified under various heads such as Capital, Depreciation Reserve Fund, Development Fund etc. With a view to giving an overall picture of expenditure of capital (investment) nature incurred by IR, as distinct from expenditure actually charged to Capital (loan account), a separate account is compiled namely, the Block Account which exhibits the entire expenditure of a capital nature irrespective of the head of account to which it has actually been charged. The Loan Account will give only the extent of to which expenditure is actually charged to capital.

> *The current accounting system in IR has not conformed to generally accepted accounting principles, reporting and management practices. Major aspects include the cash-based system and the fragmented and manual systems, and without a general ledger. For commercial oriented business, the focus should be more attuned to performance, risk management, customer focus, effectiveness, governance, rewards and sanctions, cost management, value, service quality, competition and sustainable relationships.*
>
> **- ADB Railway Sector Investment Program (RRP IND 36330).**

4.11 With a view to providing insight into the nature of assets in which investment is made, expenditure of Capital nature is segregated into various other heads of expenditure, called Plan Heads. The plan heads indicate areas of Capital Expenditure relating to Railway's business, such as Track Renewals, Workshops, Rolling Stock, Electrification etc. Likewise, Revenue expenditure is further broken up into Demands, which are functional areas of operational expenditure. 'Revenue' and 'Capital' transactions are further classified as 'Commercial' and 'Strategic', according to the class of section of the Railway line to which they pertain. Revenue expenditure is also broken up gauge wise (Broad Gauge, Meter and Narrow Gauge, even though now, with large proportion gauge being Broad Gauge, this classification is becoming increasingly redundant).

4.12 As stated earlier, the books of Accounts of IR contain accounts drawn up in accordance with Governmental Accounting principles and accounts drawn up as a commercial enterprise of the Union. The linking of these accounts is done by passing them through certain accounts heads in the railway books.

Need for Accounting Reforms

4.13 Despite a comprehensive accounting architecture and presentation of the accounts to Parliament, concerns have been raised as to the complexity of accounts of IR in terms of their intelligibility (mainly because of a non-standard approach followed), and lack of stated policies of accounting and practices, as is mandatory in accounting for any other commercial enterprise the world over. Independent outsiders such as multilateral agencies have often observed that the accounts of IR are inherently complex and do not reveal the true financial state of the organization. Consequently, there is a growing

concern for its books to align with commercial enterprises, bringing out its liabilities, assets, revenues, expenditure etc. in a more lucid manner.

4.14 Assessment of current liabilities and their periodic revaluation is not currently built into the Railway Accounting structure. There is no mandate in the Government accounting principles to assess liabilities – both in projects (works) and staff related liabilities (pensionary). IR does project the liabilities through budgetary assessments and revisits the assumptions during the year, but such reviews are based on past projections and not on real growth, as would actually happen. There are certain other concerns with the accounting system of IR, which are briefly stated as under: (a) The cash based system does not provide full picture of IR's financial position at any given point of time and changes that take place in time as a result of government policy. The system lacks a mechanism to reflect IR's liabilities, such as accrued liabilities arising due to unfunded pension and superannuation benefits and current liabilities arising from disconnect between commitments and payments. (b) The current system does not track assets. Due to the large expanse of Railway assets, their enumeration and valuation is always a cause for concern. It does not provide information on the assets and the impact of current consumption on the stock of assets. (c) The present accounting system limits the ability to record true cost of providing services by IR. While an accrual based accounting system would record flow of resources, and in addition to cash flows, it would also record unpaid consumption (payables) and unrealized incomes (receivables), and would recognize when the economic value is created, transformed, transferred or extinguished, irrespective of whether or not cash is exchanged at that time, the present accounting system in IR fails to do so. As a result, aberrations occur. To take an example, revenue realized by way of advance passenger booking in trains gets accounted for in the wrong period, sometimes in the wrong year. Under a standard commercial accounting system, payments made for acquisition of physical assets, that have future service potential are amortized over the entire useful life of the assets by charging depreciation. However, the policy of depreciation in IR is largely unstated, and whatever requirement exists to compute quantum of depreciation each year based on the

> *In other words, IR accounts are not available in a format that is readily interpretable by lenders and investors. The present system of accounting does not give a true and fair financial picture. For example, the balance sheet does not show depreciation provisions and as a result it is impossible to ascertain the net block. Similarly, there is a no clear separation between revenue and capital, or between 'top of the line' and 'below the line', and the data is presented in a way in which one cannot ascertain labour productivity or employee cost. This is actually funny! Neither the government nor the Railway Board has any clue how the organization would fare if its accounts were presented as per the Indian GAAP (Generally Accepted Accounting Principles) followed by companies incorporated under the Companies Act. Would you invest in such an entity? According to the NTDPC report, "The need for Accounting Reform has been recognized and accepted in the Railway Board. An Accounting Reform project was initiated and sanctioned in 2004-05. However, the work has made a tardy progress and the final results are far off yet." Unless IR undertakes sweeping accounting reform, no one is going to risk putting money into it. FDI will remain a pipe dream.* – Sadipan Deb, *Live Mint*

Sinking Fund method and residual life of each asset, is observed more in disuse. The methodology contained in *Indian IR Finance Code Volume*-I (para 219) also suffers from the shortcoming that it envisages provisioning under the Depreciation Reserve Fund only in reference to historical cost of the asset, and not its replacement cost. Consequently, provision made for depreciation of Railway assets continues to be largely an *ad hoc* exercise, driven more by availability of money that could be appropriated to DRF, and not by the intrinsic requirement to effect provisioning according to an accepted accounting convention. Much the same practice is followed by IR for provisioning for pension liabilities.

4.15 In conclusion, the advantages of reliable cost-price calculations, recording usage of capital properly, distinguishing between current and capital expenditures, presenting a complete picture of debt and other liabilities and focusing policy attention on financial position rather than just cash flows, inherent in an efficient accounting system, are denied to IR. Consequently, leaving aside qualitative guesstimates, IR is unable to quantitatively assess impact of policy interventions on cost of various services.

Diversifying Investor Base of IR

4.16 Since 1986-87, IR has been utilizing money borrowed from the market through its financial arm, Indian Railways Finance Corporation (IRFC), its fully owned subsidiary, for creation of infrastructure, predominantly rolling stock assets. IR is precluded from borrowing from markets directly. IRFC has created infrastructure valued Rs. 1,15,313 crore (Rs. 1,12,267 crore worth of rolling stock and Rs. 3,046 crore worth of other Railway assets) till the end of 2013-14.

IR is faced with an impending financial crisis due to the GoI being cash strapped and IR itself being in need of huge investments in near future. The surplus generated by operations of IR is simply not enough to supply the requisite funds. Thus it becomes imperative to look for external sources of funds. In this context, adoption of accounting standards which are understood by all becomes important. Unless the accounting procedures of IR are transparent and intelligible to all, external investors cannot be expected to put in money.

Other benefits of switching to Indian GAAP are:Increased transparency in operations and Finances of IR.

A prerequisite for implementing financial discipline, which is very necessary for long-term viability of IR. Standardization of accounting system is not related to privatization. It is in a sense linked with the very viability of IR.

A very important lacuna in accounting in IR is inadequate handling of depreciation. The written down value of the asset is not shown.

4.17 With its infrastructure needs growing, and constraints on budgetary support from the Government not likely to ease in the foreseeable future, the compulsion of IR to attract private investment in diverse forms shall only increase. Whether it is asset creation through the PPP mode, or through FDI or any other mode, including loans from multilateral funding agencies, the investors would need to be provided appropriate levels of comfort if big ticket infusion of capital in the Railway sector has to be facilitated. Even otherwise, the huge shelf of sanctioned works valued at

about Rs. 6 lakh crore at last sanctioned cost (completion cost could be over Rs. 10 lakh crore!) would require streamlined funding modalities to complete at least the more productive and useful amongst them in a realistic and economically expedient timeframe. Such a huge quantum of funding cannot be operationalized purely on the strength of IRFC's balance sheet. The tail can certainly not wag the dog! In such a scenario, apart from bankability and viability of specific projects, investors would expect relevant information about medium to long term financial health of IR to be shared with them through accounts of the organization. Consequently, casting accounts in standard commercial accounting format and making appropriate financial disclosures will assume a greater significance for prospective investors to facilitate assessment of risk and decision on their possible investment forays into IR. Appropriate financial disclosures, and accounting statements in appropriate details to bring out strength of financial position of IR, including its long term liabilities alone, will create a model for lending by these financial institutions and multilateral agencies.

4.18 The books of accounts in its current form cannot form a strong impact due to reasons stated in above paragraphs. The financial statements of IR need to be re-drawn, consistent with principles and norms nationally and internationally accepted. At a time when companies in India are looking at timelines for realigning their accounts in line with International Financial Reporting Standards (IFRS), IR as a commercial entity cannot afford to indefinitely exist in the past.

Accounting Reforms in IR

4.19 Accounting norms and practices are being revisited world over. The evolution of public financial management systems and openness of government accounts to public and markets have led to demand for improvement of standards of accounting and practices. The emphasis on sustainability of key government programmes and initiatives, possible availability of credits from markets and accompanying risk appraisals by markets, and transparency initiatives of the government have led to an even further accentuated need for IR to bring in more exacting and responsive accounting standards. These factors have also led to a greater need for understanding the accounting structure and the need for those structures to form a common denominator for institutions and markets to understand and evaluate. Key developments in this direction insofar as IR is concerned are summarized below:

- In 2002, GASAB (Government Accounting Standards and Advisory Board) was established to lay down accounting standards for Government Bodies.

- The 12th Finance Commission of 2004 supported accrual accounting. It stated that cash based system focuses on transactions vis-à-vis the budget. It does not record and report complete financial information necessary for management of resources. The 13th Finance Commission has also stressed a bubble up approach in accrual accounting for government bodies.

- Such triggers along with international experience of countries such as New Zealand and Australia moving to full accrual accounting, and evolving

practices in world bodies such as UN, OECD and European Union have further brought into sharp focus a need for accounting reforms.

- Several Committees set up by the Ministry have also commented on substantial inadequacies of the accounting system and need for initiating reforms. More notably, Rakesh Mohan (2001) stated: *"The existing managerial, financial and accounting systems are such that these new financial requirements cannot be met in a business-as-usual scenario"*.It also added that: *"If Indian Railways have to attract funds from external sources, accounts need to be in the format that is understood by lenders and investors. The methodology used by IR to do its accounts has served it well as a government entity, so long as government earned sufficient tax revenue to provide for socially desirable service and IR operated under a monopolistic transportation market. The accounting procedures were well understood within the organization but translucent to outside world*". The Report went on to advocate the rationale and a case for undertaking Accounting Reforms on an urgent basis.

4.20 In response to inadequacies of its accounting system and its criticism, an Accounting Reforms project has been under execution in IR since 2005-06. The objective of the Accounting Reforms Project is to contribute towards improved performance of IR by supporting implementation of a programme of institutional and policy reforms to improve the commercial orientation of IR, including implementation of improvements in its accounting system. This is intended to provide financial, commercial and management information and to support expansion of core businesses by financing priority investments to overcome railway capacity bottlenecks and improve operational efficiency and safety.

4.21 IR initiated efforts towards Accounting Reforms by appointing a consortium of Consultants with a mandate to restructure the existing accounting system in such a way as to:

i. Support the existing government reporting requirements and to concurrently meet all accounting standards set in future by the Government's Accounting Standard Advisory Board (GASAB).

ii. Provide activity based revenue and cost data which would be capable of identifying and mitigating systemic, maintenance and operating inefficiencies, facilitate generation of detailed revenue and cost inputs for assessing:-

   a. Profitability of different operations;

   b. Profitability of different routes/sections;

   c. Margins for flexibility in tariff regulation.

iii. Be capable of producing financial statements of the highest quality and meeting all commercial accounting requirements internationally adopted for rail industry

and also the accounting standards laid down by GASAB (Government Accounting Standards Advisory Board).

iv. Provide the Ministry of Railways the capability to evaluate the costs and profitability of individual traffic streams between different pairs of points and in addition to develop financial statements for various lines.

v. Facilitate breakdown by main lines of business and by main services within these lines of business. It should ultimately help in organizing each business as a separate profit centre and also each segment within a business up to the level of a train as separate profit center.

vi. Facilitate a complete accounting separation of the five major areas - fixed rail infrastructure, passenger operations, freight operations, suburban operations and suburban rail system as a separate business segment, and other non-core services. Each of the non-core activities, including manufacturing units, will have accounting separation so as to facilitate development of cost and profit centers.

vii. Facilitate identification of loss making services and activities and also sound analysis of the underlying reasons to help the management in decision-making.

viii. Evolve sound basis and models for identification of joint costs and its allocation, particularly where costs of sharing infrastructure like track, OHE system, signal/telecom, stations, yards and terminals etc. are involved. A model cost sharing protocol based on internationally accepted principles /allocations followed by major efficient rail systems in the world to be evolved. It may also consider identification of certain common assets as independent profit centers viz, big passenger and freight terminals.

ix. Be able to provide specific cost information to be used for marketing purposes.

x. Facilitate a more dependable estimation of both fully allocated costs and marginal costs.

xi. To evolve a workable methodology for arriving at the operating and maintenance costs of the Mumbai suburban railway system, which will involve separation of Mumbai suburban railway accounts from the accounts of Western Railway and Central Railway.

4.22 The intention was that new design architecture should facilitate complete accounting separation through introduction of LOBs and LOSs within IR, and lead to a more independent and focused approach. At the same time, it would create competition for assets and services, thereby eliminating systemic and operational inefficiencies. The new architecture would enable preparation of profitability statements for each identified LOB and LOS to support critical management and strategic decisions. An activity based costing model was also expected to be one of the key deliverables. It was also envisaged that after the initial report was submitted and accepted, and a reasonable consensus created, norms and parameters for apportionment of overheads in various activities would be worked out based on activity based surveys.

4.23 The Consultants submitted their First Report in May 2007, which was not acceptable to the Ministry. More work ensued and a Final Report was submitted in July 2010, after further deliberations. This Committee is of the view that the Consultants have produced a reasonably valuable set of recommendations, and their Report can effectively form the core of further action by IR to bring about Accounting Reforms. About the existing system, the Consultants observed that *"The existing accounting system structured on activity based demands, minor heads, sub-heads and detailed heads is adequate for bringing into account the expenditure of the Indian Railways as per the extensively detailed accounting classifications. The existing accounting system at times falls short of the requirements in providing necessary inputs for business segments based on costing of rail services with capabilities for identifying systemic, maintenance and operational inefficiencies"*. The Consultants recommended reorganization of IR's business into lines of business (LOB) and lines of services (LOS). It was also envisaged that IR will reorganize its management structure around these LOBs and LOSs. The accounting architecture has been reworked to align it with commercial principles along with generation of cost statements. The concept of cost sharing between LOBs has been envisioned, along with service level agreements (SLA) between LOBs. The concept of activity based costing has also been brought in. It has also been laid out that accounting reforms in IR have to be IT driven and various other subsystems have to be in place for a comprehensive accounting solution.

4.24 This Committee finds that follow up action on the recommendations of the Consultants lacked the sense of urgency which was required for such an important exercise. No cogent reasons were forthcoming for almost no action being taken, either to implement or modify or reject the recommendations of the Consultants for over four years. We recommend that this matter should be accorded topmost priority by IR as the establishment of an efficient and responsive accounting and costing system is the first stepping stone towards a vibrant and commercially viable Railway system.

4.25 This Committee was informed that IR has now appointed Accounting Research Foundation (ARF) of Institution of Chartered Accountants of India (ICAI) to deliberate and suggest steps towards accrual accounting and to validate assumptions made in the Accounting Reforms report of the Consultants.

4.26 Given the vast expanse of IR, spanning the length and breadth of the country, with a complex functional structure in the small field units, workshops, divisions, training institutions, production units, and zonal segments of IR, which is cadre based with strong departmental allegiances (changes suggested by this Committee in this behalf will inevitably take a while to show effect), this would require sustained cross functional interfaces to create an ownership of accounting reforms. Accounting reforms are also an exercise in change management, not only in the way processes and mechanisms are looked at, but also in questioning deeply ingrained organizational values. The effort also has to be approached with focus, since it involves shifting the accountability mantle from a large spread out body to certain focused groups. This Committee is conscious of the fact that implementation of these kinds of systemic changes would require time and sustained efforts. We also recognize that due to numerous interfaces of the accounting

reform project with various stakeholders, consensus would be hard to come by. Therefore, concerted efforts will be required, piloted and constructively guided at a very high level, to operationalize transition to an efficient and responsive accounting system in a realistic timeframe.

Recommendations for Implementation of Accounting Reforms

4.27 For accounting reforms to be successfully implemented, it is necessary that a clear roadmap be laid out, with timelines for constituent activities. It is also necessary to create ownership of the project with the top management. The project also requires a team across zonal IR, which needs to be monitored and guided from the apex level. A dedicated Project Office at the Ministry level could also be considered. This Committee further recommends that the monitoring agency, whichever form it takes, must be supported by domain experts from outside the Railway system, as adequate competencies to guide the Project may not exist within IR. The project would also require sustained funding commitment, as the project would span a few years' time.

4.28 This Committee recognizes that completion of accounting reforms in IR is an essential prerequisite for the organization gearing up and moving towards a professional and commercial approach to its business. Having regard to the fact that time is of essence in this matter, we recommend that implementation of the project be broken down into smaller stand-alone elements, with critical mass to deliver value on completion. For instance, till such time as norms for apportionment of overheads are finalized through activity based surveys, IR could rely on the existing norms, subject to some need based adjustments which could be incorporated, centered on management's perception. IR cannot afford to wait indefinitely for the whole project to be complete pan-India, before it begins to reap benefits.

4.29 This Committee was informed that in IR's view, it would be desirable to firm up a template for one division, one workshop, one zonal Railway/production unit, and test and prove it before the scheme is rolled out across IR. We concur with such an approach. It would also be advisable that assumptions made in the consultant's report are tested in one workshop and one division, followed by one zonal headquarters. The outcome of such testing needs to be debated across managers controlling various lines of business and lines of services before the model is extended to other units of IR. It would also be useful to take into consideration the accounting standards (Indian Government Accounting Standards – IGAS) and Indian Government Financial Reporting Standards (IGFRS) as prescribed by Government Accounting Standards Advisory Board (GASAB).

4.30 A concurrent exercise that needs to be undertaken is to have a relook at the existing accounting architecture in the form of chart of accounts, which has not been visited after the revised allocations came into being in the first instance in 1979. The business landscape of IR has changed considerably and the allocations do need review in many instances. It may now be desirable to realign them with the LOBs and LOSs. Since the accounting reforms consultants have based their recommendations on the existing chart of allocations, it would be prudent to revisit the same so that inconsistencies, if any, are addressed. As in the case of implementation of the core project, we recommend that IR

might consider forming a Group to revisit the chart of accounts. While doing so, they should seek national and international practices and might obtain professional help, if necessary.

4.31 Assets of IR are spread across the country, are very large in numbers, and the date and cost of acquisition are not always available readily. Bringing all assets to the book would be a substantial exercise, not only in terms of enumeration, but also their valuation. It would be necessary that this exercise is planned meticulously and executed in earnest. The policy for asset enumeration and the form in which it shall be maintained across the organization in various asset classes needs to be clearly laid out. A realistic and pragmatic approach in cases where details of the creation of assets are not available in required details (and such cases could be many in an organization which is over 160 years old), would need to be laid down in advance to simplify and expedite the process. In their quest for the perfect, IR must not spurn the very good. These activities need to be taken up on urgent basis in consultation with domain experts outside IR, as necessary. The whole exercise must conform to the generally accepted accounting principles.

4.32 In the overall structure of the organization and its businesses that we have recommended, costing of services, activities, LOBs, LOSs etc. for appropriate management decisions would be critical. The costing aspect needs special attention, given the fact that in the complex organizational matrix of IR, a majority of activities are characterized by joint costs. The movement away from an approach centered on fully distributed cost to a concept of direct costs, indirect costs and marginal costs needs to be carefully steered. Necessary mechanisms and protocols have to be established for concept of 'user pays', be it for the service or products of IR or internal customers of the organization. It is along these lines that the LOB and LOS needs to be designed.

4.33 As also stated in the Final Report of the Consultants, for a reasonable chance of success, it would be necessary that a robust, secure, modern, efficient and effective information technology (IT) infrastructure in put in place. We recommend that adequate fund provisioning be ensured.

TERM	DESCRIPTION	LINEARITY
SHORT TERM **6-9 MONTHS**	• Rationalization and sanitization of Chart of allocations to restore linearity and consistency in classification of heads for accounting transactions and facilitate compilation of accounts in Line of Business (LOB) and Lines of Service (LOS). • Revision of Financial Accounting reporting presentation. • Statement of significant accounting policies. • Adoption of IGAS. • Validating Accounting Reforms Report and initiating measures for a testing of the report in a field unit. • Initiating measures for enumeration of Assets of IR.	All these activities can be parallel to each other, as the outcome of one is not connected to the other.

	• Creation of Accounting Reforms information board for IR to view the developments and contribute. This needs to be an IT based solution capable of seeking views on documents and issues. • Initiation of requirement for move towards accrual accounting. • Initiation of liability assessment and projection for IR.	
MEDIUM TERM **12-24 MONTHS**	• Seeking results of the validations of accounting reforms report and internal deliberation among stakeholders for a comprehensive view. • Decision on format of Assets enumeration in the form of Asset's register for IR. • Initiation of laying down a depreciation policy for IR for various classes of assets. • Finalization of Lease accounting and project accounting standards. • Drawing up of sample assets' registers of a field unit of a division and Headquarters of a zonal railway. Initiation of an online Asset Management system, so that field units could log in their assets with necessary details. • Finalization of liability assessment and projection for IR. • Finalization of Chart of allocations. • Issuance of guidance notes for correct accounting treatments as per accounting standards. • Initiation of costing methodology for costing of activities and services. • Finalization of revenue sharing methodologies between LOBs. • Finalization of track access charge methodology. • Selection of appropriate accounting, IT, network, security agencies for converting the details of accounting reforms principles and details for converting to software specifications, IT infrastructure needs. • Training of teams in best practices, accounting statements under accounting reforms. It is necessary that a core group train key resources, which in turn become railway wide resources. • Development of financial and mathematical models for capital budgeting, appraisals of infrastructure projects, cost benefit analysis, environmental impact, sensitivity analysis etc. This will enable to bring best industry practices into the main stream. • Development of product/services costing models for pricing products/services and setting up of tariffs.	The first three activities are linear and the remaining are parallel.
LONG TERM **24-48 MONTHS**	• Finalization of asset's register for IR. • Generation of a balance sheet and profit and loss account of a zonal IR along with those of various LOBs, indicating profitability or otherwise of zonal IR and LOBs. • Presentation of Indian IR balance sheet and P&L statement as per Commercial principles. • An extended handholding arrangement with accounting, IT, network, security agencies for maintenance and up-gradation of the systems. • Establishing key performance parameters and indicators.	

Timelines and Break Up of Activity

4.34 We have emphasized earlier that in many ways, completing implementation of the accounting and costing reforms in IR would be central to many changes envisaged in other recommendations that we have made elsewhere in this Report. We therefore feel that a timeline spanning 24-48 months for long term milestones would seriously compromise on the potential of IR to launch itself on a new growth trajectory. Our attention is attracted to the Project Timelines indicated in the Consultant's Final Report, where a time period of about 18 months for "the Implementation Phase" has been suggested. This Committee does acknowledge that as against 12 months envisaged for the design phase, the actual time taken was much longer. Yet, we are not persuaded to accept the timelines of 24-48 months suggested to us in interactions with Railway officials. We believe that given the capabilities that exist in the operations driven organization that IR is, it should be possible to have the Project go on stream in a phased manner in a much shorter time frame, with an outer limit of about two years. We reiterate our recommendation made earlier that implementation of the accounting reforms project be broken down into smaller stand-alone elements, with critical mass to deliver value on completion. IR cannot afford to wait indefinitely for the whole project to be complete pan-India, before it starts to reap benefits.

Chapter 5: Human Management in IR

The Nature of the Problem

5.1 IR is a complex, multi-departmental, and operational organization spread across the country, with approximately 1.3 million employees. There are about 400 different categories of Group 'C' employees and 10 Group 'A' services, of which 8 are organized Group 'A' services. It has a matrix organization structure with its operational field units organized in three layers (zones, divisions and other operational units). Being a Government department, IR has a very high level of formalization and centralization of power. Various activities and jobs in IR are specialized, and currently organized into departments along functional lines. These departments do not possess the customer/business orientation that is normally associated with a commercial organization.

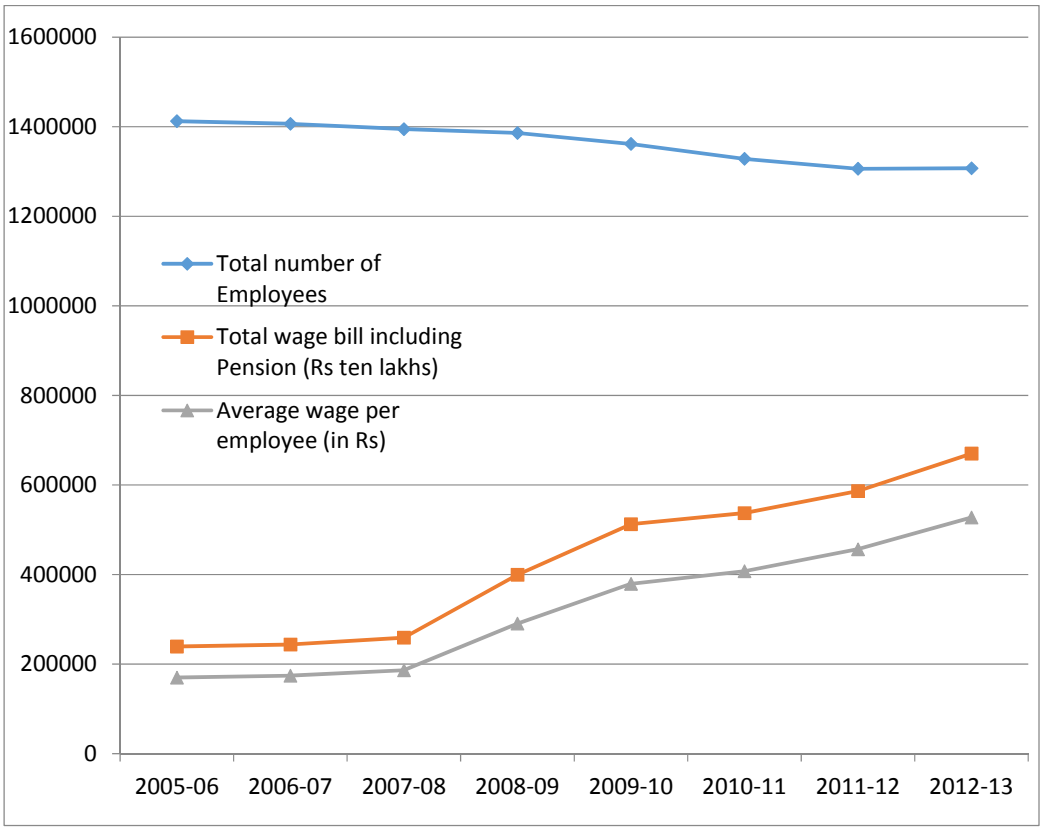
5.2 Over the years, issues relating to organization structure, organization culture and human resources of IR have been extensively analyzed by many expert committees which have pointed out a number of shortcomings and also made diverse and well thought out recommendations. Some of the key problem areas highlighted by most of the expert committees include excessive 'departmental' feelings that currently exist, over centralization of powers, excessive formalization, and also the manner in which the functions (departments) are organized and manned. This Committee has benefited from the voluminous material available in this regard. It also interacted with a wide spectrum of stakeholders and domain experts to seek guidance for its recommendations.

5.3 Following extensive discussions and examination of information collected, this Committee is of the view that the following key HR/organization structure issues that exist today in IR need to be addressed on a priority basis.

5.4 Expenditure on staff is unmanageably high and growing at an alarming rate:The total expenditure of IR (including total working expenses and miscellaneous revenue expenses) for 2013-14 was Rs. 1,31,465 crores, while the total receipts were at Rs 1,43,214 crores. Staff costs constituted 48% of Ordinary Working Expenses and 34% of Gross Traffic Receipts. Pension outgo and Staff Costs put together were 51.3% of Gross Traffic Receipts. The staff costs have increased from 2005-06 to 2014-15 (BE) at a CAGR (compound annual growth rate) of 13%, and staff costs plus pensions at 13.7%.

5.5 This Committee observes that the employee costs (including pensions) constitute the single largest cost component in IR, and are the main drivers that push the Operating Ratio up. These costs have already reached unsustainable levels. With the implementation of the imminent recommendations of the 7th Central Pay Commission looming, presumably with retrospective effect from 1st January 2016, there is bound to be a further upward quantum jump in staff costs and pension costs. This has the potential to seriously destabilize IR finances. The Committee makes this statement because unlike at

the time of the 6th Central Pay Commission, when IR possessed healthy Fund Balances (which constitute Reserves) of almost Rs 20,000 crores, the organization does not have any reserves at present to meet the large financial impact. Accordingly, urgent steps need to be taken to right size IR by rationalizing manpower. Since there is very little that IR can do to mitigate the increasing burden of pension outgo, it is imperative that immediate corrective steps are taken to rationalize expenditure on salaries and wages of existing employees.



5.6 Departmentalism: IR, because of its complexity, sheer size, technical nature of operations and need for functional specialization, has been traditionally organized along functional lines. The term "departmentalism", as being used here, refers to the negative aspects of functional specialization in IR. This manifests itself in the form of unhealthy competition amongst departments for appropriating a larger share of scarce resources; injurious competition for usurping a larger share of key general management posts for better access to power, authority etc.; a clamour for pursuing narrow departmental goals at the cost of organizational goals and objectives; and lack of team work and cohesion. This aspect has been deliberated in depth by most of the expert committees set up in the past to suggest reforms in IR. The most recent NTDPC[32] - Railways report also states that: "*…the result is an over-differentiated organisation which prevents a coherent world view on the basic role and purpose of the organisation….*"[33] and "While in theory, such a

[32] *National Transport Development Policy Committee.*
[33] *Para 4.8 page 39-40 of NTDPC report on Railways.*

structure would promote functional specialisation, each department being manned by separate cadre has led to a lack of unity and strategic coherence…….A great deal of organisational energy is expended in inter-departmental competition for resources and a zero-sum game of one up-manship and departmental aggrandizement…."[34] . In addition, this issue has also been dealt at length in many other expert committee reports, from time to time, some of which are summarized in Figure 5.1 below.

Figure 5.1 – Observations of Expert Committees on 'Departmentalism'

"The deep roots of "Departmentalism" in IR, that is, excessive departmental consciousness, beyond what would be legitimately be in order in a multi-disciplinary organization, ***lie not so much in the existence of different specialized functional services and disciplines as in ….. Inadequate implementation from time to time of existing norms & policies; …Lack of transparency ; ….Continued existence of serious inequalities in inter-service norms & policies themselves and …Short tenures at decision-making levels leading to initiatives in improvements not getting the adequate follow-up action."***

- Gupta Narain Committee report

*"the current structure encourages excessive departmentalism at the management level and often leads to priorities being set not for the organisation as a whole, but on departmental considerations"****(page 62 - Human Resources Management, NTDPC-Railways report)***

"Rail Transport has two characteristics: a severely guided mode, and with controlled access. This in turn makes multidisciplinary inputs a must for its output…… This is the root cause of the 'departmentalism' in the IR at the management level." ***(Page 63, NTDPC, Railways report)***

5.7 Various causes of 'departmentalism' – multiplicity in number of organized Group 'A' services: Deliberations with different stakeholders indicate that amongst various causes, existence of the silo structure of the multifarious Group 'A' services is a major contributor to perpetuation of this tendency to nurture the tribe even at the cost of the organization. This is nurtured even at the top management level, as they also compete for resources. The entire gamut of operations-policy-regulatory functions being vested in a single body, viz. Railway Board, makes it all pervading. Further, it is also a fact that 'Departmentalism' gets further accentuated when top management behaviour is not perceived to be completely fair and unbiased, as appears to be the perception in IR. This Committee notes that the observable manifestations of departmentalism in IR include (a) lack of transparent and fair policies, especially in regard to manning of plum general

[34] *Para 14.3.4 page 153 of NTDPC report on Railways.*

management positions; (b) competition amongst departments in allocation of resources and investment decisions; and (c) sub-optimal decision making. Such instances and behaviour reinforce the 'Departmental' feelings and strengthen the vicious cycle.

5.8 The existing Railway organizational structure is not customer-oriented, but rather inward looking: Departmentalization represents the manner in which the activities or jobs in an organization are specialized into groups or departments. Any organizational structure is really a grouping and linking of activities within an organization. It is really about how individuals, jobs, functions or activities are differentiated and aggregated in a manner which optimizes information flow within the group (but typically creates barriers with other groups). The mechanisms of integration used to coordinate and share information across groups must enable the organizational leadership to provide guidance and direction across the organization. The departmental model is favoured to develop depth of skills in a particular function or department (most jobs are functional in nature) and promote functional/departmental innovation, economies of scale and lower costs. However, on the flip side, departments can work at counter-purposes if they have different priorities and measures, which focus on departmental, rather than overall organizational objectives or benefits. Under these circumstances, individuals are unclear on their roles and cross-functional decisions get pushed up for resolution and often result in stalemates.

5.9 IR follows a matrix organization structure (which is a combination of the departmental and the geographical model), yet there is a greater emphasis on departmental functional forms, as the geographical layers in the IR matrix structure also focus on the departmental outputs of the operational units (zone/division) rather than any specific product/service. This Committee notes that a number of its predecessor expert committees have emphasized on the need for structuring IR in a manner so as to create an outward looking, business oriented, and customer driven institution. This Committee also notes that various committees earlier, including the Expert Committee on Railways 2012, as well as the NTDPC – Railways Report, have also advocated change to focus on business/customer units like freight business, passenger business, suburban business, parcel business etc. This Committee fully endorses this view as an essential ingredient for IR to be competitive, for its long term-economic viability, customer satisfaction and for being an adaptive/flexible organization. "....this will involve reorganizing the core transportation network into its key component parts: freight, passenger, sub-urban, shared infrastructure, fixed and rolling infrastructure etc. These business units will operate with a large degree of autonomy yet be accountable...."[35]

[35] Page 72*, Expert Group on IR – 2001*.

5.10 High level of bureaucracy and slow decision making: IR, being a Government department, is highly formalized in its policies, procedures, job descriptions, and rules being written and explicitly articulated, thereby leaving little leeway for an employee to exercise his/her discretion on each case based on its merit. Furthermore, the organization, being structured like a traditional Government department, also has a very large number of vertical and lateral levels in its hierarchy, thereby slowing down the decision making process. An advantage of a highly formalized organization is that it makes organizational responses more consistent and predictable and reduces ambiguity and arbitrariness. It is an established fact that excessive formalization leads to slower pace of decision making and is also not conducive for innovations and strategic business decision making. This Committee is of the view that the service industry is particularly susceptible to problems associated with high levels of formalization. As such, if IR is to operate successfully as a commercial organization with high levels of customer satisfaction, efforts to dilute formalization by way of reducing the hierarchical decision making levels, coupled with simplification of rules and policies, with greater autonomy and empowerment to the field level organization, will need to be undertaken.

5.11 Over-centralization of power: In decentralized organizations, decisions are taken and problems are solved by empowered field level employees who are closer to ground realities and the customer. A decentralized organization provides more authority to front line employees, which result in quicker decisions enabled through empowerment. Lack of adequate delegations to Zonal Railways and other field units is the major factor contributing to inordinate delays in decision making and the consequent inefficiencies being bred. As greater delegation ensures flexibility and faster response, it needs to be encouraged, commensurate to the accountability. There is a strong case for delegation of powers to the zones/field units, particularly in areas related to day to day operations, safety, passenger amenities, traffic facility, various works and capital investment programs to be undertaken; within their allocated budgets. This is what this Report flagged in Chapter 3. The only caveat is that there be commensurate accountability at those levels, which exercise such enhanced delegation. Most of the expert committees set up by IR have unanimously recommended decentralization and delegation of powers to zones and divisions. Recently, the High Level Safety Review Committee, 2012 (Kakodkar committee) had also recommended specific powers to be delegated to GMs and DRMs. As such, GMs of Zonal Railways/Production Units should be empowered to take decisions, within a framework of rules and investment limits and the Zonal Railways should also be made accountable for returns on investment, output, profitability, safety and customer satisfaction. This Committee notes that significant commendable steps have been taken recently by the Ministry of Railways towards decentralization of powers of decision

making. This Committee feels that this is a welcome development and performance must be watched for corrections, if required.

5.12 Strengthening of HRM in IR**:** Effective and efficient management of any organization essentially requires optimum utilization of various resources – its financial resources, information resources, physical resources, and human resources. The proper utilization of all these resources depends largely on the human resources available in the organization. In the present scenario, managing human capital, knowledge management and capacity to innovate have become the basis of sustainable competitive advantage for organizations. Increased competition and globalization require organizations to be more adaptable, resilient, and agile and customer focused, in order to succeed. Therefore, the success or failure of an organization depends predominantly on the competence of its people and the ability of the organization to effectively manage and leverage its human resources. In this context, HRM today has become a critical function for the success of any organization.

5.13 Focus on non-core areas: The Ministry of Railways undertakes a wide gamut of diverse activities that are not at the core of the prime business of rail transportation. These include running hospitals and schools, catering, real estate development, including housing, construction and maintenance of infrastructure, manufacturing locomotives, coaches, wagons and their parts, etc. To this list must be added the Railway Protection Force and Railway Protection Special Force, which carry out functions which should normally be performed by State Police forces, or conveniently outsourced. To maintain and run these diverse sets of peripheral activities, IR has created a monolith organizational structure. There is a strong case for revisiting these activities. This issue has been dealt with in greater detail in other Chapters of this Report, especially Chapter 3.

5.14 Though the RPF has been mentioned in Chapter 3, we want to stress it again in this Chapter. We feel that the outsourcing model may not be a complete solution. This is because assets of IR, which RPF protects, are numerically huge, and dispersed across the length and breadth of the country. To fix responsibility for losses when the watch and ward function is assigned to a third party, bound through contracts, may become rather difficult, as the requirement of sharing inventory of property under the charge of the agency will be difficult to fulfil in an organization where stores move in and out of depots all the time. In such a scenario, the mere act of proving a theft or pilferage, and recording FIR with the local police would become a difficult task. Therefore, RPF needs to be continued on a model like CISF, to look after assets of IR. There is no contradiction, since the core point is that IR will possess the flexibility and freedom to choose whether RPF will be used for a

specific purpose or not. RPF becomes distanced from IR, but is not closed down. RPF comes under the administrative jurisdiction of Home Ministry, which will pay its salaries and IR will pay for the specific security task. As regards GRP, they undoubtedly perform a function which lies squarely within the domain of the State police, and therefore there is a strong case of discontinuing GRP, and assigning the functions discharged by them to the State police. However, this is a decision for the State governments to take. For our purposes, IR should begin a process of negotiations with State governments, so that the 50% contribution by IR to the GRP is phased out over a mutually agreed period of time.

Recommendations of this Committee

5.15 Objectives: This Committee is of the view that there are five distinct yet closely inter-related objectives that need to be considered while undertaking organizational restructuring of IR (including the apex structure of IR) **(a)** making the organization more business/customer oriented, flexible/agile and amenable to private participation (operationalizing business strategies); **(b)** retaining desired optimal level of functional specialization in IR; **(c)** resolving excessive "departmentalism" within the organization; **(d)** critically examining the requirement of eight organized Group 'A' services along functional lines; and **(e)** developing new competencies and skills in key functions (departments) that will have important roles to support the revised business strategy of the organization (strengthening, enrichment and reorientation of key functions (Marketing, Finance etc). The recommendations of this Committee are made keeping in mind these broad five end objectives. Based on the key HR issues currently confronting IR and guided by the broad objectives outlined above, the recommendations of this Committee on the various issues are as follows.

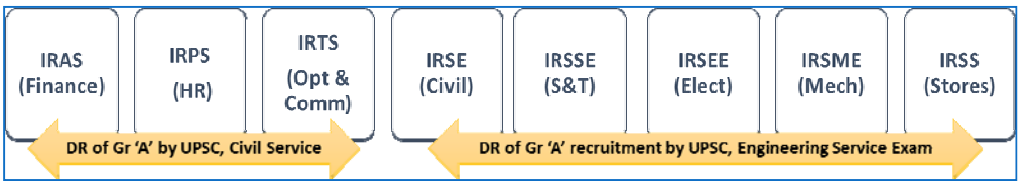
5.16 Tackling the problem of departmentalism: As already indicated earlier, the problem of 'departmentalism' in IR is on account of multiple issues that include organization culture issues, existence of a large number of organized Group 'A' services, lack of transparency and fairness in key policies, including for manning of senior general management posts by officers of various services, competition amongst various departments for allocation of scare resources, inequalities of in-service norms and conditions between different services etc. While changing the organization culture is a long drawn out process, this Committee is overwhelmingly of the view that implementation of its recommendations with respect to the separation of the Ministry of Railways and the Railway Board, along with its other recommendations for reducing the number of services, creation of a General Management Service, reorientation of departments, allowing lateral movement of officers between other Group 'A' Central services and the Railway services, strengthening of HR management (as detailed subsequently in this Chapter), will together

help not only in the resolution of this problem, but also result in a much healthier organization culture in IR. The details with respect to each of these recommendations are outlined in subsequent paragraphs of this Chapter.

5.17 Issue of multiple services: In order to make recommendations for resolving the various problems associated with the existence of a multitude of organized Group 'A' services, which also contributes significantly to the existing problem of 'departmentalism' in IR, this Committee interacted with various stakeholders, examined the suggestions of various expert committees set up in the past and considered various options available. This Committee notes that the Federation of Railway Officers Association (FROA), the body representing the officers of the various organized Group 'A' services, has strongly supported the idea of a reduction in the number of organized Group 'A' services in IR and has suggested amalgamation of all existing services into a single Unified Railways Service (Indian Railway Service). The observations and recommendations of this Committee in this regard are outlined later.

5.18 The existing position: At present there are eight organized Group 'A' services in IR (Figure 5.2). Deployment to these services is by direct recruitment from UPSC (Civil Service and the Engineering examinations) and also by promotion of Group 'B' officers of the department. There is also a small but significant element of recruitment of Mechanical Engineers through the Special Class Railway Apprentices examination, followed by training. The eight services can be broadly categorized in two bigger groupings viz. technical and non-technical services.

Figure 5.2 – Eight Group 'A' Services in Railways



5.19 The recommendations of various expert committees on a reduction in the number of Group 'A' services in the Railways: In the past, a number of expert committees have dwelt upon the issue of large number of Group 'A' services in the Railways. This Committee examined, deliberated at length the views and recommendations of these committees and has taken these into cognizance while making its recommendations. While some of the observations and recommendations of these committees have already been mentioned in preceding paragraphs and are also listed out in Annexure 1, the other

important/key recommendations made by these committees on this issue are briefly as follows.

5.20 Prakash Tandon Committee: The Prakash Tandon Committee in 1992 recommended creation of a unified Indian Railway Service and envisaged that those recruited, each with certain specified educational qualifications, would belong to a single service with duties assigned in different departments according to needs. It also recommended merger of the officers of the existing eight organized services (excluding RPF and Medical services) to form a common cadre with a common seniority. In order to implement these recommendations, the Gupta-Narain committee was constituted to suggest a methodology for unification of the eight organized services and to examine all related issues.

5.21 Gupta-Narain Committee: The Gupta-Narain Committee noted that departmentalism is not only due to a large number of services, but is also due to opaque, inequitable and inconsistent policies, lack of transparency in personnel management and inequality amongst equals. The Committee, however recommended that the unified recruitment to the eight Group A services on the IR would not be possible on account of the inability of UPSC to give a "predetermined discipline-wise mix in keeping with the educational backgrounds of each of the 8 Railway disciplines, when recruited only through the Civil Service Examination". Further, the Committee observed that even if this were possible, it would only solve the problem of initial deployment to the Junior Scale posts. There would be a problem in deployment from the Senior Scale onwards, which would also result in erosion of specialized functional streams at the Grade 'A' level and lead to disastrous consequences on the efficient functioning of the organization and on its safety. It however observed that the system of preparing a common combined inter-services ranking list linked with the results of the existing examinations was not only feasible, but also would achieve the same results desired from the proposed common examination scheme, without having any of the negative consequences. It further suggested that the Indian Railway Service of Mechanical Engineers should be merged with the Indian Railway Service of Electrical Engineers to create a single service, as this would lead to better integration, avoidance of unnecessary duplication and better functional efficiency. Further, all transportation and commercial posts at the Divisional level, except at the Jr. Scale level, should be merged into combined traffic posts in the interests of closer integration between the two streams.

5.22 Justice H.R.Khanna report**:** The Justice H. R. Khanna report (1998), while expressing grave concerns about adverse effect of 'Departmentalism', amongst other things also recommended that the possibility of amalgamation of departments on functional basis and the formation of a single management cadre should be explored.

5.23 Indian Railway Vision 2020: The Railway Vision 2020 document also recognizes the fact that a balance needs to be achieved between the forces of differentiation (functional specialization) and integration. It accepted the fact that the existing Railway structure would prove increasingly rigid and incapable of analyzing and responding to the challenges posed by rising competition from the road and aviation sectors. It recommended that one possible approach could be to reconfigure the organization by separating the infrastructure from operations and reorganization on business lines i.e. passenger, freight and parcel and other auxiliary services, so that each service could be managed and measured on a profit-center basis. Areas, other than core operations, where appropriate, could be corporatized to impart business focus and managerial autonomy for such tasks.

5.24 NTDPC–Railways report: The most recent NTDPC-Railways Report also emphasizes on the need to significantly rationalize the existing multiple services and cadres of the Railways. It recommended that the services should be merged into two cadres. The NTDPC–Railways Report (Annex 1.4 of the Report) suggested that Civil Engineering & S&T services, Mechanical & Electrical services be merged, with the role of Personnel and Stores service being carried out by the executive accountable for the output. As an alternative, it also suggested an incremental view of reducing the revised structure to seven services (given in Annex 1.4.). The two cadre approach proposes that **(a)** the recruitment to the Railway cadres of officers should be totally dissociated from the Civil Services and Central Engineering Services exam. **(b)** Railway engineering degree will encompass, inter-alia, all aspects of engineering-civil, mechanical, electrical, signaling and telecom, etc. so that the officers have a holistic approach to the railway related issues. **(c)** Logistics course will prepare the candidates for Railway operations, including finance and human resource development. It could be in the form of an MBA or an MA. **(d)** A superior managerial cadre of leaders can be created at the time of granting Selection Grade i.e. in the 14th year of service. These officers can be selected by a process of assessment at the UPSC. The leaders so selected will man the posts of Additional Divisional Railway Managers, Divisional Railway Managers, Chief Vigilance Officers, General Managers, etc. **(e)** Lateral recruitment from the market for jobs in R & D.

5.25 Need for retaining desired level of functional specialization: One of the important arguments for justifying continuation of the existing large number (eight) of organized Group ‘A’ services in IR is that this arrangement helps in meeting the requirement of functional specialization. This Committee appreciates the fact that IR being a complex, technical department, it needs to have a degree of specialization and domain expertise. At

present, most of the officers work and remain in their specialized departments throughout their careers. Inter-departmental postings are not the norm and the number of "General" management posts is not large. However, it is also an accepted fact that although these officers remain in their departments, normally the nature of their work becomes more general management oriented and less technical as they move up the hierarchy ladder. This is true of most of the technical/specialized functions in other organizations also. This is depicted in Figure 5.3 below

The above fact, coupled with an analysis of the existing nature of duties performed by Railway employees in Groups 'C', 'B' and 'A', and a logical grouping of employees in the departmental hierarchy based on their nature of jobs would suggest that at a macro level, an approach as depicted in Figure 5.4 could be one option. This would entail more or less maintaining the status quo for specialized /functional cadres at Group 'C' (level 3), and a semi-merged cadre for middle/junior management (level 2). Semi-merged structure would involve a 'common merged cadre/service' for Group 'A' officers, and functional /specialized cadre for the Group 'B' officers within this grouping. At the senior Group 'A' levels, there would be a 'common merged cadre/service' (level 1).

5.26 Here it needs to be emphasized that the term 'Common merged cadre/service' as referred to above does not mean that officers of all organized Group 'A' services shall be merged into a single cadre/service structure. Rather, it refers to their merging into optimal number of logical groupings (cadres/services) that minimize dissonance and maximize synergies and organizational efficiency. This approach also balances the two conflicting needs for functional specialization and reduction of number of specialized categories/cadres/ services in IR. In addition, multitasking at the bottom of the pyramid also needs to be adopted.

Figure –5.3 Specialization decreases as we move up the hierarchy

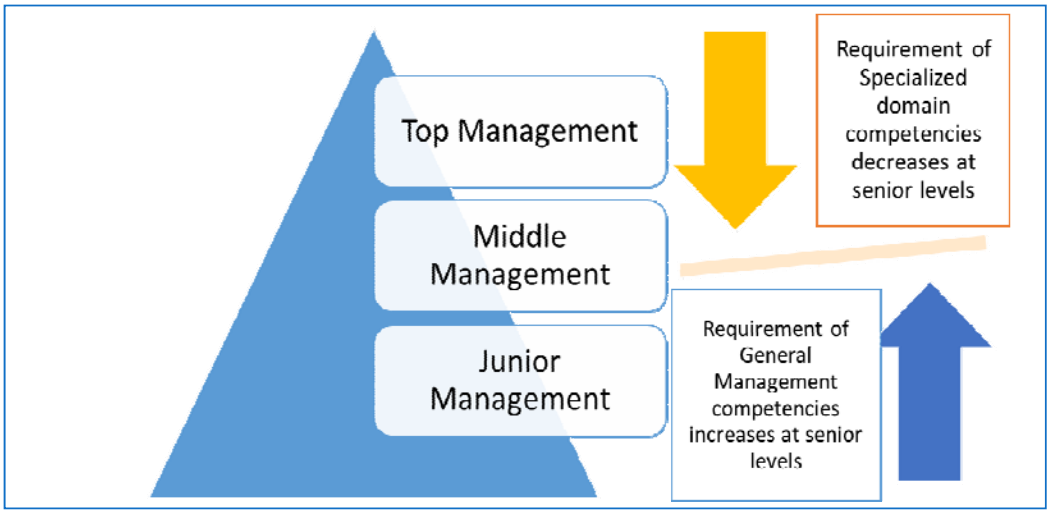
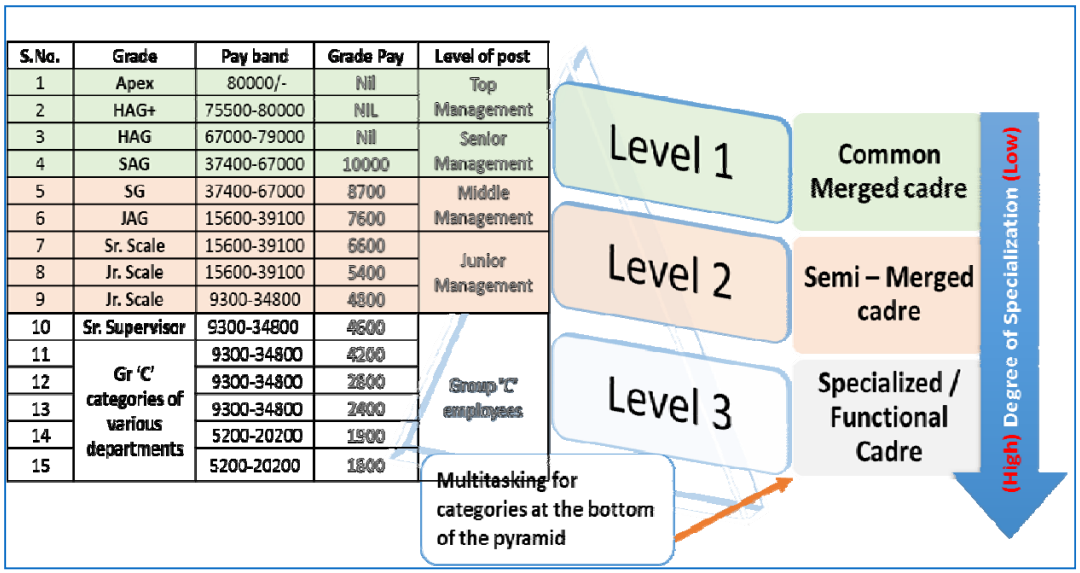


Figure 5.4 – Logical Grouping of Employees - approach to specialization.



5.27 This Committee is overwhelmingly of the view that this approach, along with the appropriate policies on mode of recruitment, manning, career progression, fixation of seniority, training and posting of officers can fully resolve the apprehensions expressed by the Gupta-Narain committee.

5.28 Logical grouping of functions and manageable skill/competency spread should be the basis for merger of Group 'A' services: Having convinced itself that large multiplicity of Group 'A' cadres is working against the interests of the organization, this Committee feels that various options for reduction in the number of Group 'A' services in IR to an optimal/minimal number of services should be evaluated on the following essential parameters:

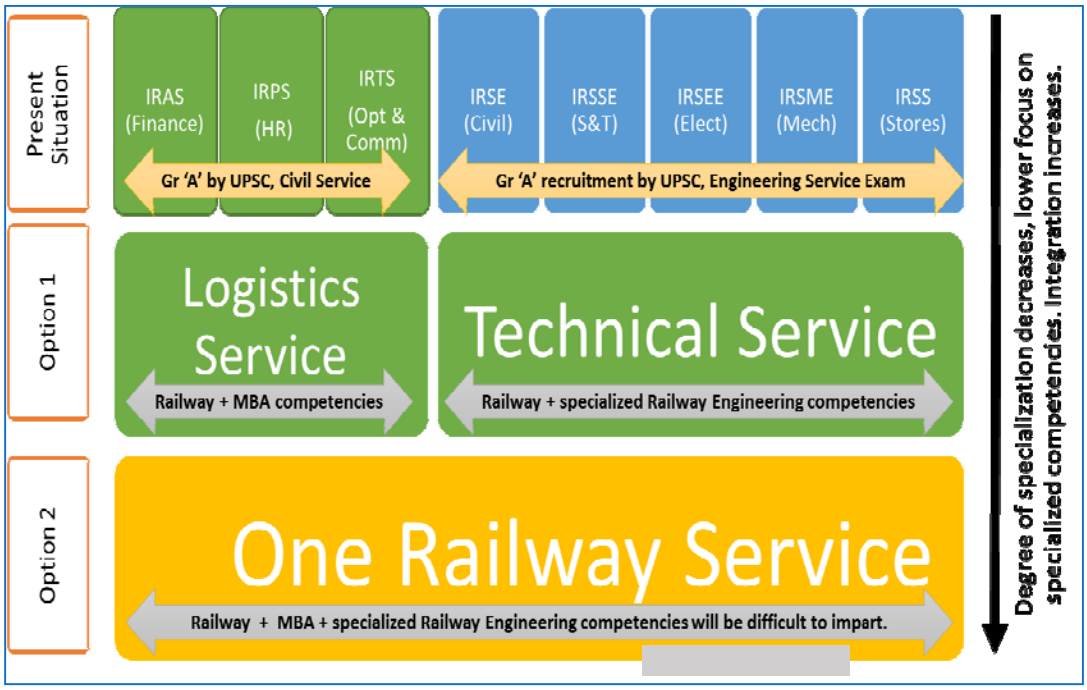
5.29 Rationalization of the number of services should achieve the required end objective of eradicating unhealthy inter-service rivalry/competition that contributes to 'departmentalism': In this regard, this Committee feels that the option of four organized Group 'A' services that was suggested as an alternative option in the NTDPC – Railway report (Annex 1.4 of the report) wherein Civil Engineering & S&T services, Mechanical & Electrical services have been proposed to be merged along with the role of Personnel and Stores service being carried out by all the other services will not alone suffice. This option, though a step forward, suffers from the limitation that reduction of just a few services by merger of some functions is not likely to have a major impact on mitigating

inter-service rivalry, as the root cause of inter-service rivalry will remain largely unaddressed and the hitherto influential competing services will emerge in an even more consolidated form. This may, in fact, lead to heightened rivalries. The evaluation of various options on this parameter would require an assessment of the grouping of functions (job content) and the grouping of competencies/skill sets required to perform the job/task (job requirement) of the proposed services. In addition, the option also needs to be evaluated from a perspective of feasibility of rotation of the existing officers to different Sub-Departments/Sub-functions that have been clubbed (as the departments themselves remain differentiated at lower levels – Group 'C' as sub-departments) and the retraining requirements of the existing officers who will need to carry out work that will encompass different spheres of specialization.

5.30 Evaluation of feasible options: Based on the aforementioned evaluation principles, two feasible options for reduction in the number of Group 'A' services in IR to an optimal/minimal number are shown in Figure 5.5. The figure also shows groupings of competencies required in case of these options. This Committee feels that as we go from the present eight services to one Railway service option, there is bound to be a dramatic decrease in the degree of specialization. This was also one of the major criticisms by the Gupta-Narain Committee against the one Railway service option. Moreover, if an analysis of the options is done from the point of view of "competency groupings", it is obvious the "one Railway service" option would require a very diverse set of skills and competencies to be available in a directly recruited candidate, which is not an optimum situation, and could certainly not provide the optimal mix of the kind of professionalism and broad base required. Furthermore, attaining proficiency in such diverse areas for existing officers and those that are promoted from Group 'B' may also not be feasible. Thus, going from the present system to the one service option would be too radical and not too practical a solution. However, the two service option that has also been propounded by many committees, including the latest NTDPC-Railway Report (2013), provides merger of existing services into two sub-groups – Technical and Non-technical – on rational basis, in terms of workable parameters. In the case of technical departments, there are a number of functions that are similar across departments, like tender management, contract management, project management and administration etc. Similarly, in case of the non–technical departments, there are functions that are performed across departments. Given the fact that specialized nature of work decreases at higher levels in all departments, this approach, coupled with the adoption of a hierarchical approach to specialization, as enunciated in the preceding paragraphs (Figures 5.3 and 5.4) makes the grouping of functions (job content) quite feasible. The grouping of services will also result in an elimination of the multiplicity of activities and redundancies, thereby increasing efficiency and freeing resources that can be utilized more effectively. In any case, wherever specialization at higher levels is required, the same can be retained and marked as specialized functional posts within the merged cadre/service. This option also provides for logical competency groupings– MBA and Engineering competencies as far as recruitment/training is concerned. It is viewed that retraining and rotation of existing/ promoted officers to various sub-functions would also

not be too difficult. These considerations therefore make this option relatively more viable and implementable from a perspective of recruitment, training and cadre management. As such, this committee recommends that IR should consolidate and merge the existing eight organized Group 'A' services into two services i.e. the Indian Railway Technical Service (IRTechS) comprising the existing five technical services (IRSE, IRSSE, IRSEE, IRSME and IRSS) and the Indian Railway Logistics Service (IRLogS), comprising the three non-technical services (IRAS, IRPS and IRTS).

Figure 5.5 - Various Options for Reduction in the Number of Group 'A' Services in IR



5.31 Creation of a General Management Service: IR has a large number of General management posts such as ADRM, DRM at the Divisional level, AGM, SDGM and GM at the Zonal level, and a few posts in the Railway Board office also. These posts are critical for smooth Railway operations and the incumbents in the field are in charge of the management of the Division/Zone, and supervise and coordinate activities of various departments. At present these posts are filled up by suitable and eligible officers of the eight organized Group 'A' services. The officers who are posted to these posts have a fixed tenure and upon completion of their tenure, they are posted back to their respective departments. This Committee notes that as long as officers are positioned against the General posts, they are driven by larger organizational interests rather than narrow departmental interests. However, return of such officers to their departmental environment on completion of tenure causes a relapse into departmental squabbling. This Committee accordingly feels that there is a strong case for an institutional mechanism whereby selected officers once positioned against General Management posts, continue to perform that role for their residual careers. This would need a new cadre – a General Management cadre – being created. This Committee deliberated on the recommendations

contained in the NTDPC Railway Report regarding the creation of a managerial cadre of leaders at the time of granting Selection Grade, i.e. in the 14th year of service. This Committee is unanimous in its view that given the importance of these general management posts, it is essential that greater professionalization is introduced by way of creation of a dedicated General Management Service (IRGMS). This will allow the selected officers to continually work in various general management posts and thereby gain proficiency and expertise over their balance career in IR. The introduction of IRGMS will also ensure that effective coordination between the two services (IRLogS and IRTechS) is achieved and the various departments together work for common organizational objectives and priorities rather than those of any particular department. Further details regarding GMS (General Management Service) are covered in the other recommendations given below. The other recommendations of this Committee on the details regarding the mode of recruitment, fixation of seniority, posting, career progression etc. in respect of these three services are as follows.

5.32 **Indian Railway Technical Service (IRTechS):** Direct recruitment of officers to IRTechS should continue to be from the Indian Engineering Services (IES) examination conducted by UPSC, as is being done currently. Thereafter, once that new system of entry is in place, the recruitment of a few officers with degrees in Mechanical Engineering through the Special Class Railway Apprentices route should be discontinued, as the *raison d'être* for it is no longer valid. Candidates belonging to the existing engineering streams (electrical, mechanical, S&T, civil etc) who are eligible for any of the Railway engineering services and who appear, qualify and obtain preference based on their merit should be recruited to the common single IRTechS. Alternatively, the option of conducting a separate Railway engineering exam by the UPSC has also been suggested to us. However, this Committee is of the view that holding a separate exam for IRTechS may not be desirable, as it may lead to dilution in the quality of candidates selected and would also entail extra expenditure on the exchequer. The promotion of Group 'B' officers to the Group 'A' IRTechS would continue to be done through the existing procedure of UPSC, the only difference being that instead of the five different seniority lists that exist currently for the five different technical services, a common seniority list of Group 'B' officers will be drawn up and used. The details for this may be worked out by IR. In the event a Group 'B' officer inducted into Group 'A' has a relatively shorter residual service left, deployment could be assigned to him in the functional area of his specialization only. There will be no change in the manner of promotion of Group 'C' officials to Group 'B' posts in IR. The option of UPSC conducting a separate examination for recruitment to IRTechS after class 12^{th} and then imparting them specialization in Railway Engineering has also been suggested to us. This Committee is of the view that holding a separate exam through UPSC and then grooming the selected candidates in Railway technology in a Railway University, is still premature. If there are indeed Railway Universities (as formed in China and Russia) there will be a pool of specialists in Railway engineering. But India is still some distance from that objective. Once that Railway University channel is opened up, the UPSC route should not continue. Multiple channels should not exist.

5.33 **Indian Railway Logistics Service (IRLogS):** Direct recruitment of officers to IRLogS should continue to be from the Indian Civil Services Exam (ICES) conducted by UPSC, as is being done currently. As in the case of IRTechS, this Committee is of the view that holding a separate exam for IRLogS may not be desirable. A similar procedure as recommended for IRTechS should be followed in the case of Group 'B' officers inducted into Group 'A'. Promotion of Group 'C' officials to Group 'B' posts of the accounts, personnel, commercial and operations departments should continue to be done through the existing procedure, except that for promotion to Group 'A' IRLogS, there will be a common seniority list drawn up of all Group 'B' officers belonging to different departments. As in the case of IRTechS, the detailed policy for this is being left to IR to formulate.

5.34 **General Management cadre:** The Committee recommends that officers selected for General management functions should be enrolled into a new Service, Indian Railways General Management Service (IRGMS). Carving out a new Group 'A' service will essentially require selection through a process of assessment/selection conducted by UPSC from amongst suitable/eligible officers belonging to IRTechS and IRLogS, who fulfill the laid down eligibility criteria. Given the important role to be played by officers selected for this cadre, it is necessary that these officers should not only possess the requisite knowledge, competencies, and skills associated with the general management role, but more importantly also the right attitudes and aptitude. It is recommended that due weightage to general management qualifications (MBA, PGDM etc.) attained from recognised university, either before joining the service or after, should be given. As such, the selection process has to be rigorous, fair, and transparent. It should comprise assessment of record of service, psychometric testing and interview by a panel of independent General Management domain experts to be chosen by UPSC.

5.35 While it is recommended that the selection to IRGMS be conducted for officers completing 13 years of service (at the time of grant of Non-Functional Selection Grade), opportunity to existing officers with service more than 14 years also needs to be provided. For this purpose it is recommended that **(a)** all officers less than 52 years of age (eligibility criterion for posting as DRM) but having service of more than 14 years should also be screened for the IRGMS as a one-time exercise at the initial stage; **(b)** Officers who have already worked in General Management posts of ADRM, DRM, AGM, SDGM, GM should also be screened for selection to IRGMS; **(c)** There should be no quotas for officers of any of the existing services, nor should any other artificial barriers be permitted, and equal opportunity should be made available to officers of all organised Group 'A' services; **(d)** From an implementation point of view, officers can be segregated in terms of broad range of length of service corresponding to the age/experience eligibility criterion of different General Management posts and these officers should compete for General management posts for which they are eligible. The zone of consideration can be initially kept at three times the number of posts and later refined based on experience. A merged/inter se seniority of officers will be used for short listing officers for inclusion in the zone of consideration; **(e)** Given the large number of Group 'A' officers, the number of opportunities to be provided to the officers for induction into IRGMS should be restricted

to two only. For officers with length of service less than 14 years, the two chances will be provided in their 14th and 18th year of service and for others, the gap in the two opportunities should be either 3 years, or upon becoming eligible for next level of General Management post; **(f)** To ensure credibility of the system, it is strongly recommended that the Ministry of Railways should not allow any relaxations of norms once decided, on a case to case basis, unless there is genuine requirement arising out of circumstances, warranting change. Mandatory consultation with DOP&T/UPSC will ensure departures on trivial low-merit grounds being eliminated.

5.36 Restructuring of the organizational pyramid could be carried out by earmarking more posts for the General Management Service, particularly at the mid management levels (SG & SAG). The officers selected for the General Management Service, apart from manning the General Management posts such as ADRM, DRM, AGM, GM, Board Members etc., should also be given exposure to vigilance, operations, planning, estate management, station management and finance functions. The Committee wishes that it may be noted that in such a scenario, IR operations should be primarily carried out by members of IRGMS, regardless of whether they have been drawn up from the present day IRTS, IRAS or IRSME etc. Such 'cross departmental' assignment of functions will familiarize them with all facets of Railway working.

5.37 Fixation of inter se seniority**:** Determination of *inter-se* seniority of officers belonging to various cadres recruited from different channels has always been a contentious issue in IR. With the merger and consolidation of the existing eight organized Group 'A' services into two services at lower levels and three services at middle management levels, a credible manner for evolving a merged seniority list of the various batches will have to be adopted. In the first instance, this will include drawing up common seniority list for IRLogS and IRTechS within the two sub-groups, and then a combined seniority list of officers belonging to both these sub-groups. More importantly, the combined seniority lists will be required not only for fresh recruits, but also those already in service with long years already spent in the IR system. In order to ensure that the gap between IRGMS and other Group 'A' officers is not too wide, it can be stipulated that the gap between IRGMS and other Group 'A' officers should not be more than 2 years and if there are no vacancies, non-functional grades will be given to the latter. This draws on principles followed by the 6th Pay Commission. This Committee does not possess the expertise to work out the common *inter se* seniority of Group 'A' officers of the two services (IRLogS & IRTechS). This should be worked out in detailed consultation with UPSC and domain experts.

5.38 Manning, Posting and Career progression**:** The officers in the two services, IRLogS and IRTechS, will progress in their cadre and will undergo compulsory job/function rotations within a specified period of time, so as to gain competency in all the functions within the domain of the sub-group. However, at least in the initial years, IR should be permitted to make optimal use of highly specialized knowledge/experience of any officer, without significantly diluting the job rotation requirement. The 'leaders' inducted into IRGMS

would be posted to the various General management posts responsible for planning, operating, vigilance, besides the already acknowledged general management posts of Additional Divisional Railway Managers, Divisional Railway Managers, Chief Vigilance Officers, General Manager, etc. Training of officers would also be aligned to meet these career progression requirements, as subsequently discussed.

5.39 Training**:** With implementation of the above recommendations, Group 'A' officers, both from technical and non-technical streams, will be required to carry out a wider and newer spectrum of activities. Imparting comprehensive training at the induction stage for newly recruited officers, as well as appropriate gap-filling training interventions as part of in-service training at regular intervals for existing officers will be needed. This Committee feels that this will require a comprehensive revamp and strengthening of the training function as a programme of gigantic proportions. Training and augmentation of competencies will require to be planned, implemented and monitored for ensuring success of merger of services. IR will need to devise curricula, prepare course material, create competent faculty, strengthen the training infrastructure and devise effective training efficacy measurement tools. At present there are six Centralized Training Institutes (CTIs) in IR - four for technical disciplines and two for non-technical areas. We recommend that the existing infrastructure of these six Centralized Training institutes (CTIs) be used for this purpose.

5.40 Medical*:* While we have discussed repositioning of eight organized Group 'A' services of IR in the new dispensation being recommended by us, a brief treatment of two other Group 'A' services – Indian Railway Medical Service (IRMS) and Railway Protection Force (RPF) – would be in order now. As has also been mentioned and flagged in Chapter 3, IR has 125 hospitals, 586 health units/polyclinics and 14,000 beds for patient care. There are 2,600 doctors and about 54,000 paramedical staff. Yet, IR has recognized 250 private and Government hospitals for referral of their patients, resulting in a double whammy for the finances of IR. The overall level of satisfaction amongst beneficiaries of Railway Health services is low. This Committee has carefully deliberated upon all related issues, and is of the opinion that there is opportunity to leverage the need for augmented, more efficient and more responsive healthcare infrastructure in the country by using the infrastructure available with IR, and managing the arrangement through select private hospitals. Healthcare business is seen as a high return proposition. In addition to what has been said in Chapter 3, we propose that IR should endeavor to find partners in the private sector to collaborate through more optimum use of its available healthcare infrastructure for a larger pool of patients, including Railway Healthcare beneficiaries. Broadly, a hospital could be offered to a private party on a long term lease of say 30 years, who will be responsible for running it. The private partner could make incremental investments to augment the infrastructure. In return, the private partner will be obliged to provide high quality healthcare to Railway beneficiaries free of cost, while charging at market determined rates from others. The Railway doctors and paramedical staff would be given an option either to continue to draw their salary at Railway rates, charged to the private management, or to get absorbed in the private management's cadre. We expect

that a large number of doctors with service of 20 years or more would be keen to leave IR and become part of the private hospitals.

5.41 Lateral entry: This Committee found that although there are some IR officers who proceed on deputation to other Ministries in the Central Government under the Central Staffing Scheme, this number is quite small and is largely restricted to deputation at Deputy Secretary/Director level posts, with the exception of a few at the JS level. This Committee observed that performance of IR officers on deputation has been largely of high standards, and that these officers have also been enriched by such exposure and experience. However, this Committee notes that there is virtually no deputation of officers of All India Services/Other Central Group 'A' services to IR. Consequently, IR suffers from inbreeding and is deprived of the benefit of services of officers with a wider set of competencies and varied experience. As such, this Committee is of the view that lateral movement of officers, both from outside to IR and from IR to outside, should be encouraged, without adversely impacting delivery of Railway services. The lateral entry/movement should be permitted both in non-technical and technical departments, respectively based on the Central Staffing Scheme pattern. This Committee further feels that in order to enhance the acceptability of such a proposition: (a)The number of posts to which deputations (lateral entry from outside) are to be permitted must be clearly identified, based on a rational criteria; (b) Inflow of talent from outside, such as chartered accountants, cost accountants, bankers, financial management experts in financial management posts, personnel from CPWD, research assistants from leading labs and universities (IITs etc), scientists from Government labs etc. (to join RDSO and training institutions) on deputation should be encouraged; (c) A system of balancing has to be devised so as to ensure that career advancement of Railway officers is not adversely impacted. This can be done by ensuring a net outflow of Railway officers (i.e. number of Railway officers on deputation minus number of other services officers coming on deputation to Railways) is retained at present levels; (d) Deputation of officers well conversant with Finance, PPP, resource mobilization etc. in other wings of the Government, can be effected through the Central Staffing Scheme. These could be to general management and financial management posts in the Railway Board, technical posts in RDSO, as faculty to NAIR and other training institutions.

5.42 This Committee also felt that IR should liberally allow non-essential manpower to proceed on deputation to outside organizations like PSUs of IR, through the Central Staffing Scheme, other PSUs and other organizations. IR needs to rethink its existing policy of unnecessarily restricting employees desirous of proceeding on deputation (especially from categories that require to be right sized), as not only does this mean savings on salary expenditure, it also results in the borrowing organization paying the Foreign Service Charges (towards pension and settlement dues of the employee) to IR. The employee also gains varied experience. Since officers' categories in most departments are actually over-manned, this is a good mechanism for managing costs. Further, in order to help in right sizing of IR, it is felt that the manpower requirements of new PSUs under IR should be met by appointment of Railwaymen(initially on deputation,

followed by absorption or direct absorption also) especially for categories with excess manpower.

5.43 Revamping the performance appraisal system: In order to successfully realize the full potential of outcomes from the other interventions being recommended by this Committee, and for improving the efficiency and effectiveness of the organization, meritocracy in IR has to be nurtured and strengthened. This Committee is of the view that the current performance assessment system, which was introduced recently in IR, is woefully lacking, and as a result it is not surprising that most of employees are assessed as 'outstanding' with little or no relationship with their actual performance and achievements. The system shows very little differentiation between performers and non-performers. We recognize that the malaise of universalization of excellence has become deeper after the system of sharing performance appraisals with reported upon employees. This malaise is also typical of Government and CPSEs. Another contributor to the present sorry state is the fact that grading of "outstanding" has become virtually mandatory for career progression, and a usual bell curve approach to grading could simply jeopardize many a career, besides causing a 'drought' of suitable candidates for being promoted to higher posts. We do expect that these and related issues will be placed before the 7thCentral Pay Commission for appropriate corrections across Government departments. Considering all aspects, this Committee strongly feels that a vibrant performance assessment system, driven by enhanced objectivity and transparency, needs to be rolled out and implemented in IR. This should equip IR with an ability to not only rationally differentiate the performance, capability and aptitude of its employees, but also to provide inputs for achieving a better fit between responsibilities assigned to an employee and his/her capabilities, and a means for identifying and strengthening improvement in areas of weaknesses detected in an employee. Development of his/her competencies and capabilities should become the driver. Therefore, IR, over a period of time, must migrate from the existing performance assessment system that merely and ritualistically seeks to assign a grading, to one where performance enhancement is the watchword. This alone shall provide rational and objective inputs for decisions related to assignment of responsibilities (posting), career growth, training and development strategy and subsequently also for compensation management (for achieving differentiated compensation linked to performance). It is felt that in order to achieve this, the performance assessment system based on assessment by a single reporting authority (the boss) must give way to a group based assessment system, where a nominated group of competent superiors goes through available performance records etc., or even interacts with the reported official if necessary, and records a comprehensive and objective assessment (for example, 360 degree assessment). Such assessment systems must also encompass annual performance target setting, target ownership (owned by the assessee), periodical performance reviews, corrective action and an independent/objective review system.

5.44 The following framework is indicative of what can be attempted. (i) A self-assessment in narrative form by the officer himself, highlighting his/her achievements and contributions

during the year; (ii) An assessment by the reporting officer, again emphasizing specific and concrete contributions that the officer has made, particularly, innovative changes made by him/her; (iii) Grading should be done independently, on the basis of the self-assessment and reporting officer's assessment by a group of senior officers, which could include retired officers, as well as reputed persons from outside. The Central Government has already acquired considerable experience in implementing a Performance Management System. Similar experience has also been gained in the performance rating system of Central Public Sector Undertakings. Based on all the experience gained, it is essential to introduce a performance management system, quantifying performance, into all aspects of Railway functioning. For this to take shape, new systems have to be devised and this will need to be professionally and independently coordinated and administered through a mechanism that ensures an arm's length from the executive boss while still keeping him/her actively involved. Performance assessment, being a core HR function, will have to be coordinated and administered by a specialized core group within HR, involving relevant line managers. This will also necessitate adequate training to be imparted to the HR managers tasked to carry out this activity.

5.45 Rewarding excellence: This Committee is of the view that IR needs to institutionalize credible, transparent and fair mechanisms for recognition and reward of excellence in the organization. This can help motivate officers to strive for excellence. To be effective, the rewards will need to be tangible, in terms of having an impact by way of posting/ assignment and even career growth of employees. In exceptional cases of contribution to enhancement of systemic efficiencies, effecting significant savings, improving safety scenario etc., monetary rewards could also be considered.

5.46 Restructuring the organization to be more customer/business oriented: The Expert Group on IR 2001 and the Expert Group for modernization of IR (2012) had recommended reorganization of IR along business lines, so as to be more responsive, agile/flexible and competitive. This Committee concurs that customer/business oriented structuring of IR is essential for IR to function along commercial lines, with greater participation from the private sector.

5.47 Reorganization of Departments: Reorganization of various existing departments in IR will require changes in the manner in which various activities (second level groupings of functions within each department) are currently bunched/grouped and oriented as a function/department within the organization. The indicative list of the second level of functions carried out by various departments and manned by Group 'A' services is depicted in Figures 5.5 and 5.6. The example of existing technical services (Figure 5.5) shows that it is possible to rearrange and classify together various functions of different departments based on certain logical similarities/criteria. For instance, General engineering (buildings/station maintenance, telecommunication, general station/building lighting etc.), Engineering functions related to fixed Rail assets (tracks – Permanent way, track signaling, etc.) and Motive Power (All locos - Electric and Diesel- and traction installations) and Rolling stock (coaches wagons, and all self- propelled vehicles) could form different clusters. This can be used as a possible basis to reorient the existing

departments to meet the organization's business strategies. As already indicated, reorganization of departments is required to achieve a better organizational strategy – structure alignment that is required to make the organization more agile/flexible and customer/business oriented. This is depicted in Figure 5.7 below.

Figure 5 .5– Railway Technical Services

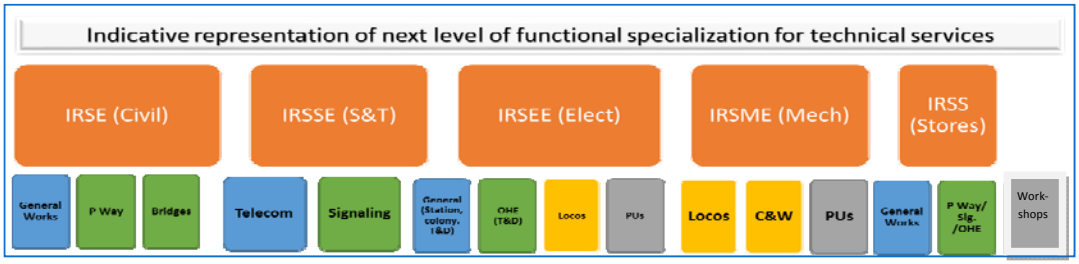
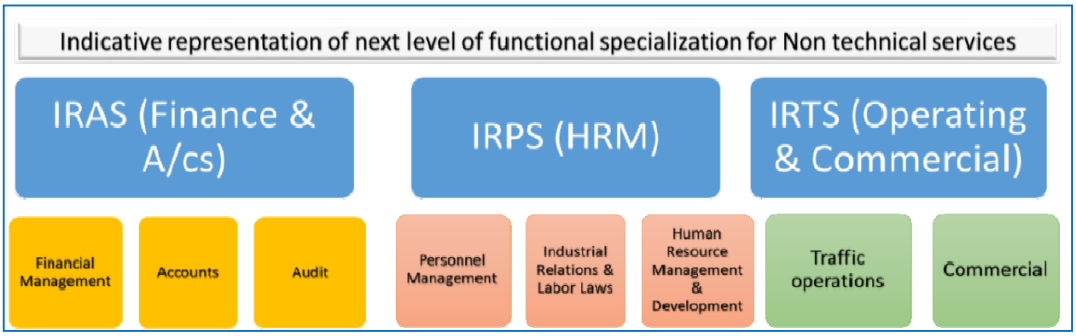


Figure 5.6 – Railway Non-Technical services



**** The green, blue, yellow and grey colours indicate similarity of classification of various functions across different departments.***

5.48 Differentiated approach for various hierarchical levels is required: This Committee is of the view that since a complex organization like IR will necessarily require functional specialization, and as complete transformation of the present vertical functional groupings to a different format will not be easy, business reorientation of the organization would best be possible by having a differentiated approach for the various hierarchical levels. That would mean that while vertical functional specialization may continue at the lower Group 'C' level, the clubbing of different functions at the higher levels of the Divisions/Zones can be organized around business units /customer lines. This will require that different functional competencies are acquired by officials as they climb up the organization ladder.

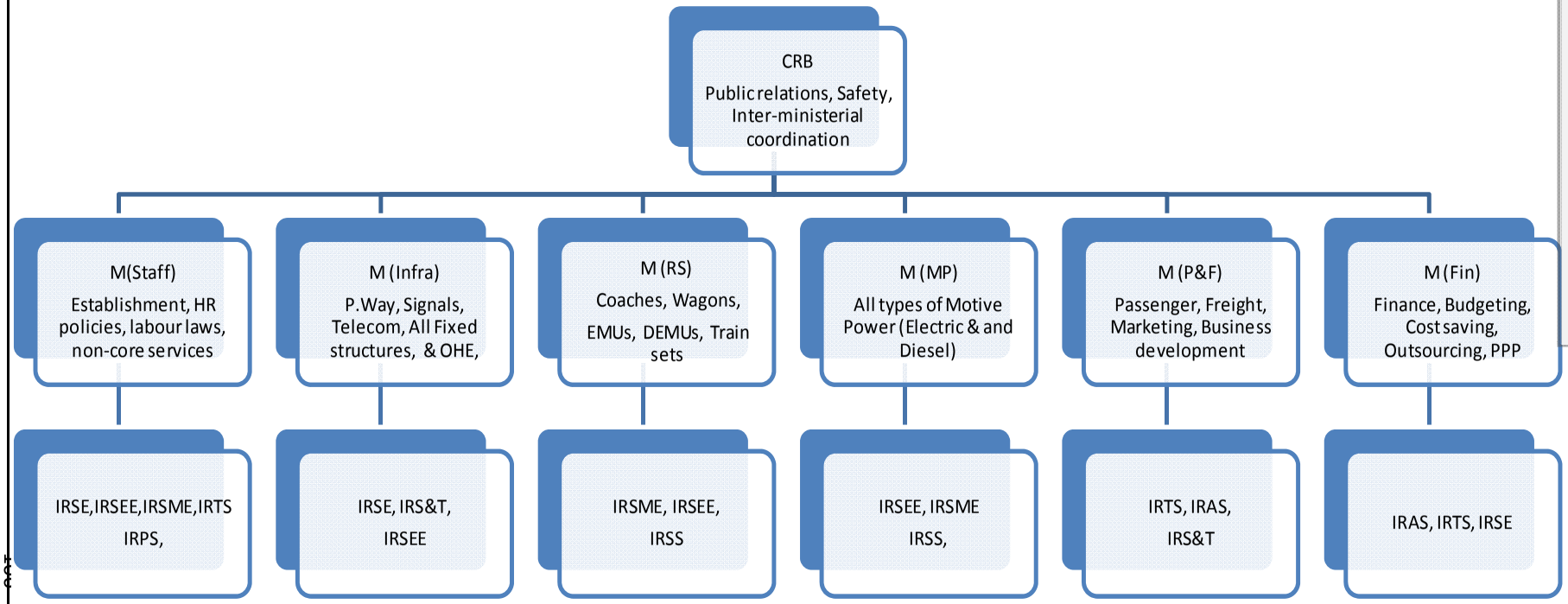
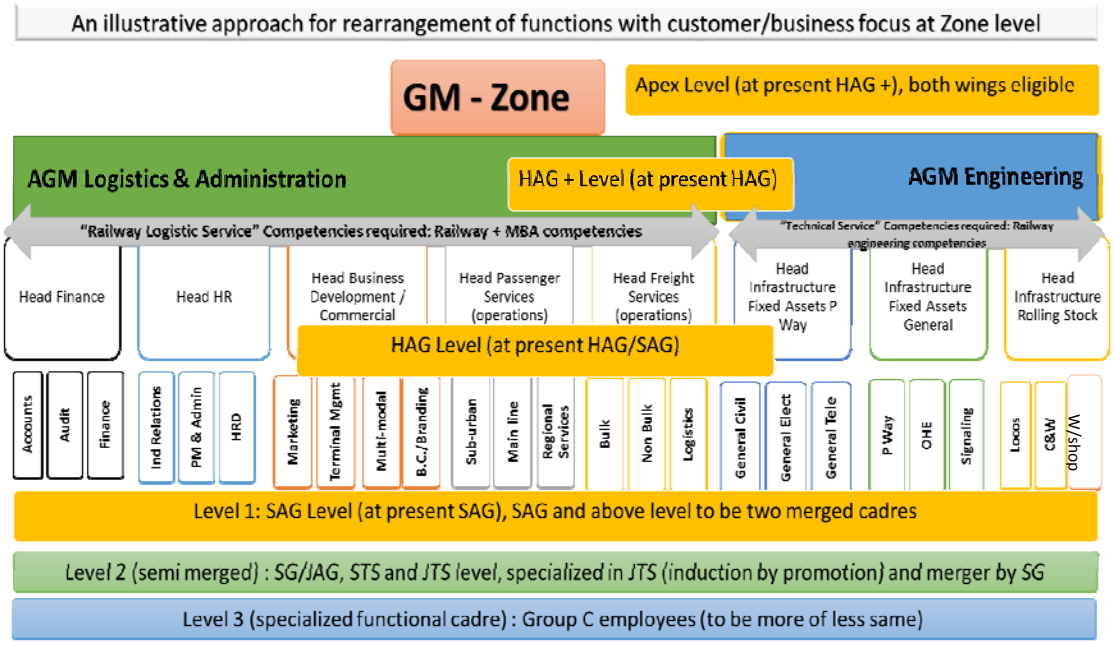

CRB
Public relations, Safety, Inter-ministerial coordination
M(Staff)
Establishment, HR policies, labour laws, non-core services
M (Infra)
P.Way, Signals, Telecom, All Fixed structures, & OHE,
M (RS)
Coaches, Wagons, EMUs, DEMUs, Train sets
M (MP)
All types of Motive Power (Electric & and Diesel)
M (P&F)
Passenger, Freight, Marketing, Business development
M (Fin)
Finance, Budgeting, Cost saving, Outsourcing, PPP
IRSE,IRSEE,IRSME,IRTS IRPS,
IRSE, IRS&T, IRSEE
IRSME, IRSEE, IRSS
IRSEE, IRSME IRSS,
IRTS, IRAS, IRS&T
IRAS, IRTS, IRSE

Figure 5.7

5.49 Based on what has already been said, a possible organisation structure at the zonal level is depicted in Figure 5.8. The manning of the departments will be from the two services (IRLogS and IRTechS). At level three (Group 'C'), the specialized cadres on traditional functional lines shall continue and this will be semi merged in level two (Junior time scale - JTS, Senior Time Scale - STS, Junior Administrative Grade/ Selection Grade - JAG/SG), as discussed earlier. As such, officers posted to JTS upon promotion from Group 'C' shall continue to work in their specialized functions/streams. They will be put through in-service training, and after attaining the required level of competency and proficiency, will be posted to other group functions upon promotion to STS. However, job rotation (to different functions) will be ensured for directly recruited officers joining in JTS who have already received multi-disciplinary training during probation period. Similarly, rotation to all group functions will take place for these officers by the time they reach non-functional selection grade. This will ensure that at level 1 (SAG and above), seamless and complete merger is effected, and two broad services will continue with their incumbents posted to different functions within their allocated departments. E.g. in the case of non-technical group (finance, HR, business development, passenger services, freight services functions) and sub-departments/functions under these departments, manning will be sourced from "IRLogS" stream officers. So a directly recruited officer (trained in MBA type of course, in service) upon joining in JTS may get posted to any sub-department and then will be rotated periodically, so that he/she is posted to all major departments during the career. This is somewhat similar to the existing case of operating and commercial departments, wherein IRTS officers are posted in rotation to both the departments. As already indicated, the General Management posts like GM, AGM, DRM, ADRM etc will be manned by officers selected to the Indian Railway General Management Service (IRGMS). For the operating function assigned to IRGMS, officers will move within the IRLogS subgroup up to Junior Administrative grade, after which, these functions shall be administered by members of IRGMS. For this function, we recommend that the hierarchical reporting should envisage the JTS officer reporting to STS designated officers within the same subgroup, STS officers reporting to designated JAG officers in the same subgroup, but JAG officers shall report to designated SAG officers in the IRGMS subgroup. For Vigilance and Planning functions, while control shall vest in the IRGMS subgroup at SG level and above, the structure from Group 'C' to JAG level should be operated on ex cadre basis, drawing officers from IRTechS and IRLogS streams on tenure basis in a need based manner. For the Safety function, this Committee feels that independence is necessary, and therefore, this function should be carried out as a stand-alone subgroup, formed on deputation basis right through to SAG/HAG in the zones and divisions. Further, in order to empower the zonal and divisional units of IR, this Committee proposes that there should be greater delegation of power to the officers of these units and simultaneously commensurate authority would need to be given (mentioned in Chapter 3), which would necessitate appropriate up-gradation of key posts in these units. Accordingly, the level of officers (i.e grade - SAG/HAG/Apex etc) depicted in Figure 5.8 is as per the requirement of making the zones and their management fully empowered to run the zone with enhanced delegation of powers. As such, the GM is shown at apex scale (as opposed to the present HAG+), AGM in HAG + grade etc.

Figure 5.8 – Possible Rearrangement of Functions (Dept.) with Customer/Business Focus



5.50 Training and re-skilling: Training, re-skilling and imparting newer set of competencies to employees will be some of the most critical activities upon which the success of all other the key recommendations of organizational restructuring will depend. As already mentioned, need for training will not only arise from the merger/consolidation of services, but also from the reorganization of departments. The successful reorientation of traditional departments as shown in Figure 5.8 above, will require not only a rearrangement of existing departmental structures, but also imparting of newer competencies and skill sets as members of each present day department will be required to perform roles of other departments within the subgroup. Besides, the changed focus of the organization will require newer kinds of competencies being created. For example, the existing commercial department has hardly any focus on marketing, brand building etc. In addition, new functions like providing door to door transportation solutions through inter-modal tie ups, terminal (station) management and services etc. will be required to be carried out. This is equally true of finance and personnel departments. The technical departments will need to focus more on technically specialized areas. This will necessitate focus on designing new job responsibilities, listing the competencies required to perform the jobs satisfactorily, defining new reporting patterns, designing training modules for existing employees, revising the recruitment strategy (source of recruitment, educational qualifications required etc), introducing changes in the manning policy, performance management and introduction of succession planning. Induction training given to officers recruited to IRTechS & IRLogS will need to be much more broad-based. This Committee recommends that IR must revisit the duration of training, and make appropriate changes if the duration

needs to be enhanced. The existing officers will also need to be trained extensively in newer areas in which they will be called upon to perform as a result of the policy of job rotation. In view of these requirements, rearrangement of the existing departments and introduction of newer functions needs to be planned and phased appropriately.

5.51 CTIs: As already noted, besides NAIR, IR currently has six Centralized Training Institutes (CTIs) – four for technical disciplines and two for non-technical areas. These facilities should be used for running both induction as well as in-career training programmes. Given the enormity of the task, CTIs will require significant capacity augmentation, both in terms of physical infrastructure, as well as on the soft side like curriculum development, faculty development etc. For this purpose, it is felt that the CTIs should develop partnerships with leading professional academic institutions, both in India as well as abroad. In addition, the officers will also need to be trained through professional academic institutes as well. The Zonal Training Institutes would also need to be upgraded, both in terms of infrastructure and capacity, by creating suitable tie ups for radically improving the training imparted to the non-gazetted officials of Railways.

5.52 NAIR: This Committee is of the view that NAIR should be assigned the status of a university for in-service training and also for imparting education/training in the field of management, offering specializations in the areas of HR, Finance, Marketing, Communications, Branding, Logistics, Transport Management and also Railway centric-areas of general management. It is recommended that NAIR should conduct post-graduate courses, including an executive MBA type course of one-year duration, to meet the training needs of both new recruits and those already in service.

5.53 Optimization of the size and skills of manpower in IR: As already highlighted, the staff cost (including pensions) is the single most significant expenditure item accounting for the lion's share in IR's total expenditure. Very little can be done to tackle the pension expenditure, which is a committed liability, except perhaps building a Pension Fund corpus over time through monetizing of assets and alternate revenue generation. Therefore, curtailing expenditure on salary and wages seems to be the only option for revenue expenditure control by IR. Since the salary cost is a function of the salary structure and the total number of employees, and as the salary structure will only become increasingly more expensive as a result of salary revisions, DA hikes etc., the only flexibility available for salary cost reduction is rationalization of the number of employees through the adoption of diverse strategies. In order to arrive at possible options for rationalization of manpower costs, an analysis of manpower/staff strength, job positions, organizational structures, productivity levels, systems and processes etc. currently existing in IR need to be undertaken. Evaluation of possible alternative approaches that could be adopted to reorganize and rationalize work, manpower deployment, introduction of technology interventions, removal of obsolete processes etc. would be imperative.

5.54 This Committee noted that although the erstwhile Group 'D' categories have been merged and granted the lowest Group 'C' Pay Band and Grade Pay by the 6th Central Pay Commission, most of the employees in these categories continue to perform the same functions, with practically no change in their responsibilities, skill sets and competencies. As such, IR suffers from a double whammy in the sense that these categories constitute the largest chunk of IR employees, and the cost-to-company of this category of employees has become significantly higher than the market valuation of job/tasks carried out by these employees. Enormity of their sheer numbers makes the costs of these employees quite substantial. This Committee is of the firm belief that if IR truly wishes to significantly rationalize its staff costs or improve its productivity, it is these categories of employees that will need to receive topmost attention. IR data relating to the various erstwhile Group 'D' categories indicates that as on 1st October 2014, there were approximately 5.7 lakh sanctioned posts and 4.7 lakh employees on rolls belonging to these categories in the open-line set up (this does not include staff of Production Units and "other units"). Further, information gathered from IR also reveals that a large number of these categories still continue to carry out jobs and responsibilities that are now quite obsolete, for instance Bhisty, Mochi, Sarang, dhobi etc. Moreover, the work performed by a large number of these categories can easily be outsourced at much cheaper rates as the cost of manpower for performing these tasks in the private sector is much lower. It is also evident that the responsibilities of many of these categories can be combined through multi-skilling and multi-tasking. This Committee also notes that despite significant technological improvements and automation in many areas in IR, there has not been commensurate rationalization of staff. Interaction with different stakeholders indicates that pressure groups, narrow departmental outlook and lack of will on the part of IR management have created such a situation.

5.55 This Committee feels that IR will need to adopt policies and strategies aimed at rationalization in the number of employees in these categories by: (a) carrying out an exhaustive independent work study to arrive at the optimal number of staff required and laying down yardsticks for different activities (the existing yardsticks are nonscientific, oriented towards furthering departmental empires & do not recognize impact of technological up-gradation); (b) simplifying processes, streamlining systems, rationalizing and discontinuing obsolete and low value adding activities; (c) reducing number of peons, khalasis and other such categories through rightsizing and outsourcing; (d) discounting and eliminating a number of obsolete Group 'D' categories that are no longer relevant (box porter etc.); and (e) taking steps to increase the output of such staff at the relatively lower levels whose functions are linked to safety (e.g. gangmen, trolley-men etc through multi-tasking, adoption of better technology, retraining and efficiency enhancing measures etc.). Further, in order to achieve rationalization of the erstwhile Group 'D' low skill categories, IR should immediately very strictly regulate recruitment to these categories and adopt policies for redeployment of existing manpower wherever possible, and retraining the remaining to enhance efficiency.

5.56 During meetings with stakeholders, this Committee observed that a significantly large number of persons are recruited to unskilled/low skill categories through some practices of IR that prevent open market competitive recruitment. As a result, not only does IR end up diluting the quality of manpower recruited, this also dilutes the principles of equal opportunity for employment in the Government that is guaranteed by the Constitution. The intention of Compassionate Ground (CG) appointments is to give immediate financial assistance to the families of bereaved Railwaymen, to help them to tide over the financial crisis. As per Government norms and also according to judicial pronouncements of the apex court, compassionate employment cannot be claimed as a matter of right to be granted in normal due course, and it is necessary that the financial condition of the family of the deceased employee is taken into account while considering such requests. This Committee feels that norms followed elsewhere in the Government, as upheld by the apex court, should be followed. In addition, CG must be offered to the best suited member of the family and the person so appointed shall have to get the appointment 'ratified' within a reasonable period of, say two years, by qualifying in the recruitment examination prescribed for that category. The Committee was informed that in 2004, IR introduced a safety-related retirement scheme (SRRS) for Drivers and Gangmen. In terms of this scheme, appointment to the dependents of an employee belonging to the nominated safety categories (which list has since proliferated over time) will be offered, subject to their fulfilling all other eligibility conditions, provided the working employee quits service by seeking voluntary retirement. This was done with the ostensible objective of improving safety. This scheme was subsequently modified and it was decided to extend the benefits of the scheme to other safety categories of staff with a grade pay of Rs. 1800 per month (the lowest categories in IR after the 6th Pay Commission) and the scheme was renamed Liberalized Active Retirement Scheme for Guaranteed Employment for Safety Staff (LARSGESS). This scheme has come under judicial criticism (by various CAT benches at Jaipur, New Delhi and Patna) and has been declared *ultra vires* of the provisions of the Constitution (Articles 14 and 16). This Committee is of the view that while the scheme may have been started with a good intention of enhancing safety, substantial dilution in the norms and scope of the original scheme have now led to a situation where this is now coming under severe judicial scrutiny and criticism. As such, this Committee feels that this scheme needs to be reviewed *ab initio*. In the interim, as suggested in the case of CG appointments, persons recruited through this route should be required to get their appointment 'ratified' within a reasonable period of, say two years, by qualifying in the recruitment examination prescribed for that category. Further, it was noted that historically in IR, due to the nature of job of field officers that requires their 24x7 availability, a Dak cum telephone attendant (popularly called bungalow peon) has been traditionally provided to senior officers (JAG and above) to assist them in official work at their residence. However, this practice got liberalized over time, and TADKs are provided to all JAG and above officers. The TADKs are appointed based on the basis of recommendations of the concerned officer, and join Railways initially as temporary employees in PB 1 with a gross pay of Rs 1800. On the completion of three years of satisfactory service, these bungalow peons are absorbed as regular employees in

erstwhile Group 'D' categories. This arrangement has been under criticism since the 4th Pay Commission and needs to be reviewed dispassionately for its discontinuation. When IR decides to discontinue this scheme, the existing TADKs should be retrained and deployed gainfully in the system.

5.57 An entirely legitimate question can be asked about the HR proposals in this Chapter. Earlier Chapters (such as Chapter 1 and 3) spoke about the need for setting up a Railway Infrastructure Company, in the interests of fair competition and access to track. That requires a bifurcation of existing IR employees into the Railway Infrastructure Company and that part of IR which operates trains. Given that context, why does this Chapter presume that the present IR structure will continue? This has to do with the time sequencing of reforms contemplated by this Committee, indicated in the Epilogue. The bifurcation is in the future, while the HR changes proposed in this Chapter are immediate. The changes proposed in this Chapter are thus a prerequisite to the bifurcation. Once the other changes come into effect and the bifurcated parts of IR begin to function according to commercial principles, IR recruitment (in the Railway Infrastructure Company as well as that part of IR which operates trains) need no longer be tied to the UPSC route, as indicated in this Chapter. Both units should be free to hire from wherever they wish, following whatever channel they wish. However, that's in the longer time frame. To get to that desired destination, one needs to fix both HR and finances. Having talked about fixing HR, we move to fixing finances in Chapter 6.

Chapter 6: Budgetary Relationships between Governments and IR

Introduction and Legacy[36]

6.1 Before 1854, all work associated with the Railways was handled by the Engineering Department of the Army under the aegis of a Military Board in each of the three Presidencies – Madras, Bombay and Bengal. The Military Board was abolished in 1854 by Lord Dalhousie and a Central Public Works Secretariat was established in turn and Chief Engineers were appointed under every Local Government to manage work effectively. With the control of India transferred to the British crown in 1857, an Official Director (Government Director of Railways) was appointed to join the Board of Directors of all Railway Companies. The Director enjoyed veto powers and held extensive authority, sanctioning indents and purchases. The financial policy and other important matters were referred to the Secretary of State in London. With this began the relationship between the Government of India and the Indian Railways. As shown in Figure 6.1, this began a period of steady expansion of the Indian rail network.

6.2 This period from 1858 can be divided into four phases. Till 1869, the trunk lines were constructed and managed by private British firms under a public guarantee. For the next ten years or so, the GOI (Government of India) constructed and managed state railways. The longest phase was the third starting in the 1880s, where GOI was majority owner of the lines and private firms were in charge of construction and operation, a type of PPP. Finally in 1924, GOI began taking over railway operations. However, this broad phasing had significant regional variations. The three railways in the north (collectively referred to as military lines) were merged and GOI decided to manage their operations after the outbreak of the Afghan War. Similarly, the Southern Mahratta system and the Bengal Nagpur Railway were designed to alleviate famines, following the recommendations of the Famine Commission. The choice of cities for stations was also affected by military and strategic concerns.

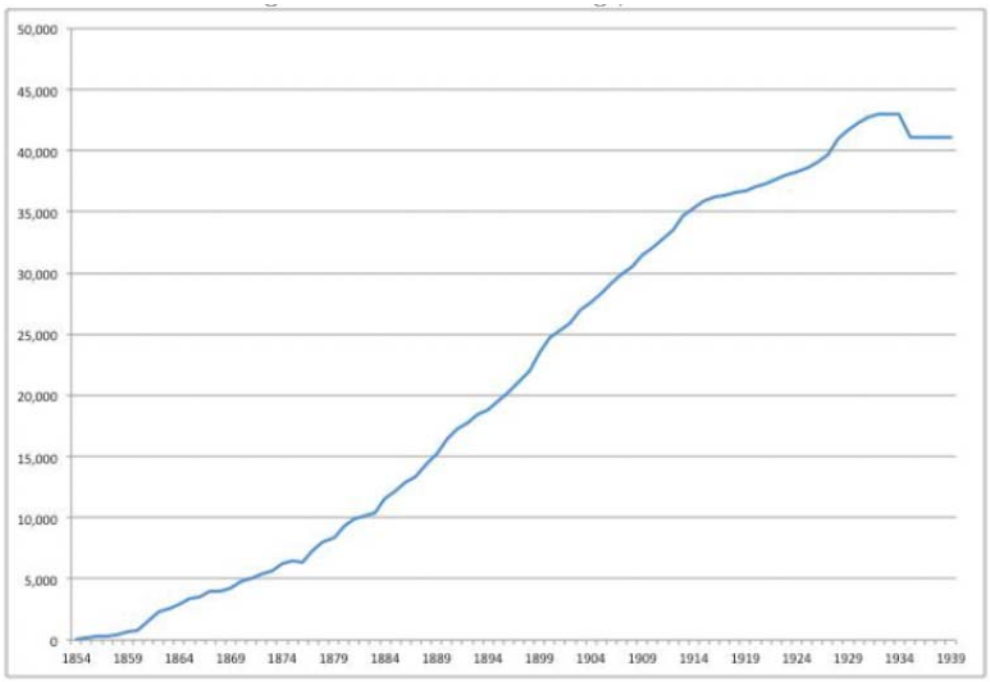
6.3 Even in the first phase, decisions on the route and gauge were made by GOI, which also had supervisory powers over construction and operations. Under a 99-year contract, with options for purchase starting the 25th year, the private firms (an overwhelming majority of the shareholders were from the UK and financing was all through equity, not debt) were "guaranteed" a 5 percent return at a fixed exchange rate, i.e., both risks were covered. The guarantee was not theoretically one-way. Each Railway paid its net earnings, i.e., total receipts less working expenses, into the treasury (the current consolidated fund), which, it then received back. If its earnings were less than 5% in any year, GOI added the remainder, but these top-up payments were returnable. Whenever its earnings exceeded 5%, the Railway was supposed to transfer half the excess over 5 % to GOI, till all such guarantee payments were extinguished. Thus, it was like a revenue-shortfall loan, at a certain level. The GOI enforced and administered the contracts.

6.4 Even at that time, this structure was contested. In the opinion of the finance member of the

[36]Much of this section draws heavily from Bogart and Chaudhury (2012).

Viceroy's council, S. Laing, this structure took away the benefits of the private sector because "no adequate motive existed for restraining the outlay on the works".[37] As feared, the costs on the initial lines were almost GBP 20,000 per mile, about two-thirds more than the original estimate. Consequently, as traffic growth was slow, and the rupee depreciated by about 10%, the GOI made guarantee payments of GBP 30 million by 1869 to these firms. In 1869, the Governor-General, Sir John Lawrence, stated: "The Government of India has for several years been striving to induce capitalists to undertake construction of railways in India at their own risk, and on their responsibility with a minimum of Government interference. But the attempt has entirely failed, and it has become obvious that no capital can be obtained for such undertakings otherwise than under a guarantee of interest, fully equal to that which the Government would have to pay if it borrowed on its own account." So, in 1870, as yields on GOI bonds dropped below 4%, it borrowed, constructed and operated Railway lines. Since the initial private firms owned and operated the trunk lines, these were what could be called secondary lines. To save construction costs, many of these were metre gauge.

Figure 6.1: Track Kilometres of Indian Railway System 1854 to 1939



Source: Bogart and Chaudhury (2012)

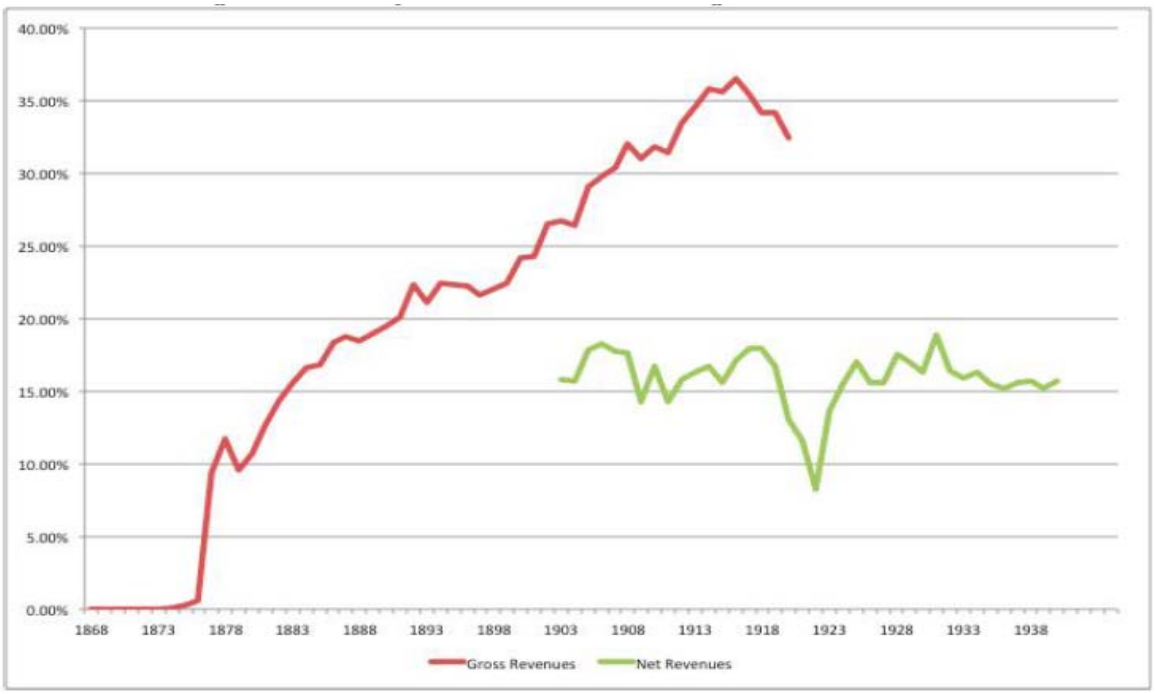
6.5 Starting in 1880, GOI started to resume ownership of the initial group of private Railways. In 1880, GOI purchased 80% of the shares in East Indian Railway, though a new private company, which had the remaining 20% would manage operations under a new 25-year contract. Over the next ten years, five more Railways would be taken over and the others

[37] Bell (1894), pp. 65-66, quoted in Bogart and Chaudhury (2012).

were completed by 1908. For five Railways, a private concessionaire, like in East Indian, operated the Railway, but for three, viz., Eastern Bengal, Sind, Punjab and Delhi, and Oudh and Rohilkhand were managed by GOI. For these three, surpluses were paid into the treasury and capital was provided through annual appropriations from the GOI budget. After the 1880s, this structure of GOI ownership and private operation was adopted for all new Railways, but with varied contractual terms. In some case, like Bengal Central, the guarantee was 5%, but only for 5 years, while in others, like Rohilkhand and Kumaon, there was an annual subvention of Rs. 40,000 for 10 years after construction, in addition to a 4% guarantee during the construction phase. Profits were shared with GOI, which was the majority owner, in proportion to its share of capital.

6.6 The Railway companies were also substantially reorganized. Many were merged with one another, while in some cases, larger Railways managing the trunk routes were asked to manage the operations of the branch or feeder lines into their network on a profit-sharing basis. In such cases, the accounts of the principal Railway would often include information on such worked lines, regardless of ownership. The GOI's growing involvement with Railway construction appears to have made it more confident. It organized Railway conferences, introducing a code of general rules for the working of all lines, including agreements for the interchange of rolling stock, a uniform classification of goods, and accounting standards. There was even a special committee for standards and research. In 1905, concomitant to its separation from the public works department, the Railway Board was constituted in 1905 to determine Railway policy, such as network extensions, new lines and managing operations on existing lines.

Figure 6.2: Railways revenue as a share of overall GOI revenue



Source: Bogart and Chaudhury (2012)

6.7 During this period, however, company-operated Railways had to secure GOI approval for capital investment, since the Railway budget was part of the general budget. This dependence on the overall budgetary situation led to allegations of undercapitalization, even though Railways revenues had risen by the end of the First World War to over a third of general government revenues. Finally, in 1921, the Acworth Committee, appointed in view of the upcoming renewal of the contract with East Indian Railway, recommended a separate Railway budget, in exchange for contributions to the general revenue, i.e., the dividend, largely in order to preserve the commercial character of the Indian Railways. Indian Railways had thus come full circle, from a guarantee receiving private firm to a dividend paying part of government. As shown in Figure 6.2, after working expenses, net Railway revenues accounted for about one-seventh of GOI revenues in this period. While the Indian Railways' commercial orientation is now very much contested, and Railway dividend revenues are not a significant source of GOI revenues, the separate Railway budget is a practice that continues till date.

International Experience

6.8 Internationally, it is not uncommon to find government support for Railways; actually, the opposite is true. This is true even for the United Kingdom, which underwent radical reform, separating the rail track from operating companies and allowing full private participation in operations (the track too was initially privatized, but subsequently it had to be brought back into public ownership), and establishing a rail regulator. Network Rail – the owner and operator of UK's national rail network and its infrastructure assets – depends on the British, Scottish and Welsh governments for about 60% of its income. Table 6.1 provides details on the relationship between government and the Railways in different countries. Tables 6.2 to 6.4 restate the information by nature of service and type of support.

6.9 As can be seen, government ownership, especially of track infrastructure is quite common; indeed the North American system of privately owned track networks is an exception. However, in some countries, the track may be on long-term lease to private firms, especially when it is for specialized traffic. For example, the Tier 3 grain freight lines in Western Australia have been leased to Brookfield Rail (and regulated by the Public Transport Authority). Consequently, there is also financial support from the government for these entities. This can come in the form of direct grants, both planned and occasionally, unplanned (when loans become un-repayable, as in Russia) and loans or as guarantees, implicit (as in China) or explicit, for market borrowings.

Table 6.1[38]: Support from Government to Railways in Select Countries

Country	Type of Financial support by Government
Australia	The Federal and the State Governments either individually or simultaneously provide substantial grants to most new major railway infrastructure projects on national rail network. Australian Rail Track Corporation (ARTC), a Federal government owned corporation which controls majority of standard gauge rail lines, receives an annual grant from the government. Public sector investments have been equally focused on expanding and upgrading the current network, particularly with respect to regional and interstate freight, and urban passenger rail.
Canada	The Canadian Government funds major passenger infrastructure used by state-owned passenger train operator, VIA Rail. The two main private operators – Canadian National and Canadian Pacific – must fund their own network infrastructure capital investment projects.
China	China Rail Corporation receives only modest budget support – generally less than 5 percent of capital spending – for new lines to remote areas. Revenue from railway users (including a construction surcharge additional to freight tariffs) is required to fund the rest. Loans are also extended by public sector banks. Freight transport users finance the major part of this amount.
Germany	The Federal Government funds majority of infrastructure investment. The Federal Government provides grants and interest free loans to DB Netz – the national Railway Infrastructure Management Company – for infrastructure replacement, upgrading and new construction, partly sourced from General Budget Account and partly from petroleum taxes.
Great Britain	Government funds 60% of total infrastructure costs including operating, financing and depreciation cost. Network Rail – the owner and operator of national rail network and its infrastructure assets – sources part of its income from UK, Scottish and Welsh governments.
Japan	Apart from Shinkansen (high speed) lines, the three major privately-owned passenger companies finance their own infrastructure. The capital investment on Shinkansen projects are borne by the national government (two-thirds) and local governments (one-third). A little more than half of the national government funding comes from the payments received from companies for use of existing Shinkansen lines (basically, payment by users) while the remainder comes from the Japan's General Budget Account. The railways are constructed and owned by Japan Railway Construction, Transport and Technology Agency (JRTT) and managed and operated by the companies. JRTT charges the passenger railway companies for the use of this infrastructure only what the company can bear from commercial operations.
Russia	Russian Railways (RZD) have mainly to fund their own infrastructure development programs but the Government does make equity injections (effectively grants) for special projects and general rail network infrastructure defined in a Federal Target Program but the actual level of funding currently provided for rail infrastructure is thought to fall far short of what is required to deliver that Program. Also, there are projects that are financed by a combination of public/private investments.
USA	The private companies must fund the great majority of their own infrastructure capital investment projects from customers on a commercial basis. However, the Federal Railroad Administration makes capital (and operating) grants to AMTRAK, the government-owned intercity passenger train operator, and to the Alaska Railroad, owned by the State of Alaska. It further supports passenger and freight railways through a variety of competitive grant, dedicated grant, and loan programs to develop specific safety improvements, relieve congestion, and encourage the expansion and upgrade of passenger and freight rail infrastructure and services that meet specific public interest objectives. The total amounts are however minor compared to commercial funding by the private freight railroads themselves.

[38]Collated from *MOR Discussion Paper* – Jan 16, 2015; *Recent Developments in Rail Transportation Services* (OECD paper); *Recent Developments in Rail Transportation Services* (OECD paper); and *Role of Government in European Railway Investment and Funding.*

Table 6.2: By Type of Financial Support from the Government

Type of Financial Support by the Government	Capital Investments			
	Fixed Assets	**Rolling Stock**	**Passenger**	**Freight**
Australia	Federal and State governments provide support either individually or simultaneously		Federal/State governments	Federal/State governments
Canada	Government invests in capital assets e.g.: The New Building Canada Plan	For Via Rail	Through Via Rail	
China	Less than 5% of capital spending directly provided by government		Government supports through Fiscal budget as well as by guaranteeing the debt financing of Railways. But majority of funds come from users via a construction surcharge.	
Germany	Federal government funds majority of infrastructure		DB Netz, a 100% subsidiary of Deutsche Bahn, is the single largest infrastructure provider. Federal government provides grants and interest free loans to DB Netz for this purpose	
Great Britain	Government funds 60% of total infrastructure costs		Network Rail, a state-owned company, provides and operates British rail infrastructure. It receives part of its funding from UK, Scottish and Welsh governments. Its debt are guaranteed by UK government.	
Japan	Apart from revenues, Shinkansen are funded by national government (2/3rd from Japan's General Budget Account) and local governments (1/3rd)		For Shinkansen	
Russia	Government does make equity injections (effectively grants) for special projects and general rail network infrastructure defined in a Federal Target Program	Russian government funds acquisition of rolling stock partly	Russian government funds RZD partly on a project to project basis	
USA	Federal Railroad Administration makes capital grants to AMTRAK (government-owned intercity passenger train operator) and Alaska Railroad (owned by the state of Alaska)		Support through a variety of competitive grant, dedicated grant and loan programs	

Table 6.3: By Type of Financial Support from the Government

Type of Financial Support by the Government	Public Service Obligations		Operation and Maintenance	
	New Lines	Maintenance	Passenger	Freight
Australia	Federal/State governments	Federal/State governments	Federal/State governments	Federal/State governments
Canada	Through Via Rail	Via Rail operates 4 maintenance facilities	Via Rail	
China	Government will fund railways built for social reasons (a media report on August 2, 2013)			
Germany	DB Netz, a 100% subsidiary of Deutsche Bahn, is the single largest infrastructure provider. Federal government provides grants and interest free loans to DB Netz for this purpose			
Great Britain			Through Network Rail	
Japan			For Shinkansen	
Russia	Russian government funds RZD partly on a project to project basis			
USA	Through AMTRAK	Through AMTRAK	Federal Railroad makes operating grants to AMTRAK and Alaska Railroad	

Table 6.4: By Type of Financial Support from the Government

Type of Financial Support by Government	Government-owned				Others
	Long distance passenger service	Long distance freight service	Urban/Suburban service	Production utilities	
Australia	Some operated by Government e.g.: Queensland Rail	Some operated by Government e.g.: Queensland Rail	Some operated by Government e.g.Sydney Trains	Government owns some including ARTC	Govt owned ARTC controls majority of standard guage lines
Canada	Via Rail	Two major private operators - Canadian National and Canadian Pacific	Via Rail provides rapid intercity services		
China	State-owned	State-owned	State-owned	State-owned	
Germany	State-owned Deutsche Bahn, its subsidiaries and business units provide all these services				DB Netz a monopoly is assigned to state authorities: the Federal Railway Authority and Federal Network Agency
Great Britain				Network Rail	
Japan	For Shinkansen			Japan Railway Construction, Transport and Technology(JRTT)	
Russia	Provided by RZD – an SoE				
USA	AMTRAK		Alaska Railroad, state of Alaska		

6.10 While support for track infrastructure obviously supports both freight and passenger services indirectly, additional direct support is also provided for passenger rail in many countries. In some cases, there may be competitive bids for the provision of passenger train services, which is then funded from the budget. In the European Union (EU), some public funding decisions for passenger services are decentralized to sub-national governments. This enables closer match between locally perceived and politically expressed demands and available resources for the service. It can encourage these governments to find more cost effective methods of meeting their objectives. It also focuses support to intended targets and does not diffuse it across other parts of the Railway. There are also other ways of supporting operating firms. In Japan, the pricing of infrastructure is adjusted to reflect the payment capacity of the operating companies. However, internationally, the direction is to move towards a rule-based relationship between the government and a broadly commercially-oriented Railways, rather than open-ended financial support.

6.11 The restructuring of the European Railways is a good example of rule-based relationships between the government and Railways, especially publicly-owned rail companies. The core concern was not only budgetary (though the declining share of Railway in freight transport and accumulated deficits in Railways ranging from 2% to 5% of GDP were a concern), but the need to ensure fair competition across different national providers in a Europe-wide rail network. The main directive for restructuring the European Railways was 91/440/EEC. The box provides highlights from the restructuring process, focused on the relationship between the government and rail companies.

6.12 Broadly, in Europe[39], ten years after the restructuring, public contributions to Railways were split between supporting passenger train operations in compensation for public service obligations (27%); capital investments (some of this could be track renewals, which could be classified as maintenance) in infrastructure and special funds for high speed lines (26%); and operations and maintenance costs of rail infrastructure (20%). The remaining support was for debt servicing and staff, especially pension costs. These pension obligations arose because Railway workers in many countries were employed as civil servants. As part of the restructuring process, EU regulation 69/1192/EEC allowed public budget contributions to cover excess costs attributable to their earlier status. [40]

[39]These numbers are from 2001. See Perkins, Stephen (2005) "Role of Government in European Railway Investment and Funding", paper presented at ChinaRailwayInvestmentandFinancingReformForum, Beijing 2005

[40]As such, Railway employees enjoyed more generous pension allowances and earlier retirement than average industry workers. In some railways retirement dates were brought forward in the past in place of pay increases, in order to defer demands on public budgets

Box: Relationship between the Government and Rail Companies in Europe

Directive 91/440/EEC covered three key areas:

- **Restructuring deficits** to put railway companies on a viable financial footing and maintain financial sustainability, specifying the kinds of public budget contributions permitted for reducing the indebtedness of railways;
- **Unbundling of services**–starting with separation of accounts for infrastructure and train operations but subsequently extended by Directive **2001/12/EC** to separate freight from passenger accounts;
- **Introduction of track access rights to enable competition for freight services**–initially in an extremely limited way but subsequently extended (by Directives 2001/12/EC and **2004/51/EC**) to cover all freight services both international and domestic. European Commission proposals for introducing track access rights for passenger train operators are now under examination.

Two further regulations on the financing of rail operations concern public service obligations. PSOs are defined as a government requirement for a train operator to provide services (often with regulated tariffs) that would not be operated if the train company were acting solely in its own commercial interest. Regulation **69/1191/EEC** defines the public budget contributions permitted by EU law for the support of rail passenger services and requires compensation for public service obligations to be adequate. In 1991, in conjunction with Directive 91/440, the rules were complemented with regulation **91/193/EEC**. This requires PSO compensation to be provided for by a contract (rather than budget transfers to regularize accounts at the end of the financial year) and it imposed accounting separation between PSO operations and commercial services. In July 2005, the Commission proposed a long awaited amendment to regulation 69/1191/EEC that if adopted [Note: *this has since been adopted in July 2007*] will make competitive tendering compulsory for the award of PSO contracts for suburban train services in the interests of efficiency. As an alternative, Governments will be allowed to contract these services to a dedicated local operator that will not be allowed to compete for contracts elsewhere. For the time being inter-regional services supported by PSOs are exempt from this proposed competition for the market.

State aid to infrastructure is permitted under a specific regime, subject to EU regulation **70/1107/EEC** on the granting of aids for transport by rail, road and inland waterway. This allows various types of public budget contributions to support operating costs for the management and maintenance of infrastructure and for capital grants for investing in infrastructure.

Aid to train operating companies requires approval from the European Commission's competition authorities. Such support has been approved in recent years on the basis of once only payments to support restructuring in the transition to a competitive market environment. This was the case for example in March 2005 when the French government obtained approval to contribute €800 million to SNCF to restructure its freight business over a three year period. The financial discipline formalized in EU Directives and regulations has been reasonably successful in putting European train operating companies on a more financially sustainable path.

Source: Extracted from Perkins, Stephen (2005) "Role of Government in European Railway Investment and Funding", paper presented at China Railway Investment and Financing Reform Forum, Beijing 2005

Relationships with the Union Government

6.13 The budget is the Government's key policy document of all planned revenue and capital expenditure. The budget is necessary for planning, decision making and judicious allocation of resources. In IR, the Railway Budget is presented by the Minister for Railways to both Houses of Parliament separately from and ahead of the General Budget. The Railway finances were separated from the general finances of the government through a 'Separation Convention' in 1924 as per the recommendations of the Acworth Committee. Though the Railway Budget is separately presented to Parliament, the figures relating to the receipts and expenditure of the Railways are a part of the total receipt and expenditure of the Government of India. The efficiency of the budgeting process prima facie depends on the realistic assessment of the expenditure and earnings, so as to ensure optimum utilization of funds. While allotting funds to each zone, the Railway Board moderates the requirement of each zone on the basis of the availability of resources. Therefore, any deficiency with regard to the accuracy of the estimates resulted in excess expenditure/surrender of allotted funds.

6.14 The roots of the problem have been alluded to in Chapters 1 and 3 and also stated towards the beginning of this Chapter. Stated simply, IR spends so much on revenue expenditure that it is unable to invest in capital expenditure. 46% of the resources for financing plan expenditure in 2014-15 came from budgetary support, 3% from the Railway Safety Fund, 23% from internal resources and 27% from extra-budgetary resources.[41] The focus of this Chapter is on the budgetary part and also on what can broadly be called "social cost". The roots of budgetary support go back to the Separation Convention of 1924. IR became financially independent, but only partially. (For instance, as a Departmental Undertaking, it is not independent on wages and pensions either. But that is discussed elsewhere in this Report.) Dividends are paid because of the capital that the Union government has invested in IR. In other words, the budgetary support from the Union government is not for revenue expenditure, but for capital expenditure and the creation of assets and this is treated as a loan in perpetuity, with the capital-at-charge accounted for at historical values of the assets. Dividends, fixed by the Railway Convention Committee of Parliament, are interest paid on that perpetual loan, the principal never being extinguished.[42] On the face of it, the rate of dividend now paid is 5%. However, this requires a qualification. There are exemptions from the general rate of dividend and some subsidies are claimed back. Hence, for 2014-15, "the effective rate of dividend payable to MOF (Ministry of Finance) works out to roughly 2.5% of the dividend bearing capital-at-charge".[43]The capital-at-charge excludes certain identified items like capital expenditure on national projects and

[41] *Indian Railways, Lifeline of the Nation,* White Paper, Ministry of Railways, February 2015. These are the BE figures for 2014-15. Extra-budgetary resources include the IRFC channel.

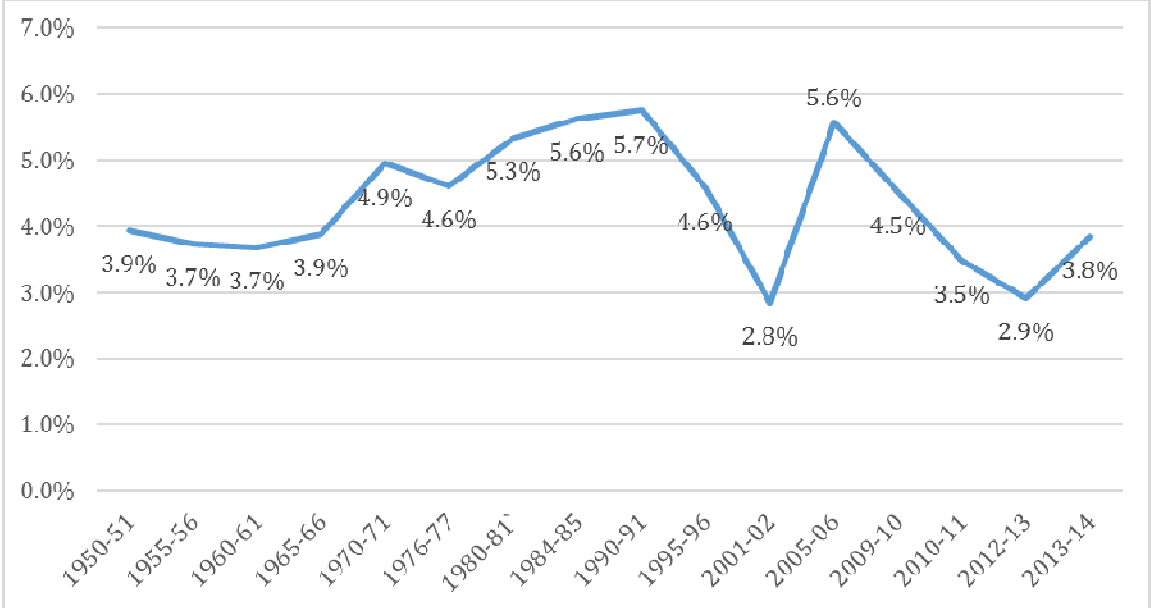
[42] There are minor exceptions to this. The capital may be amortized, or there can be write-back adjustments. But these are minor.

[43] White Paper, *Ibid.*

strategic lines on which dividend is not required to be paid. Seen this way, the true grant to IR from GOI is therefore not the entire extent of budgetary support, but the difference between what the GOI's borrowing cost and the return it gets from IR. At current levels of GOI bond yields, of 7.5% to 8%, this would imply an amount of roughly 3% to 3.5% of the capital-at-charge, approximating to about Rs. 6,000 to 7,000 crores annually.

6.15 In addition, support to the PSUs within IR has also in the past been routed through IR. To that extent, the support from GOI is not just to IR but to separate entities. For example, of the Rs. 40,000 crores from GOI in this year's budget, Rs. 9318 crores is for the Dedicated Freight Corridor Corporation Ltd and Rs 1165 crores for different metro Railway projects. External loans for Railway projects implemented by Railway PSUs are thus currently being routed through the Railway budget. This tends to crowd the fiscal support space available to the Railways. In the past, loan agreements were revised to provide for disintermediation of the support, thereby enabling the external assistance to be routed directly to the project companies. Previous committees, the latest being Planning Commission (2014)[44], have recommended disintermediation. This Committee agrees with and reiterates that position. It is recommended that all future external borrowings should be received directly by the Railway PSUs and the ongoing loan agreements may also be revised to give effect to such dis-intermediation. This would become even more important as the process of restructuring IR and its separation into the Railway Infrastructure Company and other operating companies is put into motion. Subsequent to accounting reforms, this would give a true picture of the nature of financial support being extended by GOI, which can be gradually altered over time, as noted later. This is in conformity with the reforms recommended for Railway PSUs in Chapter 3.

Figure 6.4: Dividend as share of capital at charge



Source: Indian Railway Budget Statements

[44]Planning Commission (2014) Report on Creative Financing for Indian Railways.

6.16 On the other hand, the social service obligations of IR are estimated at around Rs 25,000 crores every year.[45] This is because passenger and freight is carried at rates that are below cost. Indeed, because of what will be said about costing and accounting principles in Chapter 4, this figure is no more than indicative. "Reimbursement of this cost has been considered by Government and a Committee of Secretaries had recommended that these be reimbursed to the Railways, but still remains unresolved." [46] It is not clear why this definition is appropriate, since the tariffs for services are decided by IR itself, and it can be argued that IR has the authority to raise tariffs to meet cost. In the social service obligation costs computed by IR, figure: (a) essential commodities carried at lower than cost – fruits and vegetables, organic manure, paper, charcoal, bamboo, raw and pressed cotton, raw wool, sugarcane; (b) concessions on passenger and other services, such as second class and suburban traffic; (c) operation of uneconomic branch lines; (d) new lines opened for traffic. On (b), it is necessary to point out that such losses are not only because of suburban and non-suburban passenger fares being low. There is a long list of individuals who are eligible for concessional fares – recipients of gallantry awards, national sports awardees, participants in sports tournaments, teachers who have won national awards, Shram awardees, war widows, patients suffering from some diseases, handicapped people, press correspondents, film technicians and postal traffic, transportation of registered newspapers and magazines and traffic to the North-East.[47]

6.17 Other than the broader issue, to which we will return in a moment, it is surprising that IR continues to use the expression "branch line", when no such concept exists any more. Today, as has been mentioned in Chapter 1, at least so far as broad gauge is concerned, lines are classified from A to F, depending primarily on the speed that these lines can sustain. For example, "A" can handle maximum speeds up to 160 km/hour, "B" 130 km/hour, "D" 100 km/hour and "E" and "F" only less than 100 km/hour. "C" lines are used for suburban traffic. The expression "branch" line is really a historical legacy and this Committee does not feel that such imprecise expressions should be used any longer. The historical legacy is based on the way railways were constructed in India in the 19th century and the guarantee that was first extended to the Indian Branch Railway Company in 1862. This company was meant to construct feeder lines to the main routes. There were similar other guarantees, extended not only to "branch" lines, but also to railways operated by District Boards and Princely States. Such expressions should henceforth be restricted only to metre and narrow gauges, re-designated perhaps as heritage routes, as has been done in some countries in the world, including the United Kingdom. Returning to broad gauge, what is the difference between (c) and (d)? It will be recalled that in Chapter 1, this report spoke about a Railway Infrastructure Company, which publicly owns all track-related infrastructure. There are capital costs associated with creating new tracks, an important consideration from the point of view of integrating the country

[45] *Ibid.*
[46] *Ibid.*
[47] See *Indian Railways Year Book 2013-14*, Ministry of Railways.

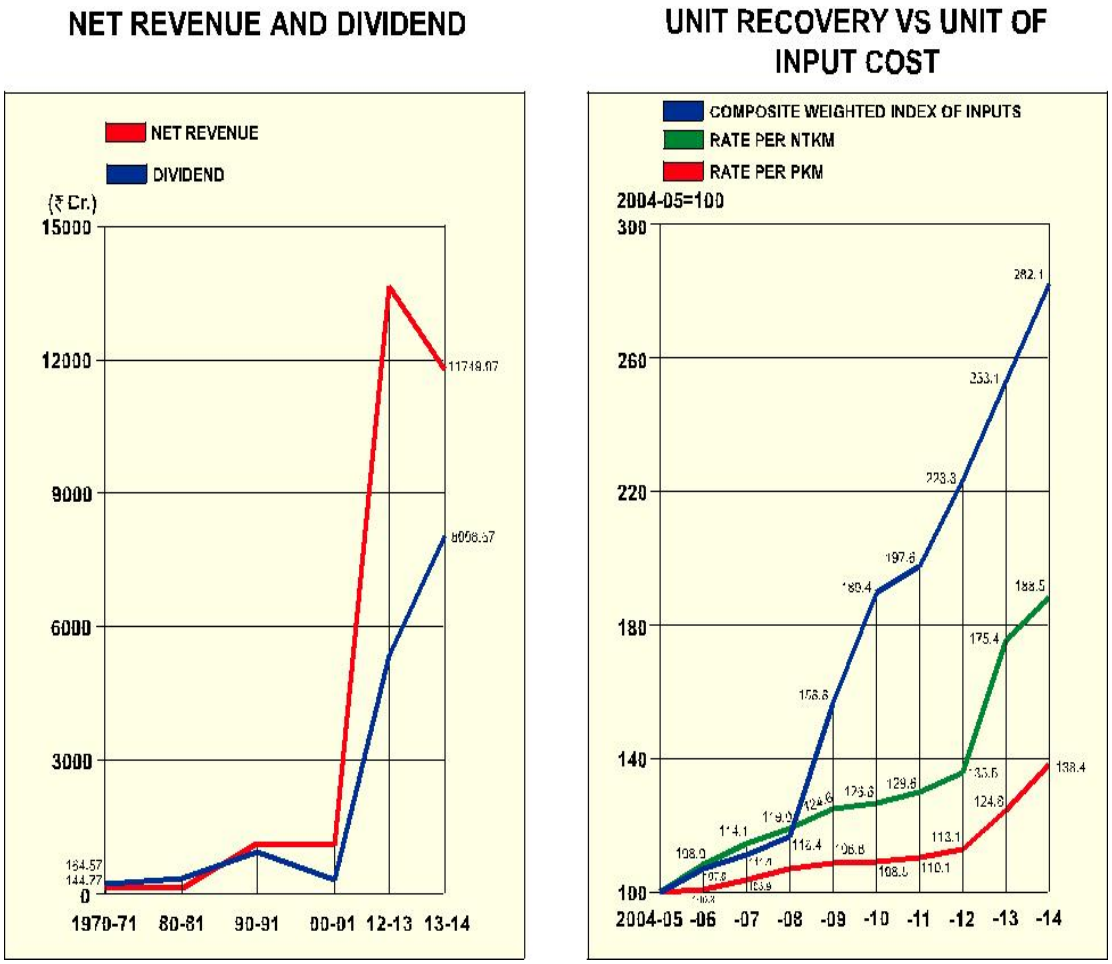
and providing all citizens with transport connectivity. That objective cannot be lost sight of. To some extent, the Union government bears the capital costs of building these new lines, but what the right hand gives, the left hand takes away, in the form of dividends. To recapitulate what was said in Chapter 1, IR projects are now divided into seven categories - national projects (A1), projects on cost sharing basis (A2), critical projects (A3), sub-critical projects (A4), important projects (A5), other projects (B) and least important projects (C). In terms of bearing the capital costs on such new lines, one is presumably after categories A1 and A2. While the Union government continues to bear the capital costs through gross budgetary support (GBS), that GBS is earmarked for projects that are deemed to be nationally important and IR has limited degrees of freedom in determining what that GBS is meant to be used for. It is ring-fenced, so to speak. However, the GBS keeps adding to the capital-at-charge and thus to the future dividend liability. Apart from everything else, the system is not transparent.

6.18 However, there are many patently valid PSOs (public service obligations) that IR does bear. The clearest example of this is the support for investment in national projects and strategic lines, such as those in the Jammu and Kashmir and the Northeastern states. Conversely, operating losses (if they were to occur even with efficient operation) on these lines, should also qualify as PSO. Likewise, on suburban commuter lines, it is possible that their large externalities, both economic and environmental, as an efficient public transport mode, would require them to be operated below cost to maximize the social benefit. Currently, they are not seen as such. Indeed, in order to build a disincentive against construction of uneconomic lines, the Sarin Committee in 1985 argued that general (as distinct from Railway) revenues should bear 75% of the annual loss. A decade later, the Tandon Committee[48] stated that the Railways should be allowed to eliminate uneconomic activities or be directly subsidized for these activities. Even the Expert Committee in 2001 argued for subsidy for un-remunerative lines. In Chapter 1, the Committee has recommended that a regulator, the RRAI, should determine the extent of PSO through a consultative regulatory process. While this would require that the accounts be restructured appropriately, a preparatory beginning can be made in that respect by identifying possible operations that could qualify under this rubric and separating them. Initially, these can be clearly identified branch lines and the suburban network. Indeed, even today, IR, and especially constituent Railways such as Central Railway, does make an attempt to separate the expenditure on the suburban networks, through an elaborate and sincerely defined, though possibly flawed (in the absence of accounting reform), process of cost allocation. Similarly, the loss in revenue in terms of the tariff reductions, i.e., concessional fares, offered to a large class of identified passengers, such as senior citizens and differently abled persons (but also including a number of other categories that are harder to justify) is clearly recognized and separated. Though, given that increases in passenger fares have recently been few and far between, this amount is likely to be an under-estimate, it still provides a starting point of reference.

[48]Committee to Study Organisational Structure and Management Ethos of Indian Railways, chaired by Mr. Prakash Tandon, hereafter referred to as Tandon (1994).

Essentially, the decision to determine whether a particular service is a public service obligation is political, to be decided initially by the Ministry of Railways (as distinct from IR) and then by the Cabinet. It is not technocratic in nature. The determination of the associated additional expenditure is however technocratic and this exercise is likely to be long-drawn and contentious. In the view of this Committee, pending the establishment of RRAI, this exercise should begin forthwith. This will enable the RRAI to be tasked with clear terms of reference on PSOs, with an initial methodology and starting point that has already been agreed between IR and GOI.The direct expenditure on PSOs may also reduce if the recommendations of this Committee to separate out the suburban business (and other low usage branch lines of importance to state governments) as a joint venture with the state government is followed through. However, the determination of the exact amount will be a decision of RRAI, as discussed in Chapter 1.

Figure 6.5



6.19 Returning to the link with the Union Budget, the idea of a clean separation has been talked about for some time and has figured in the deliberations of both the Sarin Committee and the AV Poulose Committee. For instance, the Poulose Committee spoke about a "Charter for Indian Railways", which can also be thought of as a MOU between the Union

government and IR. As one part of that MOU, not the only part, one can thing of an extinguishment of any debt that is more than say 30 years. In addition, there are possibilities of setting up an amortization fund by contributions from the Union government. Whatever debt remains, after extinguishment, can be converted into part equity infusion by the Union government. There are several possibilities. For the moment, this Committee only recommends that the GBS and dividends both need a rethink. By the same token, if there are capital costs concerned with constructing new suburban lines, those belong to the A2 category mentioned above and should only be undertaken as joint ventures with State governments, not otherwise. That is the reason the title of this Chapter mentions governments in the plural, rather than in the singular.

6.20 The reason we flagged the important conceptual difference between (c) (uneconomic branch lines) and (d) (new lines) is the following. For the record, the Sarin Committee spoke about 88 unviable branch lines and IR now talks about 90 uneconomic branch lines. Once the capital costs have been taken care of, what does it mean to say that a "branch" line is unviable? Are there fixed costs associated with such lines? There will indeed be minor fixed costs. But what this really means is that the operation of trains (primarily passenger) along these lines is unviable. This is more of a problem for train operators, including IR, and less of a problem for the Railway Infrastructure Company. This Committee does feel that operating losses (for train operators) must be borne by governments. So far as the Union government is concerned, this must be reflected in the MOU that is signed between the Union government and IR. As an example, to start with, the operating losses can be shared on a 50/50 basis. However, one must realize that in the template this Committee is proposing, train operators will not exclusively be IR alone. Therefore, a similar compensatory mechanism must be evolved for private train operators too, along the lines suggested in Chapter 1.

6.21 Why are train operations, especially passenger traffic, likely to be unviable? That's because of the present fare structure. As in the case of other utilities, there is no reason for low user charges across the board, even if that is for suburban fares or second class travel. Indeed, a survey showed that few of those who travel on suburban railways are poor and few pay for their own fares (costs are borne by employers).[49] This Committee realizes that the question of increasing fares must be linked with the quid pro quo of improving passenger amenities and has indeed endorsed this view in Chapter 1. Having said this, in other sectors, it is recognized that subsidies should be targeted towards those who need them. A beginning has been made by using Aadhaar and embedding lists of beneficiaries with these Aadhaar numbers. There are minor issues, such as the non-inclusion of those who are under 18 in the Aadhaar list. But as of now, out of the 18-plus population, 786 million people possess Aadhaar numbers. Therefore, this Committee sees no reason why Aadhaar numbers should not be asked for when passenger tickets are purchased, even for those who travel unreserved. This should not be difficult to do,

[49] Shashanka Bhide, Saurabh Bandyopadhyay and Palash Baruah, *Understanding Passenger Demand for the Indian Railways*: *Issues and Perceptions in a Socio-Demographic Framework*, NCAER, August 2012.

though IR's present database only satisfactorily tracks those who travel reserved, less than 5% of those who travel. But this Committee has also made recommendations about improving IT-usage.

6.22 Unremunerative lines and unremunerative trains are in the nature of collective goods. Conceptually, a subsidy is an individual good and should only be directed towards those who are BPL (below the poverty line). As of now, the track record of embedding Aadhaar in subsidy beneficiary databases is mixed, with the exception of LPG subsidy in some States. But these are early days and one should also flag that a large number of Jan Dhan Yojana accounts have been opened. Therefore, somewhere down the line, it should be possible for subsidies on passenger fares to be reimbursed directly into bank accounts, for those who are targeted BPL. This Committee does not believe that this is something that can be done today. But it is certainly worth considering as a terminal goal. As a counter-argument, it is also true that subsidies work best when they are self-enforcing. Instead of going via the BPL route, it might be better to subsidize only for unreserved second class, on the grounds that this makes it self-enforcing. But the basic point being made is the following. There is no call for these subsidies to be borne by IR. They must be borne by the Union government. In addition, there is the question of suburban fares, the domain of resistance by State governments. As we have argued in Chapter 1, suburban railways should ideally be hived off to State governments, via the joint venture route. Until this is done, the cost of low suburban fares, if these fares are not increased, must be borne by State governments on a 50/50 basis, with MOUs signed with State governments for this purpose.

6.23 Two additional points need to be made about the individual concessions mentioned above. First, there are other channels at the Union government for meeting these passenger concessions – Ministry of Education (student concessions), Ministry of Personnel and Social Welfare (senior citizens), Ministry of Sports (sportspersons), Ministry of Defence (war widows) and the Postal Department (postal traffic). It is not clear why this responsibility devolves on IR. Second, in the area of freight, who determines the definition of essential commodities? Indeed, through the GST agenda, there has been an attempt to standardize and unify indirect taxation, based on the premise that this reduces discretion and transaction costs. The same logic applies to freight. This Committee strongly feels that freight rates should be left to market principles, once liberalization takes hold, and no such freight-related social cost should be imposed on IR.

6.24 The debate about IR being a commercial entity vis-à-vis catering to social objectives goes back to the 19th century. IR is being exposed to competition and this will become even more acute if the liberalization ideas outlined by this Committee are accepted. Therefore, IR needs to be left unfettered to function according to commercial principles. This does not mean that there are no social obligations. There will be, not just for IR, but also for private operators. But those social objectives and their costs need to be cleanly separated from commercial considerations. This is what this Chapter means by cleaning up budgetary relationships between governments and IR.

6.25 IR on one hand receives Gross Budgetary Support for expansion of its network from the Central Government Exchequer, while on the other hand it has to pay a dividend to the Government on the capital at charge (inclusive of the GBS of the previous years). This leaves very little for IR apportion to its Depreciation Reserves Fund, thereby accumulating arrears in asset renewal. This has led to a situation where IRs asset renewal is also being funded to an extent through market borrowers. IR is thus paying interest even for its assets renewals. This Committee recommends that the Central Government review the dividend policy for IR and provide it with a GBS net of the dividend payment. This would enable the IR to apportion more money to its DRF for asset renewal aligned to its arising. The Gross Budgetary Support provided from the Central Exchequer to IR and IR's dividend payment to the Central Exchequer in the recent past is shown in Table 6.5.

Table 6.5 **(Rs. in crores)**

Year	**Gross Budgetary Support**	**Total Dividend paid**
2007-08	8860	4903
2008-09	10319	4718
2009-10	17980	5543
2010-11	19318	4941
2011-12	21073	5656
2012-13	25234	5349
2013-14	28174	8009
2014-15 (BE)	31596	9135
2014-15(RE)	31596	9174
2015-16 (BE)	41646	10811

Charting a Way Forward

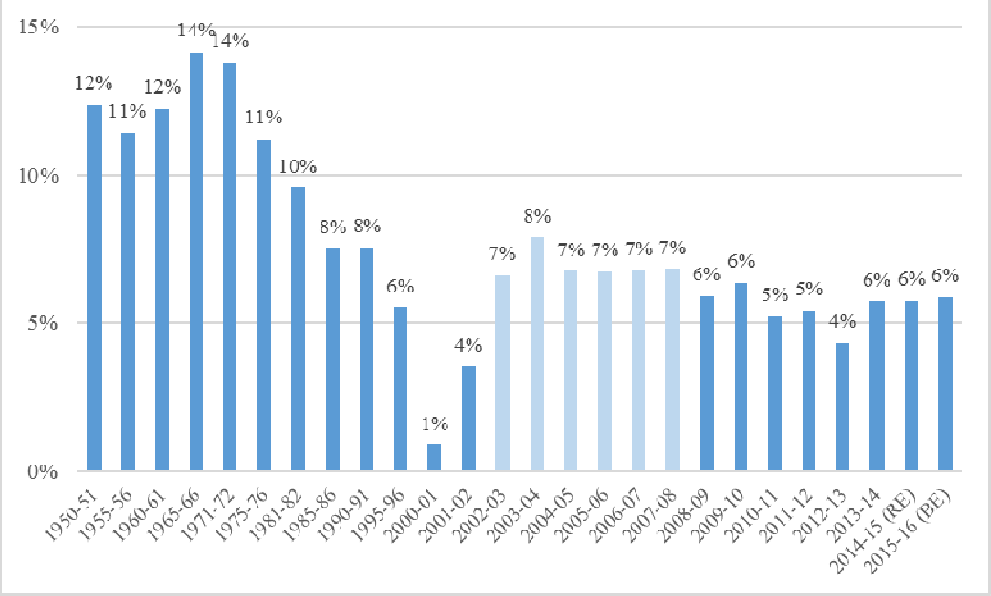
6.26 The funding of Railways from government can be seen as, in principle, as going through the following stages. In the **first** stage, the government pays for both capital and operational expenditure, which includes public service obligations (PSO), in a situation where operating losses exist. In the **second** stage, the government only funds capital expenditure and PSO. In the **third**, the capital expenditure is raised as a loan from the market, possibly supported partially through government guarantees. In the **fourth** stage,

the government only meets the PSO obligation, which is determined through a regulatory process and finally, in the **fifth** stage, the PSO obligations are bid out among multiple service providers to minimize subsidy. Currently, it is difficult to judge where IR stands. It has elements of all the first three stages. It appears to be in stage two, but in the absence of accounting reforms (discussed in Chapter 4), it is difficult to assess what the true financial picture is – whether GOI is meeting only capital expenditure, or whether it is also meeting a part of operational expenses, which would need, inter alia, an appropriate allocation for depreciation. Concomitantly, it also borrows money from the market, through IRFC, to meet its rolling stock investments, which is a feature of stage three. However, none of these claims can be made with much certainty, given the accounting system and cost allocation of IR. The recommendations of this Committee made in Chapter 4, which call for an accelerated transition to accrual accounting, within a two-year time frame, should be able to bring clarity to this situation in a limited period of time. As already noted**,** within the next two years, in the view of this Committee, it should be possible to clearly specify the costs to IR of various activities and therefore separate out the following: (a) investment on specified projects (this is already available); (b) expenditure on identified strategic operations and (c) expenditure on PSOs.

6.27 At present, the Railways' dividend, which has the character of interest on a perpetual loan is from IR's internal generation, which would otherwise fund critical O&M and safety needs. The budgetary support received from GoI, on the other hand, is spent on capital infrastructure, such as new lines, gauge conversions, etc. The payment of dividend and the receipt of GBS are, therefore, not operationally neutral and also substantial. As Figure 6.6 shows, it is currently about 6% of the gross receipts of IR.

6.28 Since the GBS adds to the capital-at-charge, the current transaction is similar to IR borrowing money from GOI to pay the dividend. However, if the 'dividend' is offset from GBS at source, the net support from the Ministry of Finance would remain the same, but it would provide flexibility to IR to use an amount equivalent to the 'dividend' for any operational purpose deemed fit and necessary. Notionally, such a change might be interpreted as a zero dividend scenario, which can give a negative impression. To address this, GOI should **(i)** clearly recognize the offsetting dividend amount while providing for GBS and communicate this as **(ii)** giving greater autonomy to IR, and **(iii)** the beginning of a process to align GBS from GoI more closely to resources needed for IR's PSO. The other possibility is for agreement to be reached between IR and GOI that from the GBS, an amount equal to the dividend be refunded to be (a) used for O&M and safety expenditure and consequently (b) the amount not be added to the capital-at-charge.

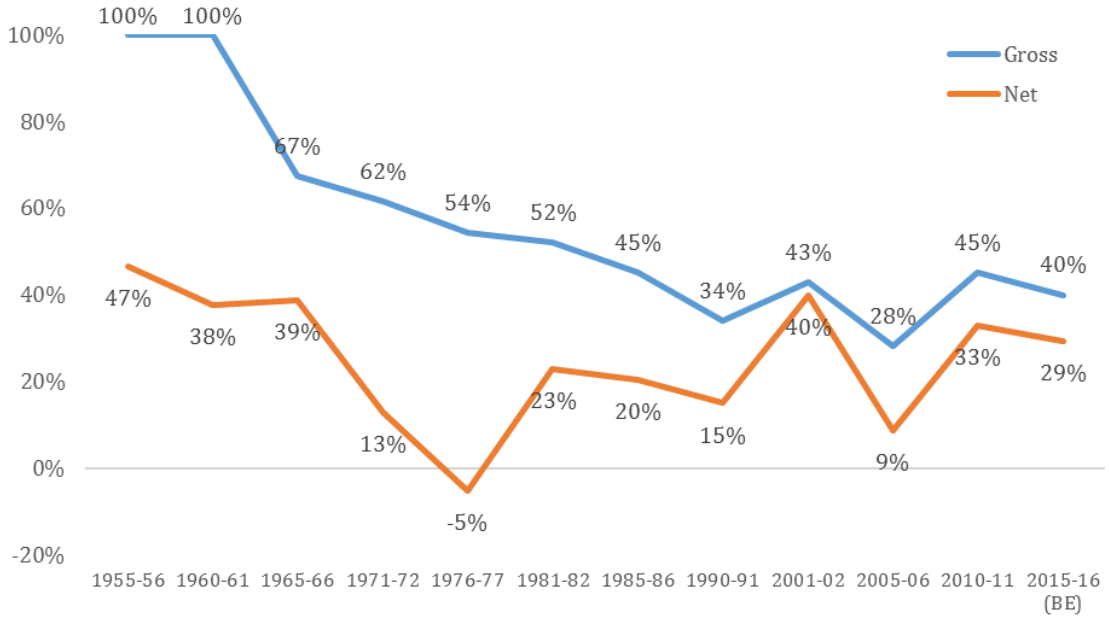
Figure 6.6: Dividend paid by IR as a share of Gross Receipts



Source: Indian Railway budget documents. The years in lighter shade include deferred dividend payments

6.29 As IR progresses through its restructuring, one of the recommendations of the Committee, in Chapter 7, is to implement projects through corporate entities to ensure that financing is pre-arranged and there is a focused completion effort. This too, will have implications for how support from GOI is structured. It can, as envisaged in stage 3, move to supporting borrowing by these project corporates, in line with the disintermediation of support from GOI, rather than given them budgetary grants. The Committee is of the opinion that is very important for GOI to provide funding for projects that are commercially viable to IR not in form of grants, but as loan guarantees, so that the corporate entity implementing the project is market-focused from inception. As Figure 6.7 indicates, the contribution of GOI to the capital investment programme of IR (as measured by its Plan Outlay) has been only partial, declining in gross terms and with variability, once it is netted for dividend payments. In recent years, this has been a third or even less. If contributions to entities like DFCC were also netted out, this contribution would drop even further. Thus, the restructuring of support from GOI will have only a limited impact on the capital investment programme of IR and a gradual phasing over the next five years should not result in any disruptive situations. To the extent that IR starts to implement new projects and restructure existing activities as joint ventures with state governments and other entities, this will also provide an opportunity to put support from GOI and other shareholders on an equal footing, as support for an identified corporate entity providing services. It is crucial in the interim to look at the financial assistance from the state governments to IR on certain specific projects. The recent increased fiscal transfer from Union Government to the State Governments has made this even more feasible. As already indicated, some of the projects in which such kind of funding from state governments be looked at involve the uneconomic branch lines and suburban passenger services.

Figure 6.7: Share of Net and Gross GOI support to IR as share of Plan Outlay



Source: Indian Railway Budget Statements

6.30 At this time, it is useful to recall that the Expert Group on Indian Railways, chaired by Dr. Rakesh Mohan in 2001[50] had noted the sharp decline in the share of budgetary support and internal resources has led to increased market borrowings and financial stress in IR. Leasing arrangements through IRFC had enabled additions to rolling stock; the effect of shortage of internal resources was therefore acutely felt on other replacements financed through the DRF, i.e., track renewals, bridges and other fixed assets resulting in adverse effects on train operations. IR faced great difficulties in the 1990s in raising the resources required even for its low investment levels and being forced to raise the levels of its public borrowing through IRFC, raised its overall level of resource costs. To ensure that this does not happen again, the investment priorities have to be refocused on remunerative projects, as discussed later in Chapter 7.

6.31 Once this transformation to loans is completed and the PSOs detailed, and the accounting reforms completed, it should be possible to determine which of the activities are loss-making and which are not. At that time, loss-making activities can either be re-classified as necessary and therefore should be funded as a PSO, or they can be discontinued in case they cannot be justified as a PSO. Finally, as the separation of track from services is completed, and multiple track companies and freight and passenger service companies emerge, it will become possible to bid out the PSO, both for capital investment and for service provision, on a minimum subsidy basis, as envisaged in stage 5 above. Both public operating company(ies) that will emerge from the separation of the Railway Infrastructure Company and new private operating companies could bid for providing this service. If any

[50] *The Indian Railways Report of the Expert Group on Indian Railways.*

lines are currently being operated inefficiently, such a competitive bidding process of such lines might be able to reduce the expenditure on PSO. With reference to the PSOs, a number of previous Committees have made similar recommendations. Sarin (1985)[51] saw concessional suburban fares as unsustainable and called for their rationalization. It marked certain uneconomic branch lines for closure and recommended that the loss in others be shared by respective State Governments. Lately, the Planning Commission (2014) recommended that such projects should be undertaken by IR only if 50% of the construction cost is financed by other entities such as the State Governments, CIL, SAIL or other bulk consumers. In such a situation, the Railway Infrastructure Company will be funding its investment through market borrowings (possibly with partial government guarantee, if needed), and there will be no need to make any budgetary transfers to the operating companies, except such payments for PSO that are determined through a competitive bid process. Like the proposed Essential Air Services Fund, this support can be through a separate Fund, if need be. As this process continues, in the opinion of this Committee, it should lead to a phase-out of the present system, involving a distinct Railway Budget, as part of a broader redefinition of the relationship between IR and GOI.

6.32 However, this requires detailed consideration of the phasing time frame, so that pressing investment, operations and maintenance (O&M) needs of IR continue to be adequately addressed. As noted in 2001 by Mohan (2001) in the discussion of the Strategic High Growth scenario, a minimum period of time (7 years in that report) of accelerating revenue growth was needed before IR could be able to stand on its own feet in commercial terms. The financing model envisaged there was a conditionality-linked multilateral loan with 30 per cent counterpart funding coming from GOI, as preference capital. The primary benefit of a dual loan cum preference capital programme is that it provides a means by which a reform-minded government can publicly commit to policy measures and send a signal that the reform programme is credible. The conditionality reduces the possibility of a reversal in the restructuring plan, and also mitigates against market uncertainties. Government support was seen as absolutely necessary during the initial phase of restructuring, with the High Growth scenario derailing in the absence of this support. In the report of the NTDPC[52] in 2012, ten years later, it was estimated that the share of internal revenue was likely to increase from 20% of the required funds during 2012-17 to 80% of the required funds towards the end of the period of analysis in 2032.

6.33 For effective competition between different service providers, it is essential that the Railway Infrastructure Company's legitimate capital investment needs are not shortchanged. In particular, for essential safety related work, this Committee reinforces the recommendation of the Kakodkar Committee[53] in 2012 to establish a non-fungible, non-lapsable safety fund, funded as a safety surcharge, with matching grant budgetary support. Indeed, this is

[51]The Railway Reforms Committee, chaired at the time of submission by Mr. Sarin 1981-85), hereafter referred to as Sarin (1985).

[52]*National Transport Development Policy Committee* (2014).

[53]*High Level Safety Review Committee*, chaired by Dr. Kakodkar.

similar to the recommendation of the Sarin Committee in 1985 to establish a Railway Special Fund (RSF) out of a special surcharge on passenger fare and freight rates.

6.34 Restructuring of financial relations between GOI and IR into a rule-based relationship will not happen overnight. However, it is possible and necessary to lay out a road-map, so that progress can be observed, which in turn, will build credibility about the direction of reform. In concluding this Chapter, it may be useful to provide a broad outline for this. Accounting reform is the key in placing this relationship on a transparent and firm footing. However, even before accounting reform is completed, some preparatory actions can be taken.

6.35 First, starting with the next budget, an explanatory statement can be prepared on the budgetary support from GOI to IR. This could, for example, separate out the following, viz. (a) dividend refund, which can be spent by IR on O&M, instead of capital, (b) loans to railway PSUs, which would be disintermediated to the corporates, (c) support to the extent that the dividend is lower than GOI's borrowing rate, (d) payments for PSOs – partially listed, such as the concession fares and identified projects, such as JUSBRL and (e) remaining amount for capital support. To the extent that IR increasingly implements the capital programme through a corporate entity, as recommended in Chapter 7, this support would be progressively disintermediated. Second, as the accounting reform is completed, (d) can be detailed out more clearly. Furthermore, the accounting separation of the Railway Infrastructure Company from that part of IR operating trains, will clearly identify the support extended for operating costs, beyond that of IR. Concomitantly, as RRAI is established, the PSO obligations would depend on their recommendations. Here, the pension liabilities also need to be made transparent, as discussed in Chapter 4. At this stage, a separate Railway Budget can be discontinued. Third, as the restructuring benefits start to flow, support should be gradually limited to providing guarantees for borrowing to meet capital expenditure, and all support for non-economic activities, where necessary, rationalized as part of PSO. Fourth and finally, support would be limited to PSOs, which can eventually be bid out. If necessary, the Railway Infrastructure Company can continue to be supported in a rule-based manner, in particular by restructuring the capital-at-charge. For both the bifurcated parts of IR, raising of resources will remain an issue. We turn to that issue in Chapter 7.

Chapter 7: Financing and Generation of Resources by IR

Introduction

7.1 Why should financing of the Railways be an issue? The investments in the Railways usually earn a return. A new track will generate more traffic; more wagons will carry more freight, better signalling will allow more trains to be run, thus generating more revenue. The financial markets in India are deep enough to capitalise such future cash flows and provide funds for the purpose. So, what is the problem? Empirically, these seem to be the following:

(a) Investment is made in projects (new lines, expansion of old lines, electrification of existing lines, etc.) that do not have traffic. This is an issue of project selection.

(b) Even if the line has traffic, the mix of passenger and freight is unbalanced, i.e., there is too little freight traffic to generate the necessary revenue. This can also be seen as a consequence of charging passenger tariffs that are too low, which is discussed later in this Chapter.

(c) Efficiency improvements that were used to justify the project, and concomitant increase in revenue, does not fructify, e.g., the increase in capacity or the reduction in fuel costs after electrification are not visible

(d) The project implementation is delayed and cost escalation makes the difficult to recover the investment, even if there is sufficient traffic.

7.2 A critical part of this situation is because IR has historically been financed largely through internal accruals and from budgetary support and not from external financing. Thus, the critical gaze of the financier has largely been absent from project oversight in IR. As Table 7.1 shows, until the Sixth Five Year Plan, there was no external financing in IR. It is only with the establishment of the Indian Railway Finance Corporation (IRFC) in 1987 that external resources have started to be a visible part of railway resources. Starting from about 17% in the Seventh Plan period, the mix has not increased dramatically. In 2014-15, the share of extra-budgetary resources was 27%, while GOI continued to contribute 46%, an increase as compared to 42% in the Seventh Plan. The only change in the mix was the reduction of internal contributions to investment from 43% to 23%. The lack of corporate entities who can borrow on behalf of IR has limited market access for IR investments.

Project Performance

7.3 The ongoing portfolio of projects in IR, evocatively called the Pink Book, is a picture of delays in completion. Currently, as of 2014-15, a total of 11,709 projects that have been approved by the Railway Board are in the process of completion, with an estimated cost to completion of Rs. 494,911 crores (Table 7.1). These constitute 98% of the cost to complete. In addition, another 14,369 projects have been approved by the General Managers, with an anticipated cost of completion of only Rs. 7,140 and

15,078 projects of DRMs, adding up to Rs. 2173 crore. The total cost to completion for all these projects is thus Rs. 504,223 crore. The remaining 2% of the funding is therefore dedicated to 71% of the projects. The Committee undertook an analysis of the status of these projects, which is detailed in Figures 7.1 and 7.2.

Table 7.1: Pending Projects

Plan Head Name	Number of projects	Cost to Complete 2014-15 (Rs)
New Lines (Construction)	170	1,33,604
Gauge Conversion	67	24,494
Doubling	233	39,623
Traffic Facilities-Yard Re-modelling & Others	598	5,516
Road Safety Works-Level Crossings.	204	1,135
Road Safety Works-Road Over/Under Bridges.	1535	42,531
Track Renewals	2355	15,218
Bridge Works	286	2,254
Signalling and Telecommunication	582	6,306
Electrification Projects	54	6,692
Workshops including Production Units	481	17,403
Metropolitan Transport Projects	16	21,661
Total	6581	3,16,442
Rolling Stock	1287	1,74,972
Grand Total	7868	4,91,415

7.4 In Figure 7.1, one can see the relationship between physical and financial progress of projects, which one would expect to be quite related. Instead, the lack of a relationship appears quite troubling. In many cases, it would appear that financial expenditure has far exceeded the sanctioned amount. This may be because the process for sanctioning changes in project costs in IR is cumbersome and work is not halted while this process is being gone through. In some cases, it is because the data, especially of physical progress is not updated accurately. These are major failings in process, since it prevents active project monitoring.

7.5 Similarly, in Figure 7.2, when one looks at financial progress based on the year of sanction, one would have expected that there would be a regular negative relationship. Older projects would be close to completion, while newer projects would have just started. However, as one can see, there are a number of projects that are old but little progress has been made. In principle, one deduction from this observation would be that projects which have made very slow progress are revealed to be low priority, in the judgement of IR, not just for one Railway Board, but for successive Boards. However, the risk is that just by being there for a long enough time, these projects attract sufficient investment such that they cross the threshold beyond which they cannot be discontinued.

Figure 7.1

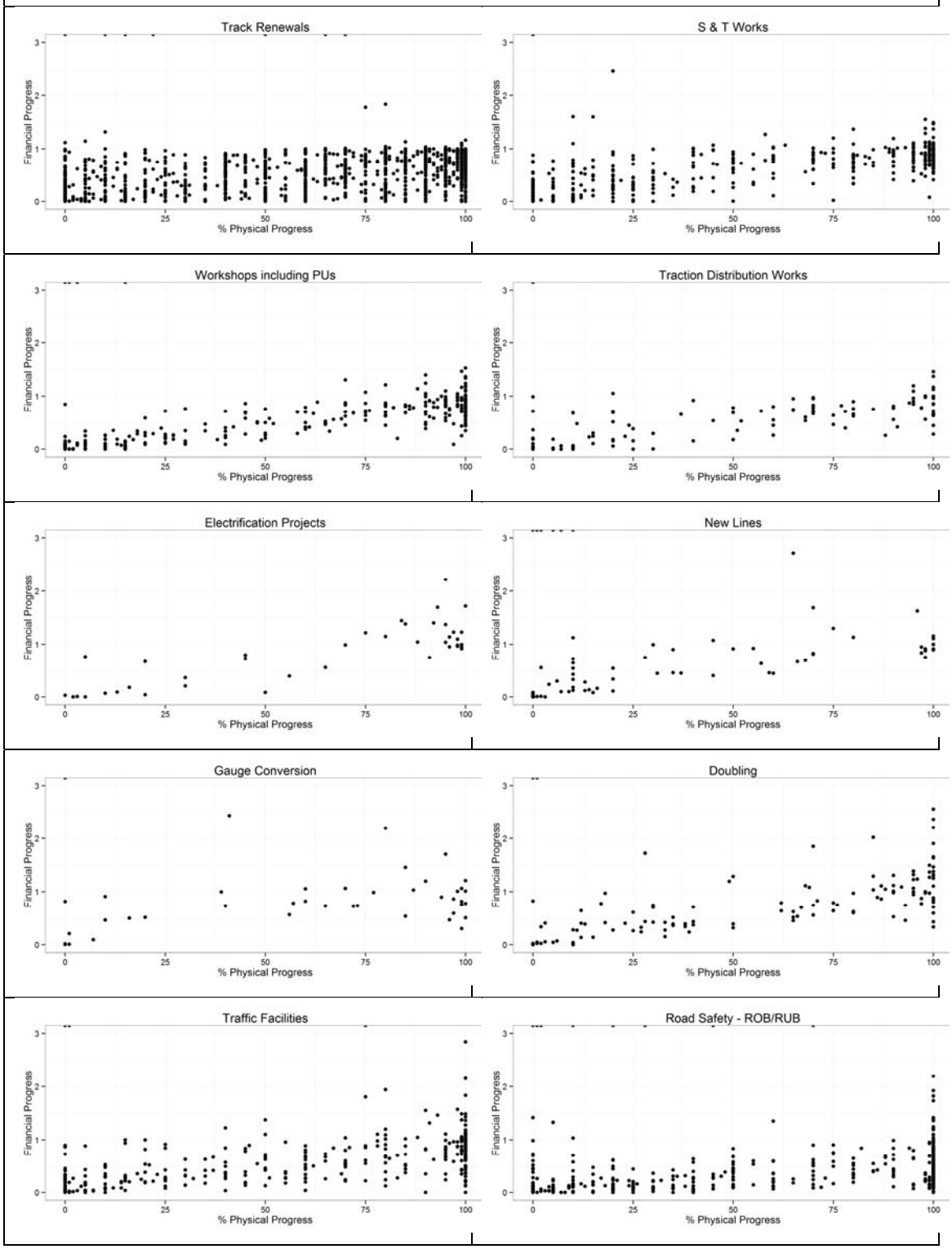
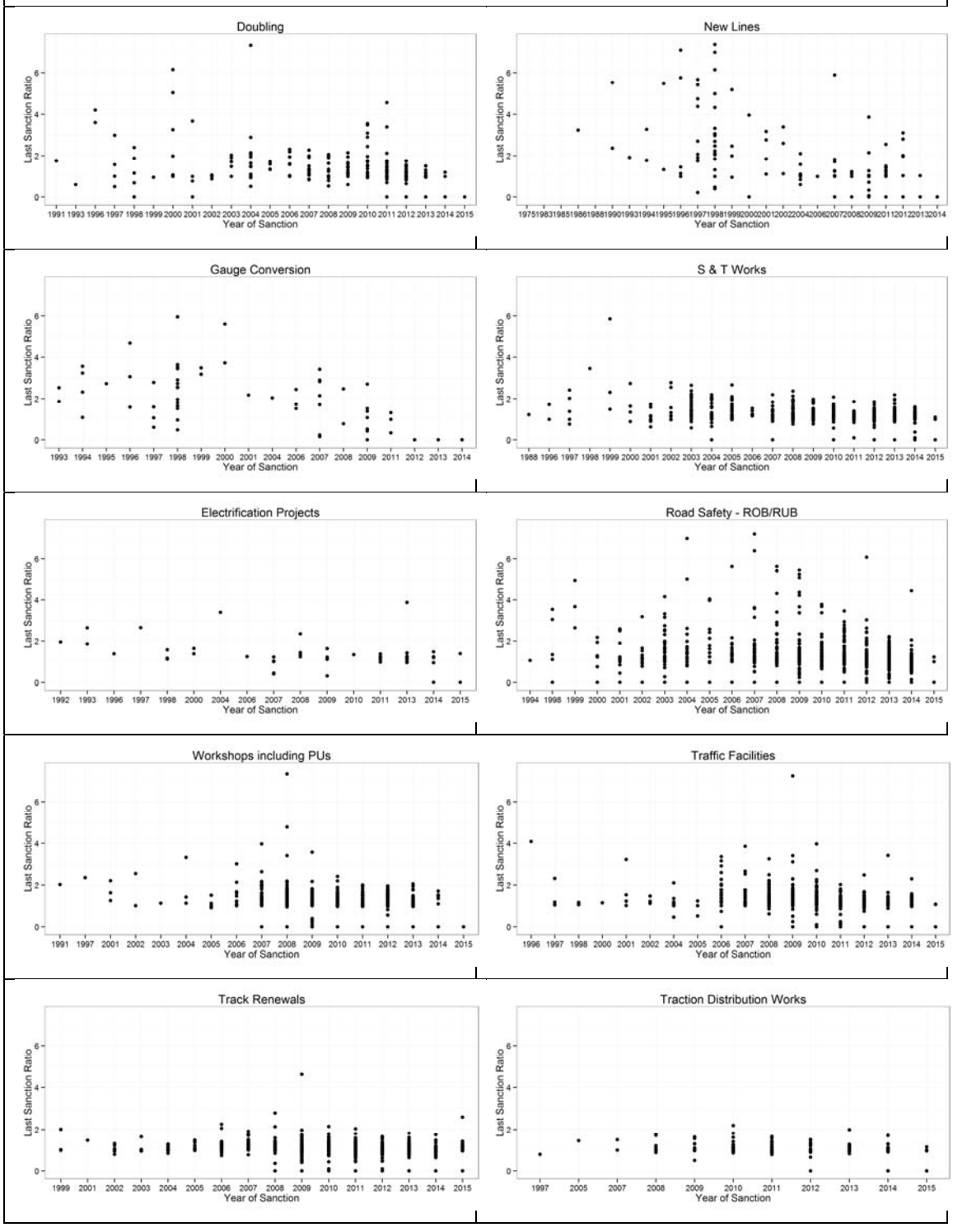

Track Renewals
S & T Works
Workshops including PUs
Traction Distribution Works
Electrification Projects
New Lines
Gauge Conversion
Doubling
Traffic Facilities
Road Safety - ROB/RUB
Financial Progress
% Physical Progress
0
25
50
75
100
1
2
3

Figure 7.2: Last Sanction Ratio



7.6 Figures 7.3 and 7.4 illustrate this phenomenon. They show the relationship between the time since inception, the extent of financial progress and the size of the project involved for four types of works, viz. track renewals, doubling, new lines and gauge conversion. For new lines, for example, almost Rs. 32,000 crore worth of projects (from the set analysed), which were started before 2000, i.e., over fifteen years ago, is still between 50 and 100 percent complete. This could indicate the phenomenon that if a project is around long enough, it eventually will get funded over time. However, it is possible that since they are all more than 50% complete, it would be difficult to discontinue them at this time. Nevertheless, these projects should be re-examined, for it is also possible that the financial progress ratio is being over-estimated, since the cost to completion has not been updated. Taking this logic further, the Rs. 3,000 crore worth of projects which were initiated before 2000 and on which the expenditure has been below 10% are prime candidates for discontinuing. Another Rs. 3,500 crore of such projects has less than 25% financial progress. The same phenomenon is seen for gauge conversion, where Rs. 16,000 crore worth of projects which were started before 2000 is yet to be completed, though the extent of projects with less than 25% financial progress is less than that of new lines. Electrification projects and traction distribution works also have similar characteristics. Per contra and in relation to these types of works, doubling or track renewal is less disturbing. In doubling less than Rs. 2000 crore of projects initiated before 2000 have yet to be completed, while there in no incomplete project of that vintage in track renewals. In part, this can also be due to the phenomenon of 'departmentalism' where the budget is allocated proportionately to departments. The effect is to optimise, if at all, within types of works, rather than optimising across the entire portfolio of projects.

7.7 The figures also provide a measure of cost escalation by reporting two parameters for ten types of works, viz. (a) last sanction ratio, which is the ratio of the last sanctioned cost to the original cost, which provides an estimate of cost escalation; and (b) financial progress ratio, which is the ratio of expenditure on the project to the last sanctioned cost. As can be seen, in a number of cases, these ratios have far exceeded 1. This could testify to a number of issues, such as: (i) Poor practices of preparing original estimates, which are then corrected while preparing sanctioned cost and are reflected in the last sanction ratio. (ii) Alternatively, there large extent of cost escalation from the original sanctioned estimates. Given the delays documented, this is quite possible. (iii) Very lax processes of updating the database, which indicates poor financial management, since updated sanction amounts have not been posted, which results in the financial progress ratio exceeding unity. (iv) Extensive expenditure undertaken without sanction (which appears improbable).

Figure 7.3: Financial Progress of Projects by Type and Year of Sanction

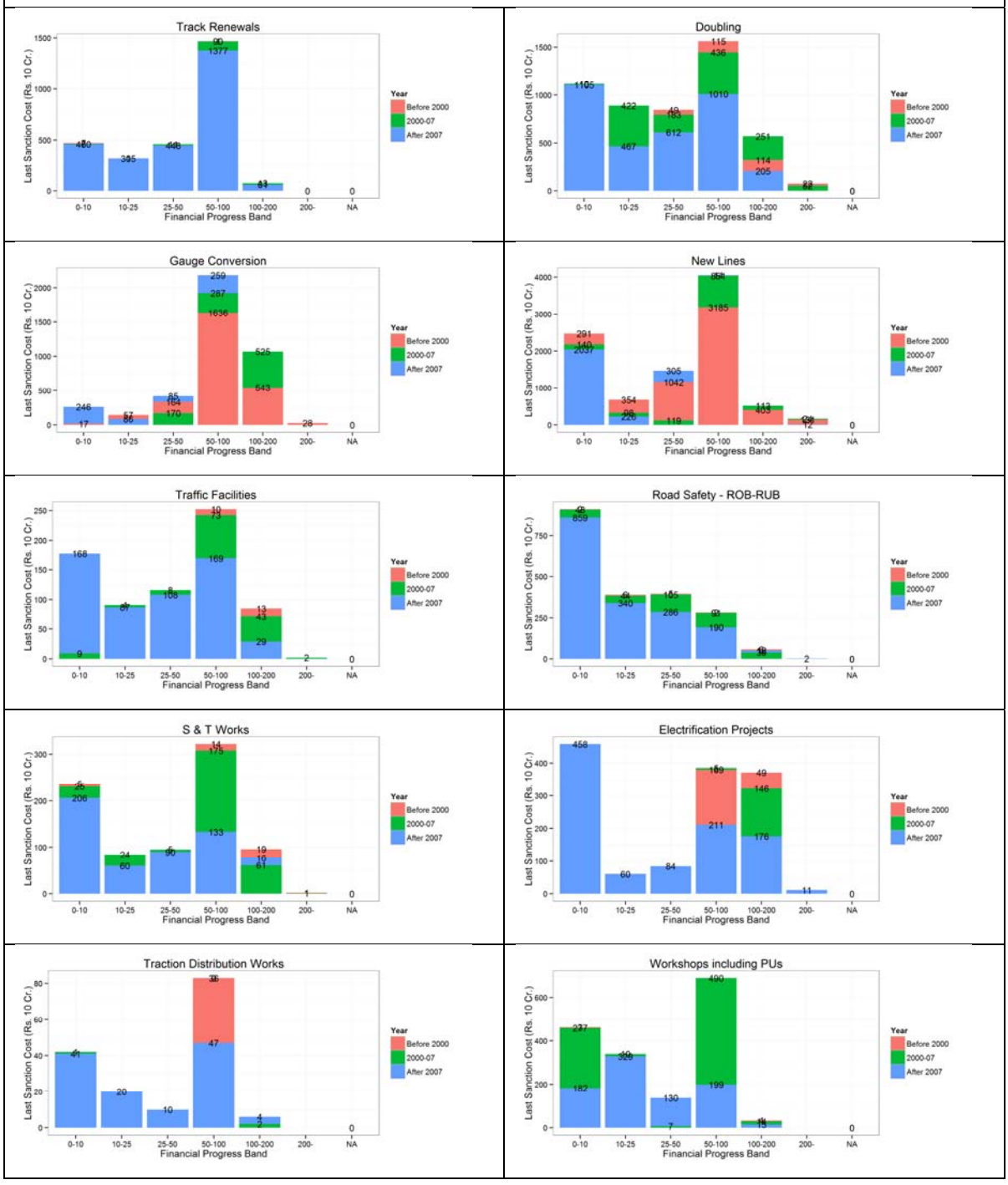
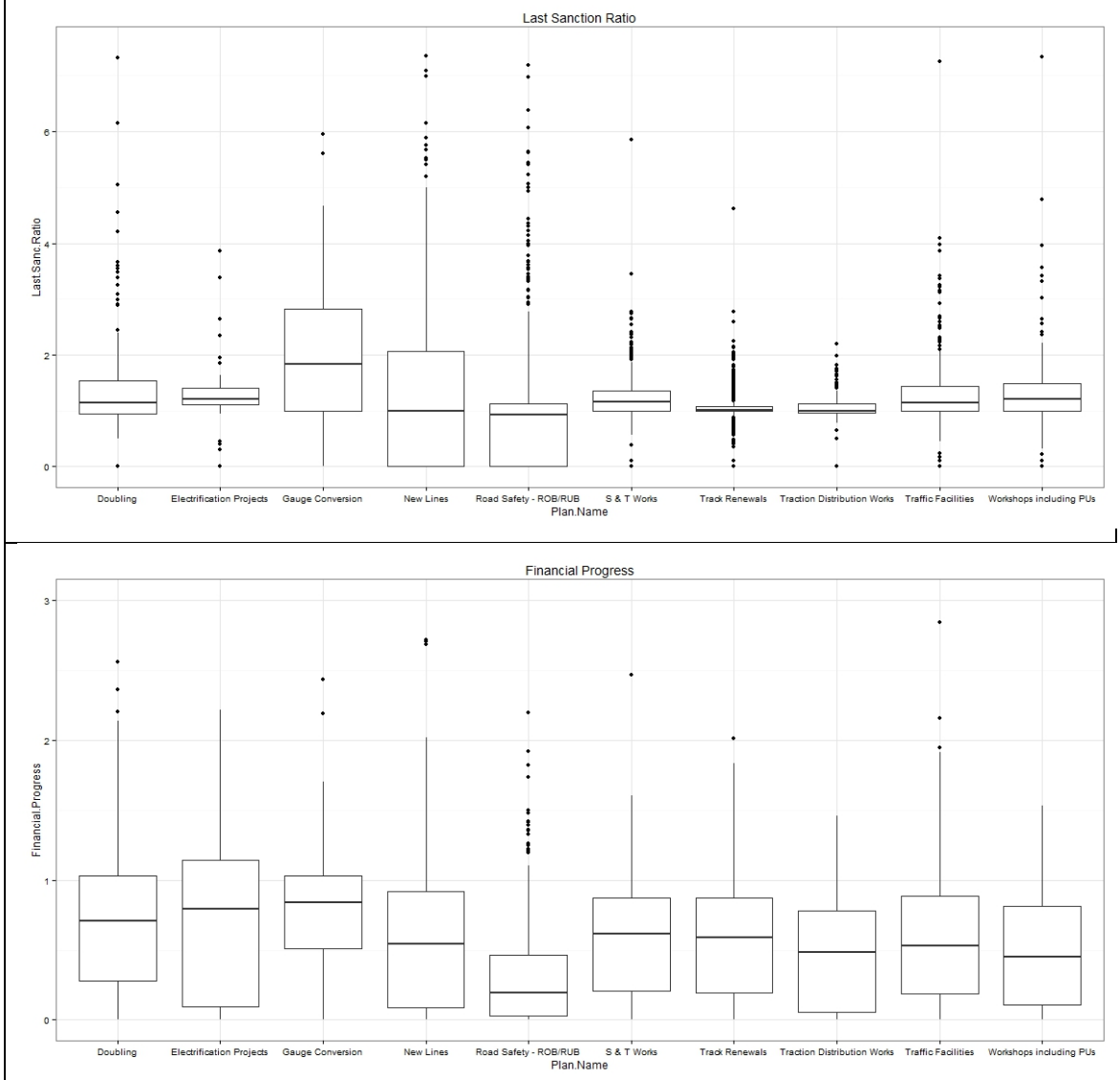


Figure 7.4: Last Sanction Ratio and Financial Progress for different Classes of Works



7.7 This analysis does not even account for the nearly 29,447 projects, all together aggregating less than Rs. 10,000 crores, that have been sanctioned at levels below the Railway Board. The very low average size, of less than Rs. 30 lakhs per project, testifies to the limited powers available for sanction at these levels. This is addressed elsewhere in the report. In the view of this Committee, since these projects have been decided on by operational levels, they are likely to be operationally important. They are also small and can be easily completed, given current resources. Leaving them unfinished takes up precious management time. These projects should be fully funded, so as to finish all of them in two years' time. Any project that cannot be completed in that time should not receive any further funding**.**

7.8 On the phenomenon of delayed projects in general, in the view of this Committee, there is little purpose in generating resources to fund these projects without a thorough review from a zero base budget perspective. Evidently, the basis for sanctioning some of these projects has changed since they were initiated. If they were ever commercially viable, the extensive delays are likely to have altered that situation. A number of previous committees have also addressed themselves to this situation. The Tandon Committee (1994) deciphered a tendency where physical facilities are preferred over actual services and popular projects are preferred over viable ones. It found that the number of projects undertaken was much larger than justified by resources and project costs were underestimated to obtain sanctions. Mohan (2001) remarked on the tendency to give more attention to non-remunerative projects. It also found that, from the point of view of investment strategy, the annual budget exercise leads to a very short-term focus on all investment initiatives. Even for the larger projects that ought to rank high in importance, absence of a 'project finance' approach makes project completion uncertain and subject to the varying priorities that make themselves evident over the stretched out implementation period. For projects funded out of 'internal resources', the cost of finance is equivalent to the returns on investments thereby foregone. Projects funded thus need to be selected through a rigorous screening process and identified as being of the highest organizational priority on which the limited internal resources should be invested.

7.9 In view of this, the following is recommended, as principles for zero-base budgeting:

(a) The project information database should be updated on a war footing, preferably before the final report of the Committee is submitted later this year.

(b) All projects that were initiated before 2000 should be re-evaluated, both for sanctioned cost and for cost to completion. Based on this assessment, projects with a high ratio of cost to completion to sanctioned costs should be examined for discontinuance, since the logic of the project may have altered in the last fifteen years.

(c) All projects before 2000, with a financial progress ratio of less than 25% should prima facie be candidates for discontinuance, since the IR has revealed that it considers these projects to be of low priority, *a fortiori* the case for new lines and gauge conversion.

(d) Similarly, projects sanctioned between 2000 and 2007 (or some such date to decided), which have less than 10% financial progress, should also be prima facie be candidates for discontinuance

(e) For the set of selected projects that survive a process of funding should be put in place. Projects, especially those above a threshold, should progressively be transferred to a corporate construction organisation, such as RVNL, IRCON, KRCL, etc. with clear funding streams attached to each project over the next five years. This dedicated funding stream can then be leveraged by the construction

organisation to raise debt and complete the project. This will enable a project finance approach to be taken to these larger projects.

Sources of Finance

7.10 The Committee's recommendations on finance reflect on the need to finance these selected projects and ensuring that there are sufficient resources to commit to the dedicated funding stream referred to above. This includes the raising of internal resources for this purpose. The discussion that follows is therefore separated into the following sections, viz.:

(i) Internal Resource Generation

(ii) External financing (which includes foreign funding) through borrowing

(iii) External financing through use of assets

(iv) Building capacity through joint ventures

(v) Building capacity through PPP

(vi) Resource generation through non-traditional means. In this, a significant issue that needs to be addressed is the funding of pension obligations.

7.11 This is against the background of what has already been mentioned in earlier Chapters. IR funds its expansion, capacity creation and asset renewal through a centrally controlled Plan outlay whereas its day to day operations and running expenses are met through the Revenue budget, largely controlled by the General Managers of the Zonal Railways. The Plan expenditure is primarily met from three major sources.- (i) the gross budgetary support from the Government, (ii) internal resource generation after meeting its expenditure and other statutory liabilities and (iii) external borrowings (primarily through IRFC). Tables 7.2 and 7.3 illustrate the nature of the problem. Investments have been financed through internal resources or budgetary support and gross budgetary support to IR has been declining, an issue covered in detail in Chapter 6. Borrowings from external sources have increased sharply, to bridge the gap between available resources and the Plan size, though market borrowings were initially expected to have only a limited role. A substantial part of annual borrowings are now ploughed back to IRFC as repayments. Indeed, in 2014-15, repayments exceeded the borrowing.

Table 7.2: Financing of Railways Plans – a Historical Perspective

(Rs. Crore)

Plan	Internal Resources		External Resources Total				Capital From Internal & External Resources		Budgetary support fromGen. exchequer		Total
			Market borrowing (IRFC)		Others						
	Rs (cr)	%	Rs (cr)	%	Rs (cr)	%	Rs (cr)	%	Rs (cr)	%	Rs (cr)
I	280	66%	—		—	—	280	66%	142	34%	422
II	467	45%	—		—	—	467	45%	576	55%	1043
III	545	32%	—		—	—	545	32%	1140	68%	1685
A	320	42%	—		—	—	320	42%	442	58%	762
IV	397	28%	—		—	—	397	28%	1031	72%	1428
V	384	25%	—		—	—	384	25%	1141	75%	1525
A	316	25%	—		—	—	316	25%	935	75%	1251
VI	2783	42%	—		—	—	2783	42%	3802	58%	6585
VII	7089	43%	2520	15%	—	—	9609	58%	6940	42%	16549
VIII	18830	58%	5565	17%	596	1.8%	24991	77%	7311	23%	32268

Source: Budget Documents, various years.

Table 7.3: Sources of Funds

Source of fund	2009-10	2010-11	2011-12	%age share	2012-13	%age share	2013-14	%age share	2014-15	%age share
Budgetary Support	16911	18385	20013	44%	24132	48%	27033	51%	30100	46%
Railway Safety Fund	805	1100	1323	3%	1578	3%	1983	4%	2200	3%
Internal Resources	12196	11528	8935	20%	9531	19%	9681	17%	15350	23%
Extra-budgetary resources	9760	9780	14790	33%	15142	30%	15085	28%	17795	27%
Total	39672	40793	45061		50383		53782		65445	

Internal Resource Generation

7.12 Previous Committees have also noted shortfalls in internal revenue generation. The Rakesh Mohan Committee (2001) noted the sharp decline in the share of budgetary support and internal resources leading to increasing market borrowings and financial stress in IR. The Ahluwalia Committee (2014) noted that in the recent years, the amount raised from private investment has been negligible, despite many pronouncements. In the above context, the need for increasing efficiency of railway services to generate more internal resources assumes importance. It is the Committee's opinion that for IR, increase in productivity is possible from better utilization of existing

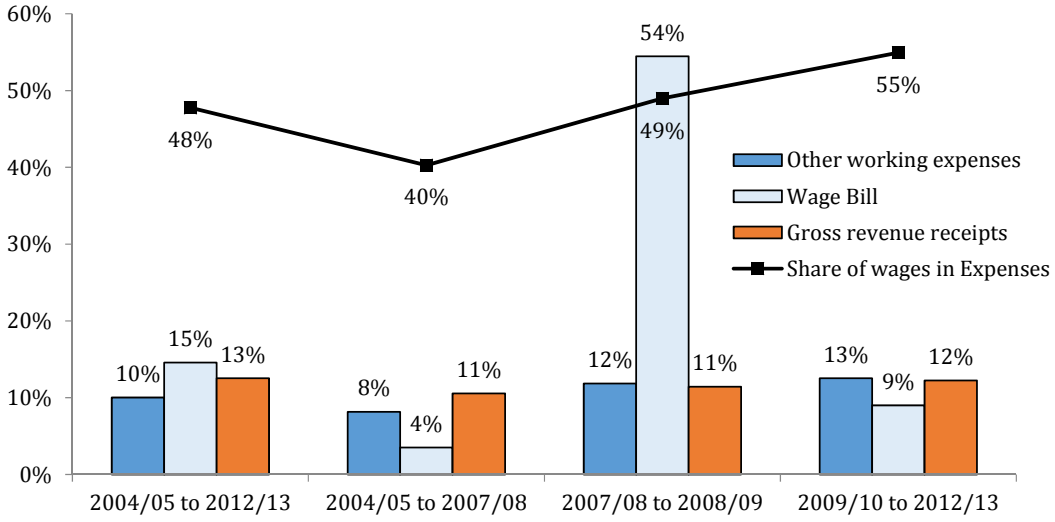
capacity and assets through improved operating and scheduling practices. Details of productivity differences across different zones of IR show that the difference between the worst and best is quite large. This can result in substantial cost savings and increase internal resource generation. However, there is an important issue to ensure that the operational improvements effected get converted into financial achievements and this must be tackled. We are flagging accounting reforms and MIS systems, which should help the management monitor the results better.

7.13 On the revenue front, primarily tariffs are not in aligned to cover the increased input costs. The Chairman, Railway Board in his presentation, informed the Committee that the composite weighted index of IR's gross input costs during the period 2004-05 to 2012-13, grew at 10.9% (CAGR), but in the corresponding period, average earnings per NTKM Index grew at 4.8% (CAGR) and average Earnings per PKM Index grew at 2.8% (CAGR). Even considering that a certain part of the rise in input costs was due to inefficiency, as noted above, this is a significant gap. Subject to caveats about the distribution of costs and earnings across segments, there has specially been significant under recovery of costs in passenger segment as shown in the unit cost vis-à-vis yield per unit in Table 7.4. Some of this is due to reasons beyond IR's control. The improvement in IR's operating ratio, between 2004-05 to 2007-08, by increasing the payload on wagons, was negated by the 6th Pay Commission award, though it did enable IR to meet its substantially increased wage obligations for the using its own resources. Figure 7.5 shows the impact of the 6th Pay Commission on the working expenses and wage bill of IR. The share of wage expenses in total expenditure has continued to rise, even after the one-time impact of the Pay Commission. More disturbingly, growth of gross revenue receipts, which was more than that of non-wage expenses, has fallen behind with the recent rise in non-wage expenditure. With another round of wage increases expected from the 7th Pay Commission, though hopefully not as destabilizing as the 6th Pay Commission, revenue growth can be expected to fall quite a bit behind, in a business-as-usual scenario. This is why action is needed both on the expenditure side, by improving efficiency and on the revenue side, both of which are more in the control of IR than wage growth.

Table 7.4: Unit cost vis-à-vis yield per unit

Year	Coaching Services (in paise)			Freight Services (in paise)		
	Cost per PKM	Earnings per PKM	Ratio	Cost per PKM	Earnings per PKM	Ratio
1981-82	7.19	4.48	62.3%	12.39	14.35	115.8%
2013-14	**70.79**	**37.49**	**52.0%**	**87.71**	**132.11**	**150.6%**

Figure 7.5: Growth of Revenue and Expenses 2004-05 to 2012-13



7.14 This brings us to the pricing of railway services. In determining prices for the outputs of multi-product organizations like the Railways, policy-makers have long faced a number of issues that flow inexorably from the basic socio-economic characteristics of IR. The endemic economies of scale and scope imply that straightforward measures of costing cannot be used to dictate pricing. Further, shared costs that are a concomitant of economies of scope, are not unambiguously identified with individual services. There is, thus, a need to adopt pricing principles which can combine cost and demand factors in an optimal manner. Such principles would lead to differentiated prices, which apportion all un-attributable fixed and common costs amongst its services on the basis of the value of those services to consumers - expressed as their elasticities of demand. Essentially, the point is that the tariffs (especially on high-valued items) cannot be raised beyond the level at which the elasticity of demand for railway transport works against the interests of the Railways. That is, the tariffs should not be so high as to drive away the customer to a competing mode of transport. That the rate-making in IR has been highly insensitive to changes in the relative advantages of modes is evident from the gradual diversion of high-valued as well as low-valued items from the Railways to air and road transport.

7.15 We will not revisit arguments that we have already highlighted in Chapter 6, about the social cost obligations and the role of the regulator. Having said this, fare determination must be based on principles that can combine cost and demand factors in an optimal manner. Such principles would lead to differentiated prices, which can, for example, apportion all un-attributable fixed and common costs amongst its various services on the basis of the value of those services to consumers - expressed as their elasticities of demand. Recently, *the Economic Survey 2014-15*, provided estimates of price elasticity of demand for different components of rail services, reported in Table 7.5. This shows that while a 10% increase in freight tariffs would reduce freight

demand by 5.54%, it would reduce passenger demand by only 1.44%. Thus, passenger services are much less price-elastic than freight services, i.e., they value rail services relatively more. Even the cross-elasticity of civil aviation traffic with respect to changes in Railway prices is estimated to be a low 5.7 percent, which indicates very limited switching from rail to air, in response to price. It would thus be economically rational to apportion un-attributable fixed and common costs proportionately more to passengers than freight. Essentially, the point is that the tariffs (especially on high-valued items) cannot be raised beyond the level at which the elasticity of demand works against the interests of the railways, i.e., the tariffs should not be so high as to drive away the customer to a competing mode of transport. That the rate-making in IR has been highly insensitive to changes in the relative advantages of modes is evident from the gradual diversion of high-valued as well as low-valued items from the railways to air and road transport. As the NTDPC (2012) Report noted, the Railway share of originating tonnage had declined from 89% in 1950-51 to an estimated 30% in 2007-8.

7.16 Having said this, there is an additional comment to be made about freight. IR must concentrate on improving productivity and efficiency, especially in its highly remunerative freight segment. For this, (i) Introduce and proliferate higher pay load to tare weight ratio wagons; (ii) Improve average speed of goods train, by use of longer trains and loco-trawl; (iii) Progressively introduce time tabling of freight trains.

Table 7.5: Price Elasticity of Demand (per cent)

Overall suburban passengers	23.2
Overall non-suburban passengers	13.4
Upper class passengers	9.8
Mail and express class passengers	13.0
Ordinary passengers	14.5
Cement	37.4
Coal	47.9
Fertilizer	44.1
Iron ore	17.9
Petroleum and petro products	91.4
Pig iron ore	33.3
Total Freight	**55.4**

7.17 **Catering**: This Committee feels that the decision in 2010, to switch back to departmental catering from IRCTC was perhaps a restrictive step. IR must encourage on-board catering through large food chains and local restaurants on the payment of a modest license fee. This can be enabled simply through web booking and thus offer customers a wide choice of local cuisine, delivered at his/her choice of station by the restaurant. IR can thus cut down department costs and raise revenues through the license fee, apart from gaining a higher level of customer satisfaction. Some local initiatives by private entrepreneurs have been thwarted in the past, instead of being leveraged and aggregated. IR must have a comprehensive web-based option for customers, who may choose from the variety of food available locally and have it delivered to them at a particular station by the local restaurant, or even a large chain of restaurants. The revenues to IR would simply accrue through its license fee and also provide access to passenger databases, at practically no cost.

7.18 **Parcel**: Leasing of parcel vans in trains through auction of carrying capacity/ Private parcel trains: A highly remunerative market for transportation of white goods from the e-commerce segment is so far untapped by IR. These have special handling needs and the requirement of an aggregator. IR must lease out its parcels capacity in passenger trains to private aggregators through auctions. IR had earlier introduced a scheme for leasing of parcel space in the Brake Vans (SLRs), and Parcel Vans (VPHs) of passenger carrying trains. Under this scheme, parcel space was leased out to private operators by inviting bids through open tenders. Vision 2020 envisaged "*Parcel services will be managed as a separate business and run from dedicated terminals with separate parcel trains rather than from station platforms. On major routes, this service will be run as efficiently and professionally as air cargo services. The revenue from parcel services would be targeted for at least a fivefold increase in ten years*". This Committee recommends that a major step to attract the fast growing goods traffic generated by e-commerce would be to hive off Parcel Business and expand it by: (i) Leasing out Brake Vans in mail/express and passenger trains to get assured traffic at high rate; (ii) Leasing out parcel vans on round trip basis to clear valuable parcel traffic with significant freight potential; (iii) Introducing Millennium Parcel Express on fixed time-tabled path; (iv) To encourage leasing to the maximum possible extent, reserve price for leasing of parcel space in Brake Vans/Parcel Vans/Assistant Guard's Cabin should be kept attractive and realistic; (v) Based on the same concept, Parcel Express trains with minimum composition of 15 Parcel Vans + 1 Brake Van could also be leased out to the private operators. IR needs to further these initiatives to complete the logistics chain by involvement of private sector to provide total logistics solution; and (vi) Dedicated parcel terminals to reduce interference with passenger traffic. This elimination of parcel loading and unloading on passenger platforms would reduce complaints from all passenger segments, especially the differently abled, for whom space has been earmarked in the end coaches.

7.19 **Concessioning of train services:** This raises the issue of concessioning of train services. Though IR has notified several policies for private ownership of rolling stock which have been adequately enumerated in Chapter 2, these have not brought in the desired level of investments, primarily due to the perception of a lack of level playing fields. These attempts to bring in private capital in Railway freight stock through Own your Wagon Scheme (OWS), Wagon Investment Schemes (WIS/LWIS), Container Train Operators (CTOs), Private Freight Train Operators (PFTOs) etc. have met with limited success. The presentations and submissions made to the committee by the container train operators and freighters are placed at Table 7.6. This Committee recommends integration of all these policies into a single comprehensive policy, formulated after extensive stakeholder consultation. There is a need to streamline the process and approvals required for multi-user access to terminals and sidings, preventing non-discriminatory access to all private freight terminals and tracks, including railway sidings. The concessioning of private passenger trains are actually more possible, since they have clear "paths", but the revenue impact is likely to be small, though the image impact may be quite high. The users of trains like Rajdhani and Shatabdi are relatively less fare sensitive. IR could concession the commercial operations of these trains to private parties for an upfront/annual premium. The private operator will have freedom on pricing of tickets for a portion of the capacity and retain or share all advertisement revenue in the train and offer meals and other services on board, with a flexibility to price the same, too. The operation and maintenance of the train would be with IR, but this could be contractually specified, so that certain standards are maintained. These are issues that have been also covered in Chapters 2 and 3.

Table 7.6

	Container Train Operator (CTO)	Special Freight Train Operator (SFTO)	Automobile Freight Train Operator (AFTO)	Liberalised Wagon Investment Scheme	Wagon Leasing Scheme (WLS)
Year of policy announcement	2005	May, 2010	July, 2010	April, 2008	April, 2008
Year of signing of first License/ Concessionaire Agreement	2006	Still under finalisation at IR	April, 2014	2009	May, 2012
Nodal Directorate in Railway Board	Traffic transportation	Freight marketing	Freight marketing	Freight marketing	Freight marketing
Nodal Railways	Northern Railway	Respective Zonal Railway where the rake is based	Respective Zonal Railway where the rake is based	Respective Zonal Railways where the rake is based	Northern Railways
Categories	Four	Four	One	One	One
No. of licensees/ concessionaires(including those who have applied for)	17	0	2	13	2
Types of commodities permitted	ISO Containers	Category 1: Bulk cement, Fly ash and bulk fertiliser Category 2:Bulk chemicals, specific petrochemicals and bulk alumina Category 3: Steel products in specially designed wagons Category 4: Molasses, edible oil and caustic soda	Automobiles	Commodities other than restricted commodities like coal, coke , ores and certain petroleum products	Commodities other than restricted commodities like coal, coke , ores and certain petroleum products
Types of wagon designs permitted	BLC and its variants BLL and its variants	Special Purpose Wagons (SPWs) and High Capacity Wagons (HCWs).	Auto carrier wagons (BCACBM)	Special Purpose Wagons and High Capacity Wagons	BLC and its variants, BLL and its variants, Special Purpose Wagons (SPWs) and High Capacity Wagons (HCWs).
Tenure of initial license	35 years	35 years	35 years	35 years	35 years
Fee (License/Registration)	50 crore for Category I 10 crore each for Category 2,3 and 4	Category 1: 7 crore Category 2: 10 crore Category 3: 10 crore Category 4: 3 crore	5 crores	NIL	5 crores

	Container Train Operator (CTO)	Special Freight Train Operator (SFTO)	Automobile Freight Train Operator (AFTO)	Liberalised Wagon Investment Scheme	Wagon Leasing Scheme (WLS)
Freight/Haulage	• Haulage charges – a separate haulage table for Container carrying trains for movement of loaded and empty containers and empty flats as well. • For certain commodities called Container class commodities 15% discount on the applicable freight rates as per IR classification	12% discount on the applicable freight rates as per applicable IR classification	Haulage charges – a separate table for the Automobile carrying trains for loaded and empty directions.	15% freight rebate (for 20 yrs.) for SPWs on approved routes. 12% freight rebate (for 20 yrs.) for HCWs on approved specific routes. 0.5% of additional freight rebate (for 20 yrs.) for each tonne of addl payload	Not an operator. The haulage charges would be paid by the Lessee to the wagons have been leased as per their respective agreements with IR (CTO, SFTO, AFTO or LWIS as the case may be)
Own/ Third Party Cargo	Third party	Third party	Third party	Own	Not an operator. The haulage charges would be paid by the Lessee to the wagons have been leased as per their respective agreements with IR (CTO, SFTO, AFTO or LWIS as the case may be)
No. of wagons owned presently under the scheme	Approximately 13800 wagons	NIL	162	Approximately 1200 wagons	Approximately 550 wagons
Maintenance of wagons	To be done by IR. Maintenance charges part of the haulage.	To be done by IR. Maintenance charges built into the freight being charged	To be done by IR. Maintenance charges part of the haulage.	To be done by IR. Maintenance charges charged @5% per annum of the extant capital cost of the rake.	Maintenance of the wagons is the responsibly of the Lessee. The charges will be applicable as per the arrangement of Lessee wit IR.
	Container Train Operator (CTO)	Special Freight Train Operator (SFTO)	Automobile Freight Train Operator (AFTO)	Liberalised Wagon Investment Scheme	Wagon Leasing Scheme (WLS)
Access to terminals	ICDs, Private Freight	Only Private Fright Terminals	Only Private terminals or	Existing or new private	As per the policy of the

	Terminals (PFTs) and certain Railway Good sheds classified as CRTs		those Railway terminals where suitable handling facility is available	terminals.	Lessee.
Stated objective of the scheme	To increase Railway's share of container traffic and to introduce competition in railway container transport services in India	The objective of the policy is to increase Railways share in transportation of non- conventional traffic in high capacity and special purpose wagons thereby increasing commodity base of Rail traffic. This will facilitate induction of better design of wagons to increase throughput per train.	To increase Indian Railways modal share of the transportation of automobiles and to provide opportunity to Logistics Service Provider and to road transporters to invest in wagons and use advantage of rail transport to tie up with end users and market train service to create a win-win situation for Railways and themselves.	The policy aims to rationalise the earlier schemes like Wagon Investment Scheme (WIS) and Own Your Wagon (OYW) for private ownership of wagons by end users.	To develop a strong leasing market by encouraging third party leasing particularly with a view to bring in better wagon designs.
Common Issues faced by the licensee/concessionaire	• Plethora of policies, all with different provisions – too confusing for an investor. Should be rolled into one or two policies with uniform provisions. • Though most policies talk about encouraging new and better design, the procedure for getting a new design cleared by RDSO is long (can take anywhere upwards of 30 months for a design) and the policy is ambiguous on IPR and indemnity. • In all the above policies, access has been limited to Private terminals thereby severely affecting the movement of these wagons. In the other hand IR has merged the Terminal access charges into the Freight charges thereby a private party has to effectively bear the terminal access twice – once to IR and then to the private terminal owner. • Excess delay in procuring wagons due to delay in processes like estimation of Design Loan charges, Drawing approval charges, Inspection charges, signing of MoU and opening of files for procuring material. • Though wagons are permitted to be manufactured by Private manufacturers maintenance not allowed to be done privately specially those like POH and ROH which can easily be done in existing manufacturing plants with lesser down time. • High variability in lead times for moving the private trains from one point to another. (Only in AFTO scheme a time tabled running has been introduced). With such high degree of uncertainty about transit customers prefer to use Road. • Very high stabling charges being levied upon the private wagon owners making their business economics even worse.				
	Container Train Operator (CTO)	Special Freight Train Operator (SFTO)	Automobile Freight Train Operator (AFTO)	Liberalised Wagon Investment Scheme	Wagon Leasing Scheme (WLS)
Issues specific to policies	• Frequent hike in the haulage rates – no regulation. • ICDs critical to growth of	• Definition of High Capacity wagons is ambiguous thereby making those type of wagons completely out of scope for the	• Definition of High Capacity wagons is ambiguous thereby making those type of	• Definition of High Capacity wagons is ambiguous thereby making those type of	• Restriction on procuring General purpose Wagons (GPWs) leaves the

	CTOs – very long drawn and time taking process for getting the approvals • Design with higher axle load for carrying super heavy ISO containers and for better double stacking not available.	investor. • Restriction on procuring General purpose Wagons (GPWs) leaves the investor with a very small slice of the market. • Too many categories. Each category having different license fee. • Indian Railway will continue to keep carrying these commodities in their wagon, thereby being a competitor as well as the regulator. This makes the private investor wary. • Additional charges like busy season surcharge, developmental surcharge make rail more expensive • Restriction of commodities like coal, coke and ore severely restricts the induction of wagons. This burdens the IR exchequer. These funds will be freed to be utilised for capacity enhancement and connectivity works.	wagons completely out of scope for the investor • No development of Auto terminals by IR thereby restricting induction of more wagons in the scheme.	wagons completely out of scope for the investor. • Restriction on procuring General purpose Wagons (GPWs) leaves the investor with a very small slice of the market. • Additional charges like busy season surcharge, developmental surcharge make rail more expensive • Restriction of commodities like coal, coke and ore severely restricts the induction of wagons. This burdens the IR exchequer. These funds will be freed to be utilised for capacity enhancement and connectivity works.	investor with a very small slice of the market. •

Suggestions	• Merge all four operator policy like CTO, AFTO, SFTO and LWIS under one policy with uniform provisions.
	• Increase the tenure of the above policies to at least 40 years (codal life of wagons)
	• Open ownership of General Purpose wagons to private party. Open commodities like Coal, coke and Ore. Funds thus released to be ploughed in capacity enhancement and connectivity projects
	• Have a regulatory authority in place for having a transparent method of levying charges like freight, haulage, stabling and other such charges for the services provided by Indian Railways.
	• Open the Railway good shed/sidings to private investment and make them accessible to private wagons.
	• Rationalise and make more customer friendly the following processes:
	  • RDSO processes required for procurement of new wagons
	  • RDSO processes for clearance of new wagon designs
	  • Approvals for construction of ICDs and PFT – have a single window clearance
	• Allow private POH and ROH of the privately owned wagons.				

External Financing

7.20 In the past decades, there has been extensive restructuring of Railways around the world and while a few countries, such as Canada, United Kingdom and partly, Japan and Russia, have extensively privatized rail operations, in most other countries, there has been extensive organizational reform of the publicly-owned Railways to the point where there is now much more extensive market and private participation in Railway operations, more open access to fixed Railway infrastructure by multiple public and private operators, especially in regions such as Europe. Of the two countries with comparable Railway systems to India, the United States and China, the United States has traditionally had a privately owned rail freight operations system, but China, which has had a departmental system, has progressively reorganized its structure to the point where there is now no Ministry of Rail, with a national rail corporation and a number of regional operators, and specialized private railway operators especially in dedicated freight haulage. As a consequence, there are a variety of ways in which external investments by public and private entities have been made into Railways (see Table 7.7). Less well known in the extent to which this is also true for Indian Railways, as Table 7.7 also shows. It is clear from the table that even the existing legal and regulatory framework allows for extensive external and even private participation in Railways operations. This is to be expected, since the governing legislative framework in India dates from a time when there were multiple railways, many privately owned or owned by princely states. However, it is also the case that while there are many examples in India, there has been very limited scale-up of these initiatives, which remain scattered and disparate. The challenge would be to strategically mainstream these as a part of restructuring of the Indian Railway sector.

7.21 As mentioned in Table 7.7 and Figure 7.6, more than half of IR rolling stock as of March 2014 is financed and owned by the Indian Railway Finance Corporation (IRFC). Almost the entire incremental rolling stock procurement, whether of coaches, wagons or engines, is done through this route. As of March 2014, IRFC had leased to IR 3794 electric locomotives, 3495 diesel locomotives, 41,432 coaches and 185,362 wagons, adding up to Rs. 112,266 crore in value. Apart from a few odd railway lines, IRFC financing is currently largely limited to rolling stock. IRFC bonds are serviced based on lease payments from IR to IRFC. The net investment in lease receivables March 2014 was Rs. 74,504 crore. IRFC's rates are now quite fine, with spreads over GOI dropping from 140 basis points above G-Sec to in 2008-09 to 34 bps in 2011-12. Since it now also raises funds internationally, IRFC's cost of funds were below G-sec in 2013-14. About a quarter of IRFC's funds are now borrowed overseas, most of it on a LIBOR plus basis. However, recently it has also placed fixed long term bonds, inter alia, with international insurance firms. Almost all of these, like its domestic borrowing, are bullet repayment bonds. Nevertheless, earlier, the IRFC route has led to IR getting into what was a bit like a debt trap. Till now, IRFC's share of Railway plan outlay has been almost consistently around 20%.

Table 7.7: International and Indian Examples of External Investment in Railway Systems

Type of External Investment in Railways	International Example	Indian Example
1. Joint Venture with provincial government for suburban rail transit		Mumbai Railway Vikas Corporation Ltd (MRVC Ltd) is a 51:49 joint venture (JV) between Ministry of Railways and Govt. of Maharashtra
2. Joint Venture with provincial government for local railways	Chinese Ministry of Railways (when it existed) and local governments	Hassan Mangalore Rail Corporation is a joint venture between Govt. of India, Govt. of Karnataka and others
3. Joint ventures with local shippers	Shenhua Group (state owned energy company) owns and operates nine coal hauling railway lines (e.g. Shuohang Railway) in China.	Kutch Railway Co. Ltd. connects Adani's Mundra port in Gujarat to the Mumbai Delhi line. JV between South Eastern Coalfields, Govt. of Chhattisgarh and Railways
4. Leasing of Rolling Stock	Union Pacific in USA leases 29% (2,400+) of its locomotives and 45% (30,000+) of its freight wagons Currently about 85 % of freight wagons in Russia (about 1.2 million wagons) are now owned by the private sector	Indian Railway Finance Corporation (IRFC) is involved in leasing of rail assets in India. Almost all new rolling stock, coaches, wagons and engines are now leased through IRFC. However, older rolling stock continues to be owned by Indian Railways.
5. Public Private Partnerships (PPP) for building and operating entire railways	The Perpignan-Figueres Line (44 km high speed railway line) between France and Spain was built by a consortium of private firms under a 53 year concession agreement. Vale S.A., has invested in shares of railway concessions in Brazil, Mozambique and Malawi. It pays a concession fee to government for the right to operate the railway and becomes responsible for investing in and maintaining the railway infrastructure and rolling stock.	There are a number of PPP projects on Indian Railways. These include the Pipavav Rail Corporation Ltd. And the Bharuch Dahej Rail Corporation Ltd. (both connecting ports) IR has yet to concession or transfer an existing line to a third party, whether public or private, though there have been suggestions to transfer non-remunerative branch lines to provincial governments
6. PPPs for passenger and logistics services	In the United Kingdom, passenger services are offered by private firms under a concession agreement	There are a number of Private Freight Train Operators on Indian Railways, though they are limited by lack of defined paths and clear regulatory framework Multi-modal logistic parks
7. Leveraging Railway Assets such as railway right-of-way by communications companies and commercial development of Railways owned/acquired real estate.	**Right of Way Southern Pacific Railroad Internal Networking Telephony (SPRINT) in the US, is part of the third largest wireless network operator in the US.** **Former rail yards in central Tokyo were transferred to the Japanese National Railway Settlement Corporation and then sold through public auction.**	**RailTel has about 42,000 km of optic fiber cable running along the railway right-of-way, which it sells to telecom companies in India** **A large parcel of land was offered in Mumbai, by the Railways and sold on auction.**

8. Station development for urban rail	**In Hong Kong, the metro company, MTR Corporation as of 2013 had completed developments at 33 stations, generating some 94,000 housing units and more than 2 million sq. m. of commercial space, generating an operating profit of US$1.1 billion to support operations**	**Delhi Metro Rail Corporation (DMRC) has a policy of revenue generation by selling land around stations, as do metro railways in other cities.**
9. Market financing of Railway Companies by attracting private investors to buy bonds or equity shares in railways	**In 1995, the Canadian government sold shares of publicly owned Canadian National for USD 1.65 bn.** **In 1987, the US Government sold 85 percent of government-owned Conrail to private investors for USD 1.6 bn.**	**CONCOR, the container services operator in India is publicly listed with 25% foreign holding and an overall market capitalization of USD 5 bn.**

In the future, however, IR could be funded through IRFC in a variety of ways. First, IRFC can issue secured/unsecured bonds, subject to approval by the RBI. However, IRFC's leverage will go up unless it is recapitalixed appropriately. The current Net Worth (FY 14) is Rs. 7600 crore and leverage is 9.2x. This means that IRFC would require an equity infusion of Rs. 10,000 crore, if it were to borrow an additional Rs. 100,000 crore. The equity infusion can be facilitated through the National Investment and Infrastructure Fund (NIIF). Second, IRFC can use incremental balance sheet growth to fund Railways projects with lower visibility of direct returns, longer payback periods and repayment capacity. However, in this case, depending on the market's credit perception of IRFC, GOI fiscal support to IR could be used as a back stop. A large capital enhancement for IRFC will enable it to raise more resources but there is only so much that can be done through IRFC.[54]

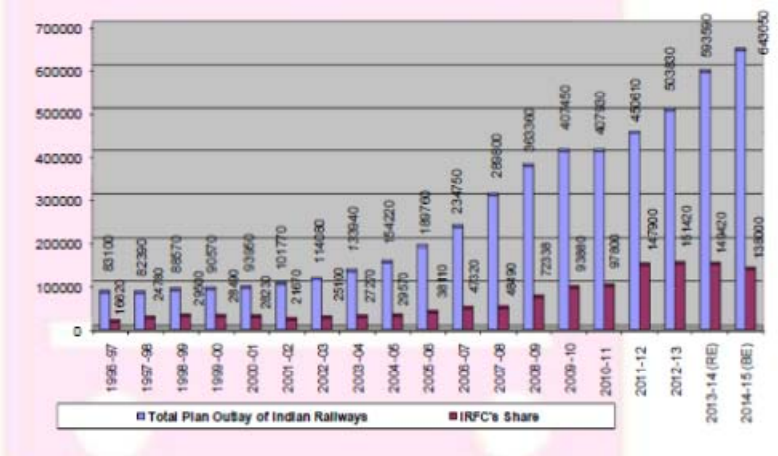
Table 7.7: Source of Funds (Rs crores)

Source	2010-11	2011-12	2012-13	2013-14	2014-15
Gross Budgetary Support	**19,318**	**21,073**	**25,234**	**28,135**	**31,596**
Internal Resources	**11,528**	**8,935**	**9,531**	**9,246**	**15,350**
IRFC-Borrowings	**9,780**	**14,790**	**15,142**	**15,085**	**11,795**
IRFC-Repayments	**6,575**	**7,890**	**9,551**	**11,165**	**13,180**

[54] It also needs to be mentioned that all measures/instruments are not scalable. Instruments such as 54EC provide limited mobilization up to INR 1,000 CR. Interest on 54EC is 6% p.a. for a three-year tenor, and the limit is Rs. 50 lakhs p.a. The limit can be sought to be increased to INR 1 CR. Also, investments by certain categories of investors, namely EPFO, LIC, etc., are limited by the net worth of the issuer. However, Sovereign Guarantees can ease this restriction.

7.22 This Committee feels that there is a need to tap other extra budgetary sources like the multilateral funding agencies. IR needs to provide for capital investments in critical projects that would increase its revenues. However, owing to the historical baggage of a large shelf of projects riddled with time and cost over runs and continued piece meal allocations, IR needs to change its investment strategy through ring-fenced investments in High Yield Projects. Some of these can be funded through the multilateral funding agencies (who would also do their own due diligence of the project) with the proviso of take-out financing through long-term lower interest rate funds from, say, insurance companies and pension funds. The funds borrowed from the market should be used exclusively for capacity generation and not diverted for any asset replacements.

Figure 7.6 : IRFC's Share of Total Plan Outlay of Indian Railways



7.23 Several PSUs, like MTNL, DVC, FCI and Air India, have raised funds backed by an unconditional and irrevocable guarantee for servicing both interest and principal payments. This does not have a direct impact on the fiscal deficit, although GOI reports the outstanding guarantee amounts, and this is factored in by rating agencies in their review of the Sovereign Rating. The issue can be unsecured and the instrument can be classified under "Infrastructure" and hence can be made an investible asset under section 2(h) of IRDA. This can also be made a permitted investment under the "State Loan" category for Provident Funds. Significant FII demand could be expected for such an instrument, since the recent MTNL issuances were at thin spreads of 3bps and 10bps. GOI can issue special "rail" bonds in lieu of cash subsidy, like it has in the past for FCI, oil companies and fertilizer corporations. These bonds are repo-able and classified under sovereign category for Provident Funds. Net Obligations for servicing these bonds rests with GOI, hence debt service is factored in the GOI's annual borrowing programme. These bonds can also a have long tenors, which will serve the purpose of deferring the redemption in line with project payback. Typical pricing for these bonds is typically a few basis points higher than the underlying G-Sec and sometimes similar to State Government securities. A variation, that has not been tried yet, could be a "tax-free" status with correspondingly lower pricing. This may enable raising significant amounts

from corporates and HNIs. Both these instruments can be useful in smoothening the profile of IR's pension payments. But these bonds must make commercial sense and not simply trade off future liabilities against current expenditure. Nor should GOI violate FRBM principles in the process.

7.24 Tax-free bonds: Tax-free rates have decreased substantially so far in FY15. The allocation of these bonds could be given primarily to IRFC, and IR will benefit from this subsidy, since IRFC charges a fixed spreads of 50bps.[55] GOI revenues will be marginally affected, to the extent of loss on Income Tax on Corporate/HNI investment in these bonds. Further mobilization can be enabled by relaxing applicability of Section 14a of the IT Act to Institutional Investors (only for IRFC and Ministry of Railways SPVs).

7.25 Zero-coupon bonds: These are bonds where both the interest and principal repayment are in bullet form, e.g., NABARD Bhavishya Nirman Bonds. It is suitable for projects with a long gestation period and back ended cash inflows. It provides benefit of lower Capital Gains even for institutional investors, if defined by CBDT as Capital Asset. Additionally, to attract Insurance Funds, it can be classified as Sec 2(h) IRDA eligible. RBI restrictions on institutional players investing in zero or low coupon bonds could be exempted specifically for IRFC, in view of the support from Ministry of Railways. Such zero-coupon bonds too could also be very useful in smoothening IR's pension payment profile.

7.26 Securitisation: IRFC has substantial annual lease receivables which can be securitized and moved off the IRFC balance sheet in a "true sale". It is possible to raise cash upfront against these receivables, since the structure will be rated AAA (SO) since receivables are sovereign and the pricing would be similar to AAA assets. This would enable IRFC to deleverage, or raise more resources without an equity infusion. However, this may result in cash flow mismatches for IRFC, against its debt service, in the future. Market appetite for a large issue of this size could be challenging and the use of this instrument will have to be graduated. The large insurance and pension firms are possible investor for such structures. Apart from this, it may be challenging to securitise future receivables from passenger ticket sales or freight revenue. For current bookings, outstanding receivables would be low. However, a part of some types of regular cash flow, e.g., from coal shippers like NTPC and CIL could be stable and secure enough to securitise. IR can charge on Escrow Account for "Future receivables" as support mechanism. Based on this, IR can issue NCDs on standalone basis backed by structured payment mechanism, where in case of a shortfall; IR can replenish funds in the Escrow account. This will become even more useful once the operating ratio begins to fall and surpluses are generated. It may also be useful to pilot the securitization of savings from electrification projects as a way of monitoring the ex-post viability of these projects. The savings due to decrease in fuel use could be put in a fund, as also a share of increased traffic revenues on that section. With reasonable backstops from IR, there should be appetite for such a structured product.

[55] Issuances of tax-free bonds by other institutions have not necessarily led to a reduction in their lending rates.

7.27 International Rupee Bonds: IFC (rated AAA by S&P) recently issued offshore INR "Masala" bonds, i.e., rupee denominated bonds sold to international investors. The issue size was Rs 1,000 crore for a 10 year tenor, priced at levels of 6.30% (rupee) semi annualized rate, which is lower than the rate at which GOI borrows in India[56]. Proceeds from issuance of these bonds are to finance lending to infrastructure assets in India. This also mitigates currency risk. Offshore listing potentially allows foreign investors to bid aggressively. As Box 1 shows, IFC does lend and even invest in State Owned Enterprises, especially in network industries that are natural monopolies and in organisations that are trying to transition from government funding to "*commercial funding - thereby introducing it to the discipline of market based financing*". So, being a network monopoly, IR could engage with IFC to explore the possibility of raising funds through international rupee bonds. ADB also has recently issued rupee denominated bonds in the international market, at similar rates, though a smaller issue, for a shorter tenor. Given the success of these initial offerings, more are likely to follow, though market appetite may evolve gradually.

Box : IFC's Investment in State Owned Enterprises (SOEs)

IFC (International Finance Corporation) is usually thought of the World Bank Group's private sector lending arm. However, it does also finance SOEs, both at the state and national level, and through both equity and debt. This is especially so in the case of natural monopolies, like power transmission networks. Rail track infrastructure would appear to be a good fit too.

Recently in India, the IFC has financed the national power transmission utility through both debt and equity support. In addition to USD 20 million in equity, it proposes to provide POWERGRID up to USD 100 million in A-loans and another USD 300 million in B-loans (syndications). It is justified by the IFC as enabling POWERGRID to progressively reduce sovereign guarantee support and tap international commercial sources of financing currently not available for long tenors as required for infrastructure financing.

IFC has also financed a state-level SOE like Maharashtra State Electricity Transmission Company Ltd. (MSETCL), also a power transmission utility. The proposed investments from IFC are expected to help enhance the commercial orientation of MSETCL, to help it transition (at least partially) from sovereign guaranteed funding, including from the World Bank, to market based financing, involving commercial due diligence, financial covenants and security creation. IFC's financing will also send a signal that MSETCL can attract commercial financing for long tenors and thereby make it more attractive for local funding.

In both the above examples, there are strong similarities to the situation of IR, viz. the network character, the transition from sovereign sources to commercial funding, the need for long-term finance and the positive signaling effects of such an investment. IFC's willingness to lend to MSETCL also bodes well, given the possibility of joint ventures of IR with state governments.

[56] This happens because the decrease in risk spread as a result of the bonds being issued by an AAA rated entity, as compared to GOI's BBB- more than compensates for the expected exchange depreciation priced into the bond.

External Financing through Use of Assets

7.28 Land and REIT: IR can leverage ownership of one of the largest land banks spread across the country, as well as other fixed immovable properties like its housing colonies, etc.. Identified immovable properties can be transferred to an SPV, which can be structured as a REIT (Real Estate Investment Trust), wholly owned by IR or in conjunction with domestic financial institutions. Concomitantly, an independent, expert agency would be identified for valuation as well as asset management for the SPV. This agency under guidance of the Board of Trustees would determine how these parcels will be offered to developers in terms of sizing of individual parcels, end-uses prescribed /restricted, etc. These could be in the form of 30 years leases, JDA, own development, etc. This SPV can issue instruments against security of these assets. Applicable investor segments would then depend on rating assigned to the SPV. The SPV would also need certain minimum net worth infusion by IR, which is a key requirement for investors to establish investment limits. Also, legal issues such as the transfer of leased assets need to be ascertained. For this SPV to obtain a dual AAA rating, with 1.0x asset cover, a Comfort Letter or back stop from GOI may be required to provide comfort, in case asset sales / long term leases are unable to realize required amount. The issue pricing can be similar to AAA rated PSU benchmarks. SEBI can be requested to consider a lower threshold of operating asset criteria for the Railway REIT. This will broaden the investor base and provide retail investors another avenue of investment. IR can also transfer immovable assets to a railway owned SPV. This can include housing colonies, office spaces, stations, etc. It can then rent these premises back from the SPV, which can then securitize the rentals, in a REIT structure. Currently, the gearing limit for REITs in India is set at 50%.

7.29 Station Development: Station development is a special form of real estate development. On the Central Railway, in association with CIDCO, the Seawoods station in Navi Mumbai is being developed. CIDCO had awarded the concession to L&T in April 2008, but permissions from the Commissioner of Railway Safety came almost four years later. L&T had acquired 162,000 sq. metre of land from CIDCO in consideration of a long-term lease payment of Rs. 1809 crore. There is potential to develop 4 million sq. feet of usable space. The project consists of a modern railway station, large format retail and entertainment space, multiplexes, office complex, and premium category hotel and service apartments, and project revenues are estimated at Rs. 3,500 crore. In this model, L&T will build the station, hand it back to CIDCO, which will then invite IR to lay the tracks. In a related structure, the New Moti Bagh residential complex in Delhi was built using proceeds from the sale of commercial space in a part of the area to be redeveloped. Other such initiatives have been done by NBCC. To begin with, these models can be explored for all new stations, especially those in urban areas. However, for this to be successful, the permitting process needs to be streamlined. Also, as mentioned later, these may be best implemented as joint ventures with the state government, or the competent authority for planning purposes. IR had initially planned to take up redevelopment of 50

railway stations to world-class standards through Public Private Partnerships (PPP). Railway station projects were to include: (a) redevelopment of the Railway station, including development of real estate; (b) operation and maintenance of the Railway station; and(c) construction of building for use by the Railways for its offices, rest houses and residential accommodation. However, these ran into major hurdles related to obtaining statutory clearances from the local authorities as well as due to extreme congestion in the infrastructure required to support the expansion. The selection of the stations needs to be taken up, not unilaterally by the Railways, but jointly with the local state governments, which is critical for the success of the project. This Committee recommends that in respect of development of Railway Stations, the concept of IR developing models and their inviting bids may be given up. Instead, Expression of Interest may be invited from potential users of land around each station and a partnership agreement worked out with selected bidders after following a transparent process. The State Governments may be drawn into this process as active participants.

7.30 An acute problem being faced by IR is the encroachment, trespassing and open defecation in the areas along the railway tracks. These tracks run for miles altogether without any protection against trespassing by humans or animals. Closer to cities , at their outskirts, these unprotected tracks pose a bigger menace as there are a larger number of people randomly crossing them , defecating along them and even building hutments/ encroachments alongside. These individuals do not realise that they are endangering their own lives as well as the lives of the passengers in the trains.

This Committee, therefore, recommends that IR may consider putting up billboards along the tracks after identifying the sections which are prone to trespassing and open defecation. This will not only ensure some additional revenue for IR but also act as a preventive facade against the problems described. The bill boards would also help block eyesore spots and at the same time attract the attention of the train passengers.

Extracts from : ***Nine Lives: The birth of Avant-garde Art in New China***

Undeterred by the lack of fruitful results the first time around, Fang LIjun approached the directors of district Railway Union with the idea of opening a Railway Advertising company. “They were interested in my plan. The problem was I was only thinking in rudimentary terms, like how to set up advertising boards that people would notice”. He had not considered how to protect the idea and secure the franchise. The intention was to post bill boards along the Railway tracks, which was an innovation for the (Chinese) times. “It was funny that although those district (Railway) leaders were completely institutionalised in their habits and experience, for some benevolent reason they appreciated initiative. So they offered money and negotiated the sites for the billboards when I needed. I was able to focus on procuring clients and designing the advertisements. It went so well that people began to take notice.” This innovative idea was too good to be placed in the ‘inexperienced’ and ‘powerless’ hands - meaning those of someone who had no social position or network (*Guanxi*) to support him – of a young upstart, and shut the start up down. But Fang Lijun had demonstrated the potential and the regional railway unit heads wasted no time in re-establishing the venture themselves.

7.31 Sale and Lease Back of Non-Land Assets: IR has a number of other assets that can be leveraged to raise revenue. Two such examples, based on existing practice, are (i) rolling stock and (ii) track. As noted above, rolling stock today is almost entirely leased from the IRFC, which issues bonds to finance their purchase. However, there is an older complement of rolling stock that is not leased. This comprised, as of March 2014, 1533 diesel locomotives, 2980 electric locomotives, 13,000 coaches and 93,250 wagons. This rolling stock can be sold to IRFC (or other leasing companies) and leased back from them. This would generate resources for investment which can then generate the revenue to service the lease. Track can also be similarly sold and leased back. Indeed, Konkan Rail Corporation has earlier, done such a transaction. This again generates investible resources. However, the key here is to ensure the investible resources are spent on productive assets that lead to increased revenue in the future. Given the focus of the existing budget on doubling, gauge conversion, electrification, signalling and de-bottlenecking, this could be an opportune moment to use such strategies.

7.32 Sale of Equity and the Consolidated Fund of India: IR has thirteen undertakings in which it holds either the entire or a substantial stake. Of these, only CONCOR is listed. Today, the market valuation of CONCOR is Rs. 30,000 crores; 62% of which is held by the government. Even a 10% disinvestment would fetch Rs. 3,000 crores. Similarly, there are other corporate entities, including RITES, IRCON, IRCTC, etc., which can be listed. As mentioned earlier, IRFC can also seek investment from the newly announced NIIF. Of particular importance is the sale of equity in DFCC to entities such as NTPC and CIL so that it is made more autonomous and customer-focused. The issue here is whether such proceeds will accrue to the IR. Even though the investments in these entities were from the IR budget, it is possible that disinvestment proceeds will accrue to the Consolidated Fund of India (CFI). This issue needs to be investigated further. However, in this case, it is possible to agree with Ministry of Finance that proceeds of disinvestment in IR invested entities would accrue to the CFI, but would be transferred to IR, as part of the annual budget allocation.

Resource generation through joint ventures

7.33 Joint Ventures with State governments for suburban rail - Certain activities of IR are specific to certain geographical areas. Some of these may be non-remunerative in nature, while being of social value to the population of that geographical area. These include, for example, the operation of suburban and branch line services. However, other such activities, e.g., station development, whether or not implemented with private participation, can be remunerative. These projects often need to be carefully attuned to local conditions and also satisfy many local regulatory requirements. If these are separated as special purpose vehicles (SPVs) involving joint ventures (JVs) with the respective state / local governments, it will permit greater involvement by the states in the governance and provision of this service and permit it to be priced more appropriately. This will also be in the government's overall spirit of cooperative federalism. Already, pursuant to the Minister of Railway's statements on the subject, a cell has been

established in the Railway Board to explore possibilities of such JVs. This process would be even easier if accounts of specific sections could be separated. For example, concomitantly with the move to commercial accounts, accounting for all suburban services and identified branch lines could be separated over the next two years, in preparation for inviting state / local governments as JV partners for such activities.

7.34 Joint Ventures with State governments for local railways - In Japan, low density railway lines are operated by so called "Third Sector" railway companies, which are jointly owned by the public and private sectors. In cases where operations do not cover costs, the public sector subsidizes the service to make it attractive to the private sector investor. In 1987, Japan reformed its heavily loss making Japanese National Railway, by dividing it into regional railways, creating a commercial environment in which they would operate, and transferring accumulated debt to a settlement company. At first, the stock was held by the public sector, but after they began showing positive financial results, shares were progressively sold to private investors. The privatization was completed in 2002 for JR East, 2004 for JR West and 2006 for JR Central. IR has already started JVs with states such as with Karnataka on the Hassan Mangalore Rail Corporation. Similar efforts are also on with other states. Here, it is possible that some of the uneconomic branch lines which have high local salience for the state could be spun off into joint ventures with state governments.

7.35 Joint ventures with Large Users and Ports - IR PSUs are undertaking several projects both within the country for IR and Non- IR customers as well as for railway system abroad. These companies have acquired considerable expertise in turn key (EPC) execution of contracts and seem to perform far better than the IR's own departmental execution track record. These companies have surplus cash and should be induced to take up commercially viable projects on a turn-key basis, even in partnership with other public sector units. The repayment mechanism could vary from annuity repayments to a stream of revenues attributable to the project, provided the same can be objectively and clearly determined in a transparent manner. This should be possible for specific cargo, such as coal, cement, etc. Financing of Eight capacity enhancement projects providing port connectivity and coal connectivity have has been successfully tied up and financial closure achieved by the SPV. These are shown in Table 7.8. Here it is possible that some large users or port trusts may wish to invest in lines on their own, rather than through the deposit works route that is currently the practice. In these cases, IR should facilitate their connectivity to the IR network, since it would attract traffic to IR, without additional investment from IR itself.

7.36 In this connection, one should mention a point about work charged posts. The Ministry of Railways is continuously expanding posts through creation of work charged posts. Though Government guidelines very clearly specify that the creation of any Joint Secretary and Additional Secretary post needs the concurrence of Finance Ministry, IR continues to operate an abysmally large number of such work-charged posts. This tendency to inflate cadres needs to be curbed immediately. Though the work-charged posts are ostensibly created for projects/specific works to facilitate smooth and timely

execution of sanctioned works, some of them have been continuously in existence for decades now. There is a provision for Departmental & General (D&G) charges for establishment in sanctioned estimates. As on 1/1/2014 there was 6469 work charged Group 'A' and 'B' level posts in IR, in addition to the regular sanctioned cadre of 10490 posts - a staggering more than 50% of the regular Railway cadre authorized by DOPT and Finance Ministry. It is a matter of concern that such large number of work charged posts continue to exist in IR at all levels. What is of more concern is the fact that some of these posts are also utilized for operation and maintenance of new assets. The aberrations have got accentuated mainly because it is commonly perceived that creation of a work charged establishment is much easier as compared to creation of regular revenue charged posts, which attracts ban orders of the Government, and would require relaxation from the ban orders at the level of the Ministry of Finance or the Cabinet in some cases. We feel that the present situation is not optimal and needs to be rectified. With construction activities moving to professional PSUs exclusively created for project execution, harboring such a large work charged establishment is not justified and this Committee recommends that this be progressively disbanded and the balance officials sent on deputation to the PSUs for project execution.

Resource Generation through PPP

7.37 IR did attempt some forays into PPP projects for setting up two new Locomotive factories at Madhepura and Marhowra, station development and some Port connectivity projects, but met with limited success. Barring the port connectivity projects, others are yet to even take off. This indicates a lack of institutional capacity and appetite for PPP. In the case of production facilities, the identification of specific locations like in the case of Madhepura and Marhowra, and social demands, etc. is probably over-specifying the conditions for the private sector, and would lead to demands for higher compensating off-take guarantees. Implementing these in a PPP structure, rather than as long-term private procurement, is probably not sensible. Instead, it may be better to scale up projects either using availability based payments, known in India as BOT-Annuity or the LPVR structure. BOT-Annuity can lead to 'white elephant' projects, since lenders and concessionaires need not conduct due diligence on usage risk. However, since railways revenues are relatively accurately measured, Least Present Value of Revenue (LPVR)[57] contracts are another option. In LPVR contracts, the bid is based on the lowest present value (discounted at a pre-announced rate) of total (gross) revenue received by the concessionaire. The concession continues until this is received. The concessionaire's tariffs can either be actual or shadow tariffs, where there is a divergence between actual tariffs collected from the user and payments made to the concessionaire. This allows actual tariffs to be altered, e.g., to take market conditions into account, without affecting the concessionaire's cash flow. A major advantage of this is that it converts usage risk, to risk of contract duration, which can be managed by financial institutions. Further, by

[57] Engel, Fischer, and Galetovic (1998, 2000).

limiting the scope for renegotiation, to the remaining uncollected value of the LPVR, it discourages opportunistic behaviour by bidders. In addition, since the present value is protected, even if the term is variable, this is an asset that would be acceptable to pension and insurance funds. Since the bid is on gross revenue, this also selects bidders with a favourable mixture of ability to execute at low cost and accept relatively lower margins. Also rather than prescribing model concession agreements, if states enter into joint ventures, they can be encouraged to experiment with alternatives, such as modified BOT-Annuity models, which some are using for road projects.

Table No 7.8: Railway SPVs

PRCL (Pipava Rail Co. Ltd) Project Cost Rs. 294 crore	• 50 per cent equity by Ministry of Railways. • 50 per cent equity by SPV partners; balance by debt funding. • Operations and maintenance by Western Railway at SPV's cost. • SPV to receive share of earnings in accordance with the rules of inter-railway apportionment of earnings/freight tariff collected.
VMPL (Viramgram-Mehesana Project Ltd) Project Cost- Rs. 63.39 crore	• Project was executed by the Special Purpose Company (SPC) on BOT basis. • IR is required to pay the annual access charges of 15.94 crore for 12 years. • Operations and maintenance with Western Railway . • Project earning to be retained by IR.
HMRDC (Hassan-Mangalore Rail Dev. Co.) Project Cost- Rs. 278.71 crore	• 41 per cent equity by Ministry of Railways. • 59 per cent equity by SPV partners and/or balance by debt funding. • Operations and maintenance by South Western Railway at SPV's cost. • SPV to receive share of earnings in accordance with the rules of inter-railway apportionment of earnings/freight tariff collected.
Kutch Rail Co. Project Cost- Rs. 344.63 crore	• 50 per cent equity by Ministry of Railways. • 50 per cent equity by SPV partners and/or balance by debt funding. • Operations and maintenance by Western Railway at SPV's cost. • SPV to receive share of earnings in accordance with the rules of inter-railway apportionment of earnings/freight tariff collected.
HPRCL (Haridaspur-Paradip Rail Co. Ltd.) Project Cost- Rs. 598 crore	• 48 per cent equity by RVNL • 52 per cent equity SPV partners and/or balance by debt funding. • Operations and maintenance by Railway at SPV's cost. • SPV to receive share of earnings in accordance with the rules of inter-railway apportionment of earnings/freight tariff collected.
KRCL (Krishnapatnam Rail Co. Ltd.) Project Cost- Rs. 588 crore	• 30 per cent equity by RVNL (PSU of IR) • 50 per cent equity by SPV partners and/or balance by debt funding. • Operations and maintenance by Western Railway at SPV's cost. • SPV to receive share of earnings in accordance with the rules of inter-railway apportionment of earnings/freight tariff collected.
BDRCL (Bharuch-Dahej Railway Co. Ltd.) Project Cost- Rs. 395 crore	• 28 per cent equity by RVNL (PSU of IR) • 72 per cent equity by SPV partners and/or balance by debt funding. • Operations and maintenance by Western Railway at SPV's cost. • SPV to receive share of earnings in accordance with the rules of inter-railway apportionment of earnings/freight tariff collected.
ASRL (Angul-Sukinada Railway Ltd.) Project Cost- Rs. 818 crore	• 45 per cent equity by RVNL (PSU of IR) • 55 per cent equity by SPV partners and/or balance by debt funding. • Operations and maintenance by Western Railway at SPV's cost. • SPV to receive share of earnings in accordance with the rules of inter-railway apportionment of earnings/freight tariff collected.

7.38 There is a need to relook at the engagement with the private sector, both foreign and domestic, in IR. This is not simply a matter of allowing, but of redefining the manner in which business with the private sector will be conducted. They can bring in technology, capital, and productive management practices to help modernize IR if the relationship is successfully managed. Successfully inviting private sector participation has many dimensions. The procurement process should involve announcing aggregate off-take from IR over the next few years and switch from one year contracts to longer duration contracts. This will facilitate investments by providing predictability and certainty to the private sector and ensure better quality and vendor development. Once the processes and, more importantly, the relationship with the private sector is on a more even keel, there is no reason to believe that far larger investments cannot be attracted to cover a more extensive array of investment in infrastructure, production of goods and delivery of services across the railways eco-system. However, there are three prerequisites for such entry to become attractive and viable for the private sector. First, in its procurement processes, IR does not take adequate care in drafting the technical specifications. Since everything gets determined by the subsequent consideration of L1, this leads to apples being compared with oranges. This needs to be addressed to create capability within the organization, with outside assistance if necessary, to frame specifications in a need-based manner and precisely and unambiguously. Second, there must be put in place a system of switching from one-year contracts to longer-duration contracts. This is true not only of procuring rolling stock, but of procuring everything. Contracts of longer duration ensure better quality and vendor development by offering better assurance of cost recovery on upfront investments of vendors. Of course, the other related aspect of not stifling competition in the form of new entrants being added to suppliers list will need to be taken care of too. Third, moving back to procuring rolling stock, while there is no need to guarantee an assured off-take to a specific company, keeping in view the in-house production capacity and demand requirements, there is no reason why IR cannot pre-announce that a certain number of rolling stock will be purchased over the next few years. That guarantees an overall market, without a buyback commitment from a specific company.

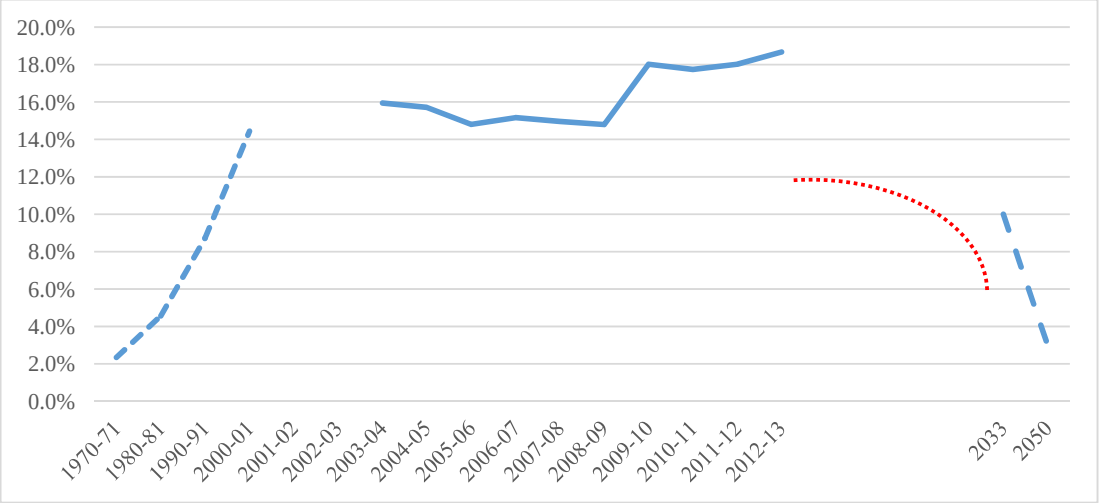
Concluding Comments

7.39 Refinancing Pension Obligations - One of the major items of Railway revenue expenditure today is pensions. As shown in Figure 7.7, almost a fifth of revenue expenditure is accounted for by pensions. This year, a budget allocation of Rs. 34,900 crore, or about 22% of working expenses, has been made towards appropriation to pension fund, almost all of which will be expended on pay-outs. However, one of the consequences of moving to a defined contribution pension scheme, as compared to the pre-existing defined benefit scheme is that, in the distant but predictable future (say in 2030), IR will have a significantly reduced and eventually zero pension obligation, as the cohort of personnel who are eligible to receive pension reduces. Indeed, if the restructuring yields suitable results, the obligation, as a share of revenues, should decline

substantially even earlier. The question is whether this current hump of pension obligations, as a share of expenditure, can be smoothened out with financial engineering, thereby releasing substantial additional resources for investment and operational requirements. This is possible. One such suggestion is explored in the box that follows.

7.40 IR has now recently chalked up an ambitious investment plan for the next 5 years (Table 7.9) in which very substantial private investment is envisaged. Building an institutional capacity for timely execution of PPP projects thus assumes a greater significance. This Committee recommends that for raising resources for investments, an Investment Advisory Committee may be set up, consisting of experts, investment bankers and representatives of SEBI, RBI, IDFC and other institutions. The existing assets of IR may be leveraged to raise resources and institutions created like InviT, NBFCs. The modalities by which returns can be secured for such investments should also come under the purview of this Investment Advisory Committee.

Box 7.7: Refinancing Pensions



Source: Indian Railway Budget documents

A number of previous Committees have recommended that this pension liability should be borne, fully or partially, by the Union government. However, this has not been accepted in the past. While efforts to pursue this avenue should continue, it is prudent to explore other options to address this expenditure obligation.

At the simplest level, a long-term bullet bond or a zero-coupon bond, as discussed earlier, i.e., a bond whose repayment (including interest and principal) is at maturity can be issued to meet a part (the exact share would need to be determined through a detailed modelling exercise) of the current pension obligations. This would reduce the existing obligation while increasing the obligation at a time when the claims on revenue are less. In lieu of bearing the pension liability, these bonds could be guaranteed by GOI in order to reduce costs, and could also be made tax-free. The exact instrument can be more sophisticated and structured than a bullet bond, but implementation of this strategy would need a few prior actions.

First, this would require an extensive actuarial modelling to forecast the pension obligations of IR for the next thirty year in order to structure these instruments. Second, it would also require a vehicle such as a separate Railway Pension Fund. Third, IR would need to commit to transfer funds needed to meet a part of the pension obligations (set at a lower share of revenue than currently) to the Fund for an extended period of time, which can then raise the remaining resources required to meet the pension obligations for that year by issuing structured instruments, as above, to which pension and insurance funds can subscribe.

Table 7.9: PROPOSED INVESTMENT PLAN (2015-2019)

Items	Amount (Rs. In crore)
Network Decongestion (including DFC, Electrification, Doubling including electrification and traffic facilities)	199320
Network Expansion (including electrification)	193000
National Projects (North Eastern & Kashmir connectivity projects)	39000
Safety (Track renewal, bridge works, ROB, RUB and Signalling & Telecom)	127000
Information Technology / Research	5000
Rolling Stock (Locomotives, coaches, wagons-production & maintenance)	102000
Passenger Amenities	12500
High Speed Rail & Elevated corridor	65000
Station redevelopment and logistic parks	100000
Others	13200
TOTAL	8,56,020

Summary of Recommendations and Epilogue

(This interim report is being place at http://www.indianrailway.gov.in for inviting stakeholder comments and views for consideration in the final report. The suggestions inputs may please be emailed to : railwaycommittee@rb.railnet.gov.in and railwaycommittee@gmail.com by 30th April 2015)

The organizational restructuring of IR will be a mammoth task, impacting the entire organization. As such, successful restructuring of IR will require, as a prerequisite, continued and committed support at apex levels; use of effective "change management" and "internal communication" strategies; involvement and buy in from various stakeholders, and strengthening of the human resource function to enable it adequately support the management. It is also strongly recommended that implementation should not be left to the existing directorates of Railway Board. Otherwise, this report is bound to confront a fate similar to its predecessors. We would suggest that the implementation ownership of this Report should vest in the Minister of Railways alone, with an appropriate reporting mechanism to the PMO. It has to be ensured that once decisions are taken at the apex level, these must be earnestly implemented without delays and within predefined targeted timelines.

This Committee is of the opinion that the recommendations that have been made are closely inter-linked, such that the realization of the benefits of implementing a particular recommendation will depend upon implementation of other recommendations also. Thus, it is suggested that various recommendations should be implemented as a package rather than by a process of 'pick and choose'.

We also recommend setting up of a strong formal implementation and monitoring mechanism. Given the large scope of the changes being proposed, the sheer size of the organization and the fact that implementation of the recommendations would need to be appropriately phased over a period of time, it is also suggested that a dedicated cross functional monitoring team be set up in the Ministry, directly under the Minister's office, by inclusion of officers with expertise in this area and functional domain knowledge. Since there are areas where IR may not have all the domain knowledge required, co-opting experts from outside the Railway system should be encouraged. This team should be tasked with not only the day to day monitoring of progress of implementation, but also for resolving any doubts, disputes, cross functional coordination, analyzing and proposing any changes that may be warranted and for interaction with other Ministries. Further, if necessary, a body of independent outside experts should also be set up to guide and help in the implementation exercise.

As was mentioned earlier, we will spell out the detailed time sequence of restructuring in the Final Report. For the moment, the Committee expects the following kind of time-lines.

- Immediate – Liberalization, or the allowing of private entry; changes in the composition of the Railway Board.
- 0-2 years – Decentralization to zones/divisions; cleaning up finances between Union government and IR.
- 2 years – Reform of RPF, schools and medical services; transition to commercial accounting, reform of production and construction units.
- 3 years – Changes in the Railways Act and the Railway Board Act, setting up a Regulator; unified entry into the Railway services; resolution of social costs.
- 5 years – Bifurcation between Railway Infrastructure Corporation and rest of IR as train operators; end of the Railway Budget.
- 7 years – Transition of the IR that operates trains to a government-owned SPV.

Summary of Recommendations

- To enable proper decision –making, the IR needs to adopt a commercial accrual-based double entry accounting system. This will help determine the precise extent of subsidization.
- For national projects and projects on cost-sharing basis there should be cleaner bearing of the subsidy burden between the Union government and State governments on the one side and IR on the other, covering not only capital investments, but also operating losses.
- Any increase in passenger fares should be accompanied by better passenger services and amenities.
- Standards should be notified for various services such as reservations/bookings and refunds, dissemination of information about time-tables and running positions of trains, catering, cleanliness, off-board amenities (waiting halls, platforms, refreshment rooms), on-board amenities (lighting, berths/seats, toilets), redressal of public grievances and accident management.
- There is a need for a relook at the composition of the Railway Users' Consultative Committees, set up at various levels, and at what they are meant to do. Organizations like the IRFCA (Indian Railways Fan Club Association) could be roped in to provide broader client feedback and act as brand ambassadors for IR.
- A Railway Infrastructure Company should be created as a government SPV (with a possibility of disinvesting in the future) that owns the railway infrastructure, delinked from IR.

- A provision needs to be made for open access for any new operator who wishes to enter the market for operating trains with non-discriminatory access to the railway infrastructure and a level playing field.
- Amendment in the Indian Railways Act will be required to allow the levy of tariffs by private operators without administered tariff-determination and fares being left to the market, with a qualification about passenger fares with guaranteed standard of services to a particular passenger class, such as ordinary sitting class and sleeper class.
- As an end goal, suburban services should be separated and run as JVs with State and/or local governments, with tariff determination by State and/or local governments. But until that end goal is achieved, suburban passenger traffic could also be subject to similar principles.
- It is imperative to split the roles of policy-making, regulation, and operations. There should be clear division of responsibility between the Government of India and railway organizations. The Ministry will only be responsible for policy for the Railway sector and Parliamentary accountability and will give autonomy to the IR.
- The Ministry of Railways to determine the policy which should be based on ensuring what is in the best interests of the country as a whole and for the Railway sector, and not based on what is the interest of IR alone. That policy should ensure competition in the Railways sector and encourage private entry and private investments.
- Set up a Railway Regulatory Authority of India (RRAI) statutorily, with an independent budget, so that it is truly independent of the Ministry of Railways. The RRAI to have the powers and objectives of economic regulation, including, wherever necessary, tariff regulation; safety regulation; fair access regulation, including access to railway infrastructure for private operators; service standard regulation; licensing and enhancing competition; and setting technical standards. It should possess quasi-judicial powers, with appointment and removal of Members distanced from the Ministry of Railways.
- The Commissioner of Railway Safety needs to be integrated with, and subsumed under, the RRAI.
- RRAI should also be given the task of overseeing rules and norms that ensure fair competition for SPVs that have been created through railway connectivity projects.
- There should be a bifurcation of the dual role played by RDSO (Research, Design and Standards Organization) as a R&D organization of IR and technical advisor to the Railway Board and as a standard-setting organization. Whereas the setting of standards should come under the ambit of the RRAI, the technology role for IR can remain with IR, or alternatively be clubbed with the Railway Research Centers that will now be set up in selected universities.

- There should be an Appellate Tribunal which will hear appeals against the orders of RRAI and further appeals against the orders of the Appellate Tribunal can be directed to the Supreme Court.
- Restructuring of Indian Railways to be done by: (a) Changing the institutional arrangements between the government and the Railways, and (b) Introducing competition in the functioning of the Railways.
- Private entry into running both freight and passenger trains in competition with IR should be allowed and private participation in various Railway infrastructure services and non-core activities like production and construction, should be encouraged by the Ministry of Railways.
- To encourage competition following steps need to be taken:
    - Decentralization, particularly for local passenger services (i.e. suburban or non-trunk routes), which rarely cover costs, but which local governments may wish to subsidize.
    - Separation of rail track from rolling stock and unbundling the former.
    - Separation and unbundling of non-core as well as peripheral activities.
- Ultimately, unbundling of IR into two independent organizations: one, responsible for the track and infrastructure and another that will operate trains.
- IR should focus on core activities to efficiently compete with the private sector. It will distance itself from non-core activities, such as running a police force, schools, hospitals and production and construction units.
- Private sector participation can be implemented in the form of Service Contracts, Management Contracts, leasing to the private sector, leasing from the private sector, concessions, joint ventures and private ownership.
- There are three broad ways in which a private company can get involved in the "competition for the market": a private company may (i) receive a flat fee for management, without any responsibility for investment (service contract); (ii) do O & M, with a limited responsibility for investment (O & M contract); and (iii) have complete responsibility for procuring and operating a train or constructing and operating a physical infrastructure (such as terminal or laying of tracks), and financing necessary investment at its own risk (concessions).
- Shift regulatory responsibility from the government to an independent regulator as the private sector will only come in if there is fair and open access to infrastructure. The independent regulator shall ensure fair and open access and set access charges; establish tariffs in cases where there the market fails to discover a price; and adjudicate disputes between the track-owning organization and train operators; and

between competitors. This will make make fair and open access a reality and open up both freight and passenger trains, in competition with IR.

- Delink of RPF from the IR system. This is not necessarily a recommendation for dismantling the RPF, per se, but to considerably downsize and bring in private security for protection of Railway property. In fact the GM of the zone should be free to use private security agencies or even the RPF, on contractual terms as a matter of conscious choice.

- IR should begin a process of negotiations with State governments, so that the 50% contribution by IR to the GRP is phased out over a mutually agreed period of time.

- Immediate integration of the existing Railway schools into the Kendriya Vidyalaya Sangathana set-up. Instead the needs of the children of Railway employees could be met through subsidizing their education in alternative schools, including private schools.

- For the IRMS, a calibrated restructuring, with a phased, but sharp, pruning of the IRMS functions and numbers. The IRMS can continue to perform the the functions of attending Railway accidents and similar incidents; emergency medical treatment for sick passengers; running medical first-aid posts for IR factories under the Factories Act; certification of dead bodies; and certification of perishable goods.

- The following functions can be performed by outsourcing to recognized and empanelled private practitioners.

    - pre-employment medical examination for prospective employees
    - periodical medical examination for employees
    - medical boards and other medical certification for employees
    - safe water supply at Railway stations
    - safe food supply at Railway stations

- For curative health-care and preventive health-care, the possibility of integrating the 125 railway and hospitals into the CGHS framework should be examined, with the possibility of some of them transiting to a PPP mode and possible conversion to teaching institutions Further, subsidized health-care should be extended to Railway employees in more and more private hospitals, and not merely for referral purposes. It needs to be stressed that this treatment for existing Railway employees is cashless and is not on reimbursable basis. It also covers not just in-patient services, but also OPD treatment, including access to medicines.
- Introduction of an insurance surcharge on tickets, perhaps as an interim measure. This will cover travel-related emergencies, including Railway accidents and will facilitate the use of private hospitals and doctors and gradually reduce the need for passengers to depend on IR doctors.

- All these existing production units should be placed under a government SPV known as the Indian Railway Manufacturing Company (IRMC) under the administrative control of the Ministry of Railways. No privatization need be contemplated, at least initially. The Independent Directors on the IRMC Board will be chosen by the Public Enterprises Selection Board (PESB). All the perks benefits of the existing employees must be protected in the transition even if a one- time exemption is to be sought for the same.

- In addition to Madhepura and Marhora, private entry should be permitted for the proposed units in Rae Bareli, Bhilwara, Sonepat, Chhapra, Jalpaiguri, Kanchrapara and Kerala.

- IRMC and its Board should take a decision on commercial considerations regarding a better incentive structure for new employees. Ideally, an incentive system works best when it incentivizes individual-based productivity linked to a better final output. For IRMC, a group incentive scheme can be worked out, which works at the production unit level. In addition to being based on physical indicators of performance (output), the incentives can factor in indicators based on the financial performance of the production unit also. The pay and other benefits of the existing employees must be protected under the new system.

- It would be desirable to bring all the Zonal Construction organizations under the umbrella of one or more PSUs, like RVNL, IRCON etc. This would not only improve the speed, efficiency and quality of execution, but would also result in considerable downsizing of the organization.

- There is a need for some rationalization between the intentions of paragraph 46 of the Budget Speech for 2015-16 regarding opening up of station development to private sector, and the work of RLDA and IRSDC.

- For dealing with issues related to station development such as changes in land use and municipal clearances, this Committee recommends that all Zones/Divisions should adopt the system that has been evolved by CR(Central Railway), where a co-ordination committee has been created, and this co-ordination committee meets on a fixed day of every week.

- There is a need to streamline the present system for cleaning (stations, tracks and trains), whether done departmentally, or through out-sourcing. Contracts should be longer term and there should be decentralization and streamlining of responsibility, so that it can be pinned down. This is especially the case with stations and tracks.

- BWEL should be either revived or closed down, while BSCL and BCL should be brought under the Indian Railway Manufacturing Company (IRMC).

- It is felt by the Committee that instead of giving preference to departmental execution, more efforts need to be made to harness the role of the PSUs such as RITES, IRCON, RCIL, IRCTC and RVNL for expanding IR's capacity, in terms of both rolling stock and infrastructure.

- An ex-cadre post of a Chief Technology Officer (CTO) needs to be created, reporting directly to the Chairman of the Board and all IT initiatives should be integrated and brought under the umbrella of this directorate exclusive of any departmental handling in Board.

- There are too many Zones and Divisions and thus a rationalization exercise is required. Further, Kolkata Metro should not be treated as either a Zone or as a part of IR.

- To ensure proper decentralization, there is a need to delegate enhanced powers, especially in respect of tenders connected with works, stores procurement, service or even revenue-earning commercial tenders, to the DRMs. The Committee, therefore, has the following suggestions:

    - When a monetary ceiling is set on the financial powers of DRMs, it should not be set in absolute monetary terms, but should in some fashion be inflation-indexed, so that the monetary value automatically increases over time.
    - If the earnings target is achieved, there should be a provision for re-appropriation across the budgetary or Plan heads. This re-appropriation power should cover within the same demand, between Railway Funds that are under the same Plan head and between Plan heads that are under the same Railway Fund.
    - Some earnings by the Division should be retained at the level of the Division, to be spent on specific purposes. For instance, earnings from commercial publicity can be earmarked for station up-keep, earnings from demurrage and wharfage can be earmarked for goods sheds and earnings from parcels can be earmarked for facilities at parcel loading points.
    - DRMs should have powers to sanction new posts that are financially neutral (created against surrendered posts).
    - Finance must completely be under the DRM.
    - To the extent RPF remains in a downsized form, it must remain under DRM.
    - ADRMs should be an explicit part of the administrative chain. (For example, the Annual Performance Appraisal Report (APAR) can be initiated by the ADRM, reviewed by the DRM, counter-signed by the PHOD and accepted by the GM.)
    - Before registering a vigilance case, one should ascertain the views of the DRM.

- In general, before registering a vigilance case, views should be sought from at least three higher reporting levels.

- At the level of the Division or the Zone, there should be a switch towards e tendering, with an emphasis on long-duration (say 3 years) rate contracts.

- All A1 and A type stations should be manned by gazetted officers as station managers. This will also enable Group A services to have mandatory exposure to working at the grass-roots level in stations earlier in their careers, perhaps for 2 years. In the Junior and Senior time-scale, these posts will have to be re-designated as general posts. Supervisors and other staff who work in the stations will report to their departmental divisional officers only through the station manager.

- The head of the Zone (GM) must be fully empowered to take all necessary decisions without reference to Railway Board within the framework of policies. The powers of each Zonal Railway must suffice and be conducive for monitoring of day-to-day operations, including maintenance of fixed assets, as well as rolling stock; development of the infrastructure such as construction/up-gradation of stations and designing and construction of platforms based on the current and projected traffic volumes; addition or removal of trains between routes; upgrading of rail infrastructure on their zones; managing finances, and; monetizing Railway land under their jurisdiction. Within the revenue budget financial outlay, the Zonal Railways should have full powers for expenditure; re-appropriation and sanctions, subject to it meeting its proportionate earning target.

- Ultimately, the Railway Board should become like a corporate board for IR. The Chairman of the Railway Board should thus be like a CEO. He/She is not first among equals and should therefore have the powers of final decision-making and veto (in the case of a divided view). The suggested composition of the revamped Board could be: (a) Member (Traction & Rolling Stock); (b) Member (Passenger &Freight Business); (c) Member (HR &Stores); (d) Member (Finance & PPP); (e) Member (Infrastructure); and two outside and independent experts. Member (Finance & PPP)) and Member (HR & Stores) need not necessarily be from inside the IR system and lateral induction from the outside should not be ruled out. The Chairman, (a), (b) and (e) should be from inside the IR system. An individual should be appointed as Chairman or Member only if he/she possesses at least 3 years of service left. (This clause should also apply to appointment as GM.)

- This Committee recommends that Railway Board Secretariat Services (RBSS) and the Railway Board Clerical Services (RBCS) be merged with the Central Secretarial Services.

- Refinements in the way IR prepares and maintains accounts, and costs its businesses, activities and services. The financial statements of IR need to be re-drawn, consistent with principles and norms nationally and internationally accepted. Casting accounts

in standard commercial accounting format and making appropriate financial disclosures would not only facilitate prospective investors in assessment of risk and decision on their possible investment forays into IR but would also help IR to quantitatively assess impact of policy interventions on cost of various services.

- Immediate follow up action on the recommendations of the consortium of Consultants appointed by the IR with a mandate to restructure the existing accounting system. While doing so, seek national and international practices and obtain professional help, if necessary.

- The movement away from an approach centered on fully distributed cost to a concept of direct costs, indirect costs and marginal costs needs to be carefully steered. Necessary mechanisms and protocols have to be established for concept of 'user pays', be it for the service or products of IR or internal customers of the organization. It is along these lines that the LOB and LOS needs to be designed.

- Undertake a meticulously and executed exercise for bringing all assets to the book, not only in terms of enumeration but also their valuation. A policy for asset enumeration and the form in which it shall be maintained across the organization in various asset classes needs to be clearly laid out. The whole exercise must conform to the generally accepted accounting principles.

- An adequate fund provisioning needs be ensured to set up a robust, secure, modern, efficient and effective information technology (IT) infrastructure for ensuring success of the new accounting systems.

- Immediate corrective steps should be taken to rationalize expenditure on salaries and wages of existing employees by right sizing IR through rationalization of manpower.

- There is a need to shift focus to business/customer units like freight business, passenger business, suburban business, parcel business etc. which is essential for IR to be competitive, for its long term-economic viability, customer satisfaction and for being an adaptive/flexible organization.

- Efforts need to be made to dilute formalization by way of reducing the hierarchical decision making levels, coupled with simplification of rules and policies, with greater autonomy and empowerment to the field level organization.

- Delegation of powers should be made to the Zones/field units, particularly in areas related to day to day operations, safety, passenger amenities, traffic facility, various works and capital investment programs to be undertaken; within their allocated budgets. As such, GMs of Zonal Railways/Production Units should be empowered to take decisions, within a framework of rules and investment limits and the Zonal Railways should also be made accountable for returns on investment, output, profitability, safety and customer satisfaction.

- IR should consolidate and merge the existing eight organized Group ‘A’ services into two services i.e. the Indian Railway Technical Service (IRTechS) comprising the existing five technical services (IRSE, IRSSE, IRSEE, IRSME and IRSS) and the Indian Railway Logistics Service (IRLogS), comprising the three non-technical services (IRAS, IRPS and IRTS).

- Direct recruitment of officers to IRTechS should continue to be from the Indian Engineering Services (IES) examination conducted by UPSC, as is being done currently. Thereafter, once that new system of entry is in place, the recruitment of a few officers with degrees in Mechanical Engineering through the Special Class Railway Apprentices route should be discontinued. The promotion of Group ‘B’ officers to the Group ‘A’ IRTechS would continue to be done through the existing procedure of UPSC, the only difference being that instead of the five different seniority lists that exist currently for the five different technical services, a common seniority list of Group ‘B’ officers will be drawn up and used. IR may work out the details for this. In the event a Group ‘B’ officer inducted into Group ‘A’ has a relatively shorter residual service left, deployment could be assigned to him in the functional area of his specialization only. There will be no change in the manner of promotion of Group ‘C’ officials to Group ‘B’ posts in IR.

- If Railway Universities formed, there will be a pool of specialists in Railway engineering, recruitment to IRTechS could be done through UPSC after class $12^{th.}$ The selected candidates would be groomed in Railway Engineering in the University. Once that Railway University channel is opened up, the UPSC route should not continue.

- Direct recruitment of officers to IRLogS should continue to be from the Indian Civil Services Exam (ICES) conducted by UPSC, as is being done currently. A similar procedure as recommended for IRTechS should be followed in the case of Group ‘B’ officers inducted into Group ‘A’. Promotion of Group ‘C’ officials to Group ‘B’ posts of the accounts, personnel, commercial and operations departments should continue to be done through the existing procedure, except that for promotion to Group ‘A’ IRLogS, there will be a common seniority list drawn up of all Group ‘B’ officers belonging to different departments. As in the case of IRTechS, IR itself should formulate the detailed policy for this.

- The officers in the two services, IRLogS and IRTechS, will progress in their cadre and will undergo compulsory job/function rotations within a specified period of time, so as to gain competency in all the functions within the domain of the sub-group. However, at least in the initial years, IR can make optimal use of highly specialized knowledge/experience of any officer, without significantly diluting the job rotation requirement.

- Constitution of a new Service, Indian Railways General Management Service (IRGMS) which will be manned by officers selected from suitable/eligible officers belonging to IRTechS and IRLogS, who fulfill the laid down eligibility criteria. The selected officers should possess the requisite knowledge, competencies, and skills associated with the general management role. The selection process to be rigorous, fair, and transparent. It should comprise of assessment of record of service, psychometric testing and interview by a panel of independent General Management domain experts to be chosen by UPSC.

- A credible manner for evolving a merged seniority list of the various batches will have to be adopted in detailed consultation with UPSC. In the first instance, this will include drawing up common seniority list for IRLogS and IRTechS within the two sub-groups, and then a combined seniority list of officers belonging to both these sub-groups. In order to ensure that the gap between IRGMS and other Group 'A' officers is not too wide, it can be stipulated that the gap between IRGMS and other Group 'A' officers should not be more than 2 years and if there are no vacancies, non-functional grades will be given to the latter.

- Selection to IRGMS be conducted for officers completing 13 years of service (at the time of grant of Non-Functional Selection Grade). A merged/inter se seniority of officers be used for shortlisting officers for inclusion. The number of opportunities to be provided to the officers for induction into IRGMS be restricted to two only. For officers with length of service less than 14 years, the two chances will be provided in their 14^{th} and 18^{th} year of service and for others, the gap in the two opportunities should be either 3 years, or upon becoming eligible for next level of General Management post; Mandatory consultation with DOP&T/UPSC.

- Officers selected to man posts general management posts responsible for planning, operating, vigilance as well as ADRM, DRM at the Divisional level, AGM, SDGM and GM at the Zonal level, and a few posts in the Railway Board office also. Once selected for IRGMS, the selected officers once positioned against General Management posts, will continue to perform that role for their residual careers.

- Restructuring of the organizational pyramid be carried out by earmarking more posts for the General Management Service, particularly at the mid management levels (SG & SAG).

- Training of officers be aligned to meet these career progression requirements. Imparting comprehensive training at the induction stage for newly recruited officers, as well as appropriate gap-filling training interventions as part of in-service training at regular intervals for existing officers. The existing infrastructure of these six Centralized Training institutes (CTIs) be used for this purpose.

- CTIs require significant capacity augmentation, both in terms of physical infrastructure, as well as on the soft side like curriculum development, faculty

development etc. The CTIs should develop partnerships with leading professional academic institutions, both in India as well as abroad.

- NAIR should be assigned the status of a university for in-service training and also for imparting education/training in the field of management, offering specializations in the areas of HR, Finance, Marketing, Communications, Branding, Logistics, Transport Management and also Railway centric-areas of general management. NAIR should conduct post-graduate courses, including an executive MBA type course of one-year duration, to meet the training needs of both new recruits and those already in service.

- Lateral movement of officers, both from outside to IR and from IR to outside, should be encouraged, without adversely impacting delivery of Railway services. The lateral entry/movement should be permitted both in non-technical and technical departments, respectively based on the Central Staffing Scheme pattern. A system of balancing has to be devised so as to ensure that career advancement of Railway officers is not adversely impacted. Deputation of officers well conversant with Finance, PPP, resource mobilization etc. from other wings of the Government, can be inducted through the Central Staffing Scheme. These could be to general management and financial management posts in the Railway Board, technical posts in RDSO, as faculty to NAIR and other training institutions.

- IR should liberally allow deputation to outside organizations like PSUs of IR, through the Central Staffing Scheme, other PSUs and other organizations.

- IR, over a period of time, must migrate from the existing performance assessment system based on assessment by a single reporting authority to a group based assessment system, (for example, 360 degree assessment). Such assessment systems must also encompass annual performance target setting, target ownership (owned by the assessee), periodical performance reviews, corrective action and an independent/objective review system.

- IR needs to institutionalize credible, transparent and fair mechanisms for recognition and reward of excellence in the organization.. To be effective, the rewards will need to be tangible, in terms of having an impact by way of posting/ assignment and even career growth of employees. In exceptional cases of contribution to enhancement of systemic efficiencies, effecting significant savings, improving safety scenario etc., monetary rewards could also be considered.

- Customer/business oriented structuring of IR is essential for IR to function along commercial lines, with greater participation from the private sector. For instance, General engineering (buildings/station maintenance, telecommunication, general station/building lighting etc.), Engineering functions related to fixed Rail assets (tracks – Permanent way, track signaling, etc.) and Motive Power (All locos - Electric

and Diesel- and traction installations) and Rolling stock (coaches wagons, and all sel-propelled vehicles) could form different clusters.

- In order to empower the zonal and divisional units of IR, there should be greater delegation of power to the officers of these units and simultaneously commensurate authority would need to be given.

- Rationalization in the number of employees in by: (a) carrying out an exhaustive independent work study to arrive at the optimal number of staff required and laying down yardsticks for different activities; (b) simplifying processes, streamlining systems, rationalizing and discontinuing obsolete and low value adding activities; (c) reducing number of peons, khalasis and other such categories through rightsizing and outsourcing; (d) discounting and eliminating a number of obsolete Group 'D' categories that are no longer relevant (box porter etc.); and (e) taking steps to increase the output of such staff at the relatively lower levels whose functions are linked to safety (e.g. gangmen, trolley-men etc through multi-tasking, adoption of better technology, retraining and efficiency enhancing measures etc.).

- Norms for compassionate grounds appointments followed elsewhere in the Government, as upheld by the apex court, should be followed in IR as well. In addition, CG must be offered to the best suited member of the family and the person so appointed shall have to get the appointment 'ratified' within a reasonable period of, say two years, by qualifying in the recruitment examination prescribed for that category.

- Review the safety-related retirement scheme (SRRS) for Drivers and Gangmen.

- The provision of TADK needs to be reviewed dispassionately for its discontinuation.

- Constructing new suburban lines should be undertaken as joint ventures with State governments, not otherwise.

- Subsidies should be targeted towards those who need them. Link Aadhaar numbers for passenger when tickets are purchased. Subsidies on passenger fares to be reimbursed directly into bank accounts, for those who are targeted BPL. Such subsidies must be borne by the Union government.

- Various concessions given to passengers relate to other Ministries and the cost of the subsidy could therefore be borne by the concerned Ministry. E.g Ministry of Education (student concessions), Ministry of Personnel and Social Welfare (senior citizens), Ministry of Sports (sportspersons), Ministry of Defence (war widows) and the Postal Department (postal traffic).

- Suburban railways should ideally be hived off to State governments, via the joint venture route. Until this is done, the cost of low suburban fares, if these fares are not

increased, must be borne by State governments on a 50/50 basis, with MOUs signed with State governments for this purpose.

- The freight rates should be left to market principles, once liberalization takes hold, and no such freight-related social cost should be imposed on IR.

- The Central Government should review the dividend policy for IR and provide it with a GBS net of the dividend payment. This would enable the IR to apportion more money to its DRF for asset renewal aligned to its arising. If the 'dividend' is offset from GBS at source, the net support from the Ministry of Finance would remain the same, but it would provide flexibility to IR to use an amount equivalent to the 'dividend' for any operational purpose deemed fit and necessary.

- Financial assistance from the state governments to IR on certain specific projects. e.g. the uneconomic branch lines and suburban passenger services.

- The investment priorities have to be refocused on remunerative projects to enable generation of adequate internal resources for financing replacements of assets.

- It is very important for GOI to provide funding for projects that are commercially viable to IR not in form of grants, but as loan guarantees, so that the corporate entity implementing the project is market-focused from inception.

- Reinforcing the recommendation of the Kakodkar Committee[58] in 2012 to establish a non-fungible, non-lapsable safety fund, funded as a safety surcharge, with matching grant budgetary support.

- Separate Railway budget to be phased out progressively and merged with the General Budget.

- All projects initiated before 2000 be re-evaluated, both for sanctioned cost and for cost to completion. Based on this assessment, projects with a high ratio of cost to completion to sanctioned costs should be examined for discontinuance, since the logic of the project may have altered in the last fifteen years.

- Projects, especially those above a threshold, should progressively be transferred to a corporate construction organisation, such as RVNL, IRCON, KRCL, etc. with clear funding streams attached to each project over the next five years. This dedicated funding stream can then be leveraged by the construction organisation to raise debt and complete the project. This will enable a project finance approach to be taken to these larger projects.

- The tariffs (especially on high-valued items) should not be raised beyond the level at which the elasticity of demand for railway transport works against the interests of the

Railways. That is, the tariffs should not be so high as to drive away the customer to a competing mode of transport.

- IR must concentrate on improving productivity and efficiency, especially in its highly remunerative freight segment. For this, (i) Introduce and proliferate higher pay load to tare weight ratio wagons; (ii) Improve average speed of goods train, by use of longer trains and loco-trawl; (iii) Progressively introduce time tabling of freight trains.

- IR must encourage on-board catering through large food chains and local restaurants on the payment of a modest license fee. This can be enabled simply through web booking and thus offer customers a wide choice of local cuisine, delivered at his/her choice of station by the restaurant.

- Leasing of parcel vans and brake vans in trains through auction of carrying capacity/ Private parcel trains is recommended. Introducing Millennium Parcel Express on fixed time-tabled path. Dedicated parcel terminals to reduce interference with passenger traffic.

- Elimination of parcel loading and unloading on passenger platforms.

- Integration of Wagon Scheme (OWS), Wagon Investment Schemes (WIS/LWIS), Container Train Operators (CTOs), Private Freight Train Operators (PFTOs) into a single comprehensive policy, formulated after extensive stakeholder consultation.

- IR could concession the commercial operations of Rajdhani/Shatabdi trains to private parties for an upfront/annual premium.

- Tap other extra budgetary sources like the multilateral funding agencies. Proviso of take-out financing through long-term lower interest rate funds from, say, insurance companies and pension funds. The funds borrowed from the market should be used exclusively for capacity generation and not diverted for any asset replacements.

- It may also be useful to pilot the securitization of savings from electrification projects as a way of monitoring the ex-post viability of these projects.

- IR can leverage ownership of one of the largest land banks spread across the country, as well as other fixed immovable properties. Identified immovable properties can be transferred to an SPV, which can be structured as a REIT (Real Estate Investment Trust), wholly owned by IR or in conjunction with domestic financial institutions.

- Joint Ventures with State governments for suburban rail - Certain activities of IR are specific to certain geographical areas. Some of these may be non-remunerative in nature, while being of social value to the population of that geographical area. These include, for example, the operation of suburban and branch line services.

- A long-term bullet bond or a zero-coupon bond, whose repayment (including interest and principal) is at maturity can be issued to meet a part of the current pension obligations. This would reduce the existing obligation while increasing the obligation at a time when the claims on revenue are less. In lieu of bearing the pension liability, these bonds could be guaranteed by GOI in order to reduce costs, and could also be made tax-free.

- For raising resources for investments, an Investment Advisory Committee may be set up, consisting of experts, investment bankers and representatives of SEBI, RBI, IDFC and other institutions. The existing assets of IR may be leveraged to raise resources and institutions created like InviT, NBFCs. The modalities by which returns can be secured for such investments should also come under the purview of this Investment Advisory Committee.

- IR may consider putting up billboards along the tracks after identifying the sections which are prone to trespassing and open defecation. This will not only ensure some additional revenue for the Railways but also act as a preventive facade against the problems described. The bill boards would also help block eyesore spots and at the same time attract the attention of the train passengers.

- IR PSUs acquired considerable expertise in turn key (EPC) execution of contracts and seem to perform far better than the IR's own departmental execution track record. Should be induced to take up commercially viable projects on a turn-key basis, even in partnership with other public sector units. The repayment mechanism could vary from annuity repayments to a stream of revenues attributable to the project, provided the same can be objectively and clearly determined in a transparent manner.

- The procurement process should involve announcing aggregate off-take from IR over the next few years and switch from one year contracts to longer duration contracts. This will facilitate investments by providing predictability and certainty to the private sector and ensure better quality and vendor development. Contracts of longer duration ensure better quality and vendor development.

Annexure 1a: Recommendations of Earlier Committees

S.no	Solutions	Committee
1	Compensation from Union and/or State governments for suburban lines, transportation cess in metropolitan areas.	Kunzru (1978), Tandon (1994), Rakesh Mohan (2001)
2	No un-remunerative lines or branch lines, unless State governments (or relevant organizations) pay. Hand these over at zero cost to State governments.	Kunzru (1978), Tandon (1994), Sarin (1981-85)
3	Increase appropriation to Depreciation Reserve Fund, based on commercial practices.	Sarin (1981-85), Poulose (1994)
4	Convert interest-bearing liabilities into equity.	Expert Group (1978), stated a bit differently in Tandon (1994), stated differently in Rakesh Mohan (2001)
5	Amortization of capital not backed by assets, or where remuneration is low.	Kunzru (1978)
6	Operating ratio should be computed after dividends and appropriation to Reserve Funds.	Sarin (1981-85)
7	Set up a sinking fund for extinguishing debt, write-off capital on redundant and non-productive assets.	Poulose (1994), stated a bit differently in Tandon (1994)
8	Implement a proper system of traffic costing, with objective apportioning of direct costs.	Sarin (1981-85)
9	Corporatization is not recommended, except for ancillary functions.	Partly in Expert Group (1978), Sarin (1981-85)
10	For mobilizing adequate internal resources, around 16 per cent rate of return on capital at charge after payment of dividend.	Nanjundappa (1993)
11	Streamline investment planning.	Tandon (1994), Rakesh Mohan (2001), Pitroda (2012)
12	JV between IR and private parties in acquiring passenger coaches and operating high speed passenger trains between select pairs of stations; financing of the related rolling stock requirements	Rakesh Mohan (2001)
13	JVs with State governments/PSUs, with losses borne by State governments/PSUs.	Alhuwalia (2014)
14	Revise JV with State/PSUs/Port companies/private sectors with maximum share of equity with the State/PSUs.	Alhuwalia (2014)
15	Increase payload/tare ratio on wagons.	Pitroda (2012)
16	Create a system of variable pay, linked to incremental surplus.	Pitroda (2012)
17	Increase the rate of dividend payable by PSUs	D.K.Mittal (2014)
18	Create Project Appraisal and Monitoring Group- for prioritizing needed Investment.	D.K.Mittal (2014)
19	Rolling Stock investment to be met through PPP or by lease	D.K.Mittal (2014)
20	Project Funding through PSUs/FIs	D.K.Mittal (2014)
21	Additional Gross Budgetary Support	Nanjandappa (1993), Alhuwalia (2014), D.K.Mittal (2014)

S.no	Solutions	Committee
22	25% of the GBS earmarked for NE States and Special States (J&K and Himachal Pradesh). Dividend proposed to be exempted or the same.	Alhuwalia (2014)
23	GBS for loss-making railway lines as grant, exempted from dividend payments.	Alhuwalia (2014)
24	Increase Market borrowings through IRFC/PSUs	Alhuwalia (2014), D.K.Mittal (2014)
25	IRFC borrowing restricted to financially viable projects on turnkey basis, ring-fencing of projects that have IR more than 9%.	Alhuwalia (2014)
26	Divest non-core activities, like production units, by corporatizing them within a holding company structure. Outsource some activities.	Tandon (1994), Rakesh Mohan (2001), National Transport Development Committee (2014)
27	Disinvestment of Railway PSUs.	Pitroda (2012)
28	PPPs for railway stations, port connectivity, DFCs, freight terminals, high speed corridors, loco & coach manufacturing, hospitals, schools.	Rakesh Mohan (2001), Mitra (2009), Pitroda (2012), Ahluwalia (2014)
29	PPP (annuity mode) for lines where IRR is less than 5%.	Ahluwalia (2014)
30	National Railway Construction Authority for work above a threshold.	National Transport Development Committee (2014)
31	External loans directly to Railway PSUs, instead of being intermediated by Railways.	Ahluwalia (2014)
32	Pension fund must be self-sustaining.	Sarin (1981-85)
33	Subsidy for pensions & un-remunerative lines from Union government.	Rakesh Mohan (2001)
34	Switch in accounting to Indian GAAP	Rakesh Mohan (2001), Pitroda (2012), National Transport Development Committee (2014), Ahluwalia (2014)
35	Ministry of Railways should not answer questions on law and order on railways. That is the responsibility of Ministry of Home Affairs.	Sarin (1981-85)
36	Codify co-ordination between RPF and GRP, make GRP a part of district police. Both administratively and financially, GRP should be the responsibility of the States and IR should not contribute a share.	Sarin (1981-85)
37	Set up of task force to introduce of cost and responsibility centres to work on performance budget	Tandon (1994)
38	Form Directorates for investment, planning, purchase…	Tandon (1994)
39	Set up Railway Regulatory Authority	Rakesh Mohan (2001)
40	Asset Monetization	Rakesh Mohan (2001), Pitroda (2012), D.K.Mittal (2014)
41	Time-tabling/scheduling of goods trains.	Kunzru (1978)
42	Increase freight revenues by improving customer coordination	Rakesh Mohan (2001), Vision 2020 (2009), D.K.Mittal (2014)

S.no	Solutions	Committee
43	Joint Venture with Cargo Operators	Rakesh Mohan (2001)
44	Construction of Sidings in partnership with public and private sector	Rakesh Mohan (2001)
45	Railways in partnership with State/Private sector Government to form Special Purpose Vehicle	Rakesh Mohan (2001)
46	Implement freight related management and information systems, such as Wagon and Crew Management system, Parcel Management System, and Inland traffic management system.	Rakesh Mohan (2001)
47	Commodity-specific freight strategies	Rakesh Mohan (2001)
48	No Safety surcharge on freight rate	Kakodkar (2012)
49	Monetise Airspace	Rakesh Mohan (2001), Pitroda (2012)
50	Explore and develop tourism routes like Palace on Wheel Modal	Rakesh Mohan (2001), D.K.Mittal (2014)
51	Commercial usage of land through Railway Land Development Authority, GIS mapping of land resources and digitization of land records.	Mitra (2009), Pitroda (2012), National Transport Development Committee (2014)
53	Advanced signalling system Pitroda- Advanced signalling on trunk routes of 19,000 route km, through independent SPV, modernize 19,000 km	IR Vision 2020 (2009), Rakesh Mohan (2001), Kakodkar (2012), Pitroda (2012)
54	Elimination of level crossings through SPVs, provide fencing along tracks	Rakesh Mohan (2001), IR Vision 2020 (2009), Kakodkar (2012), Pitroda (2012)
55	Mechanize track maintenance. Pitroda- stated on routes A & B.	Pitroda (2012), Kakodkar (2012)
56	Strengthen 11,250 bridges.	Pitroda (2012)
57	Modernization surcharge.	Pitroda (2012)
58	Dedicated freight corridors and high speed passenger corridors.	Rakesh Mohan (2001), IR Vision 2020 (2009), Pitroda (2012), National Transport Development Committee (2014)
59	Increase average speed, reduce speed differential on each route	D.K.Mittal (2014)
60	Private inter-city trains and freight EMUs attached to mail/express trains	Pitroda (2012)
61	Modernize procurement	Pitroda (2012)
62	Revamp Procurement Policy	Kakodkar (2012)
63	Electronic tracking of files.	Pitroda (2012)
64	SIMRAN-based real-time information system at stations and on trains, RFID tracking for coaches, wagons & locomotives, internet access at 342 railway stations.	Pitroda (2012)
65	Switch from ICF to LHB coaches.	Pitroda (2012), Kakodkar (2012)
66	Green toilets on passenger trains.	Pitroda (2012)
67	Introduce 'Airline Like Model'	D.K.Mittal (2014)

S.no	Solutions	Committee
68	Outsourcing of services; track and wagon maintenance, station cleaning, bedding, catering, building maintenance	D.K.Mittal (2014)
69	Advanced scientific measurement, inspection and maintenance of tracks and bridges	Kakodkar (2012), Pitroda (2012)
70	There should be an efficient insurance scheme for accident compensation.	Sarin (1981-85)
71	Create non-fungible non-lapsable safety fund generated through safety cess	Kakodkar (2012)
72	Special Railway Safety fund to be created	D.K.Mittal (2014)
73	Create High level Task Force to recommend constructive measures which will alleviate or eliminate casualties due to railway infrastructure	Kakodkar (2012)
74	Create non-lapsable Project Development Fund	D.K.Mittal (2014)
75	Create head for a scheme for modernization of IR	D.K.Mittal (2014)
76	Railway Board to facilitate FDI and realise Make in India campaign	Shreedharan (2014)
77	Railways should opt out of sectional and branch line passenger trains.	Sarin (1981-85)
78	Cross- subsidisation within the railway resources has to be withdraw	Nanjundappa (1993)
79	Passenger business should not be cross subsidized by freights	Rakesh Mohan (2001), IR White Papers (2009), Kakodkar (2012), D.K.Mittal (2014)
80	Rebalance passenger tariffs	Rakesh Mohan (2001)
81	Recalibrate passenger & freight tariffs, examine concessional passenger travel internal to IR.	Rakesh Mohan (2001)
82	Rationalize passenger tariff across each class. Rakesh Mohan-lower the tariff for upper class. Increase gradually for LC.	Rakesh Mohan (2001), IR White Papers (2009), Kakodkar (2012), D.K.Mittal (2014)
83	Establish Independent Rail Tariff Authority	National Transport Development Committee (2014)
84	Rationalize passenger tariff across each class. White Papers and Rakesh Mohan-lower the tariff for upper class. Increase gradually for LC.	Rakesh Mohan (2001), IR White Papers (2009), Kakodkar (2012), D.K.Mittal (2014)
85	Introduce dynamic pricing for long distance reserved category tickets	D.K.Mittal (2014)
86	Dynamic pricing system for freight to utilize emptiness in empty flow	D.K.Mittal (2014)
87	Tariff should be increased by 2 paise/PKM for second class tickets every 2 months (including suburban and intercity trains)	D.K.Mittal (2014)
88	Delink recruitment to railway cadres from civil services and central engineering services examination. Upgrade Special Class Railway Apprentice Exam into two graduate streams of Indian Railway Technical Service and Indian Railway	National Transport Development Committee (2014)

S.no	Solutions	Committee
	Logistics Service. Post-graduation through Railway Institute/University.	
89	Restructure Railway Service Commissions, with 50% direct lateral recruitment	Sarin (1981-85)
90	Give greater weightage to merit in promotions.	Sarin (1981-85)
91	Exchange officers between IR and other government departments and PSUs.	Sarin (1981-85), lateral entry of specialists in Tandon (1994)
92	Heads of departments should be consulted before a vigilance enquiry.	Kunzru (1978)
93	Selection grade in 14th year of service through UPSC.	Implicitly in Tandon (1994), National Transport Development Committee (2014)
94	Fix minimum tenures for top management (3 years).	Tandon (1994)
95	Unified cadre and recruitment through UPSC not recommended	Gupta-Narain (1994)
96	Change entry age for SCRA exam from 16-20 to 17-21.	Gupta-Narain (1994)
97	Change "date-of-joining" based seniority to merit-based seniority	Gupta-Narain (1994)
98	No separate management cadre.	Gupta-Narain (1994)
99	Unified Railway Service cadre	Tandon (1994)
100	Create Task force to examine direct recruitment of specialists	Tandon (1994)
101	Reduction in Manpower is needed in IR-20% in next 7 years	Rakesh Mohan (2001)
102	Lateral entry of specialists.	Pitroda (2012)
103	Move work-force up the skills ladder	Tandon (1994), Pitroda (2012)
104	Enhance the powers of DG, RDSO	Sarin (1981-85)
105	GMs should be selected from "open-line" GMs.	Sarin (1981-85)
106	Devolve full powers to GM	Shreedharan (2014)
107	Financial powers should be delegated to the GMs in respect of handling tenders	Shreedharan (2014)
108	Ensure no post of GM or member remains vacant	Shreedharan (2014)
109	Selection procedure and criteria of GMs needs revamping	Shreedharan (2014)
110	Broad guidelines for GMs to explore commercial development of land	Shreedharan (2014)
111	Chairman, Railway Board, should be freed from functional responsibilities and should not be appointed on the basis of seniority. Chairman should have powers to overrule other Members.	Kunzru (1978), Sarin (1981-85), partly in Gupta-Narain (1994), stated differently in Pitroda (2012)
112	Railway Board should be given full freedom to determine their pricing and investment policies	Nanjundappa (1993)
113	Restructure the Railway Board functionally	Tandon (1994), Pitroda (2012)
114	Free Railway Board from Parliamentary functions.	Pitroda (2012)
115	Convert Railway Board to Railway Executive Board, as a preparatory step towards corporatization.	Rakesh Mohan (2001)

S.no	Solutions	Committee
116	Restructure IR as a statutory corporation, but not under the Companies Act. Replace Railway Board as Indian Railways Executive Board, with Chairman as CEO	Partly in Wanchoo (1968), National Transport Development Committee (2014)
117	Charter for IR, with a clear financial objective.	Poulose (1994), stated a bit differently in Tandon (1994)
118	Decentralisation of the decision making process with appropriate changes in the management system	Nanjundappa (1993)
119	Decentralize non-policy decisions to zones, revise the "negative" list. Within zones, decentralize to divisions.	Kunzru (1978), Tandon (1994), Pitroda (2012), National Transport Development Committee (2014)
120	Empowerment of RLDA Board through suitable delegation of power. Vacant position to be filled. Engage external consultants. Manpower need to be strengthened	D.K.Mittal (2014)
121	RLDA to have power to use non-operational land for commercial use to maximize revenue without the approval of Railway Board	D.K.Mittal (2014)
122	Restructure the function of RDSO/Strengthening the RDSO	Rakesh Mohan (2001), IR Vision 2020(2009), Pitroda (2012), National Transport Development Committee (2014)
123	2% of yearly revenue earmarked for research.	Kakodkar (2012)
124	Establish railway research centres and to collaborate with premier institutes	IR Vision 2020(2009), Kakodkar (2012), Pitroda (2012), National Transport Development Committee (2014)
125	Establish Railway Research & Development Council (RRDC) under the government	Kakodkar (2012), National Transport Development Committee (2014)
126	Establish railway research centres and to collaborate with premier institutes	IR Vision 2020(2009), Kakodkar (2012), Pitroda (2012), National Transport Development Committee (2014)
127	Establish indigenous railway equipment industry	IR Vision 2020 (2009), Pitroda (2012)
128	Establish National Board for Railway Safety. Railway Safety Policy with measurable indicators for evaluation of five year and 10 year period must be announced before the end of 2015	Kakodkar (2012), National Transport Development Committee (2014)
129	Creation of an independent safety mechanism 'Railway Safety Authority (RSA)'	Rakesh Mohan (2001), Kakodkar (2012)
130	Establish National Railway Construction Authority for Project Execution	Rakesh Mohan (2001), Stated differently in IR Vision 2020 (2009) i.e. managerial and organizational issues that need to be addressed to fast-track project execution

S.no	Solutions	Committee
131	Establish Indian Railways Corporation	Rakesh Mohan (2001)
132	Create Member (PPP)	Pitroda (2012), Ahluwalia (2014)
133	Create Member (Safety & Research)	Kakodkar (2012), Pitroda (2012)
134	Create Member (Freight), Member (Passenger Services)	Pitroda (2012)
135	Create Empowered Group for PPP policies	D.K.Mittal (2014)
136	Create Member or Advisor (Business Development)	D.K.Mittal (2014)
137	Strengthen public relations department.	Kunzru (1978)
138	Create Task Force to study the feasibility of communication back bone for IR	Kakodkar (2012)
139	Use railway websites & social media for customer feedback, consumer education and social messages.	Pitroda (2012)
140	Create Policy Document for Advertising and Marketing in IR. Advertising work should come under IR.	D.K.Mittal (2014)
141	Prepare long term ICT Plan; Integration and computerization of systems	Rakesh Mohan (2001), Vision 2020 (2009), Pitroda (2012), D.K.Mittal (2014)
142	There must be an enterprise-wise plan for ICT application. CRIS (Centre for Railway Information Systems) should become a non-profit company.	National Transport Development Committee (2014)
143	EPC and MSS (Manual of Standards & Specifications) construction contracts, instead of “item-rate”.	Alhuwalia (2014)
144	Reduce the IR’s Carbon Footprint	India Vision 2020 (2009)

Annexure 1b: Status of Recommendations of Earlier Committees, as reported by the Railways

Sam Pitroda-ICT Committee

Sr. No.	Rec. No.	Recommendation & its details	Accepted/Not accepted with reasons
1.	1	SIMRAN based Real-Time information System(RTIS)	Recommendations accepted. A work on Real-time Train Information system (RTIS) included in the Pink Book 2010-2011 at an estimated cost of Rs.120 crore covering all passenger and freight trains. Execution will start after ISRO allots bandwidth.
2.	2	Ticketing through Mobile phone	Recommendations accepted. a) **Reserved Tickets**- IR CTC has launched Window Phone E-ticketing mobile application for booking reserved tickets. 90,803 tickets were booked through facility during April 2014. (b) **Booking of reserved tickets through SMS**- Reserved tickets can also be booked through SMS, Unstructured Supplementary Service Data (USSD) from basic mobile phones without use of internet. 8927 tickets were booked through facility during April 2014. (c) **Unreserved & Platform Tickets**- A pilot project (at Mumbai and Chennai Suburban areas) is planned for providing unreserved tickets & Platform tickets on mobile phones. The detailed estimate at the cost of 5.467 crore has been sanctioned. In Phase-I, UTS ticketing over Mobile phone will be enabled through Unstructured Supplementary Service Data (USSD). The passenger will book and pay for the ticket through Mobile phone and will print the ticket through ATVM Kiosk or any other printing kiosk providing for this purpose. The 1st phase will be completed by Dec 2014.
3.	3	Unified Web Portal for Indian Railways	Recommendations accepted. All 39 websites of Indian Railways have been migrated to a common platform (standardized and given uniform look and feel) and made online. New tender upload utility has been developed for uploading Tender information on the website hosted on

			IR portal; this information is automatically uploaded to Central Public Procurement Portal.
4.	4	Broadband connectivity to Panchayats	Recommendations accepted in principle. RailTel Corporation of India jointly with Bharat Sanchar Nigam Limited (BSNL) and Power Grid Corporation of India (PGCIL) are executing the work of National Optical Fibre Network (NOFN) project of Deptt. Of Telecommunications in the ratio 15:70:15 respectively; to provide Broadband connectivity to Panchayats. Total fund allocated for this purpose is ` 20000 crore with RailTel's share as ` 3000 crore. RailTel has been allotted 11 states (36000 panchayats approximately). The pilot by RailTel has been successfully completed and launched in all 14 Panchayats in Panisagar Block in North Tripura District of Tripura state. Further execution tenders for 20 districts covering 3151 Gram Panchayats is in advanced stage of finalization.
5.	5	RailTel to explore Broadband services on PPP Basis	Recommendations accepted in principle. Planning Commission in its Office memorandum dated 30.08.2012 is of the view that the proposal entails only leasing of properties and asset of Indian Railways and RailTel which does not confirm to the guidelines of the Viability Gap Funding (VGF) scheme and cannot be considered as a PPP project. Moreover now RailTel has gone with its plan for broadband through Railwire model which has now been implemented on country wide basis. In view of the above Railway Board's Finance has also suggested to drop the work in present form.
6.	6	OFC network on balance 15000 RKM of Indian Railways on PPP basis	Recommendations accepted in principle. RailTel has been asked to submit Request for Qualification (RFQ) as per the existing guidelines of model RFQ issued by the Ministry of Finance so that in principle approval of PPP Appraisal Committee (PPPAC) can be processed.
7.	7	Rail TV channel	Recommendations accepted in principle. A working group consisting of Commercial, PR and Telecom Dtes to show how the broadcast of programs flashing of updates for passenger related information in multiple languages specific to cities/regions through a single channel can be done without restoring to time slotting method is yet to submit its report.

Amit Mitra Committee on PPP/JVs

Sr. No.	Rec. No.	Recommendation & its details	Accepted/Not accepted with reasons
1.	1	Redevelopment of Stations	Accepted. The redevelopment of stations to international standards is envisaged at no cost to Railways. Except for Railway's equity contribution of Rs. 19.6 crore to Indian Railway Stations Development Corporation (with Authorized capital of Rs. 100 cr. and present paid up capital of Rs. 40 crore) and an additional outlay of Rs. 14.0 crore for Zonal Railways, which is primarily being utilized for consultancy studies, there is no financial implication regarding station redevelopment. The expenditure on station redevelopment is proposed to be met through leveraging real estate potential of railway land around and air space above the railway stations. The Railways may be able to generate surplus in some of the major stations e.g. Metros etc. However, it would be premature to indicate an amount regarding the same at this stage.
2.	2	Development Of Multi-Functional Complexes (Mfcs)	Accepted. 197 stations are identified for development of MFCs, which have been assigned to RLDA, IRCON, RITES, RVNL & Zonal Railways. MFCs (34 nos.) assigned to Zonal Railways are being constructed by sanctioning works under Plan Head 'Passenger Amenities'. The approx. cost of such works is Rs. 17 crore. MFCs assigned to PSUs viz. IRCON/ RITES/ RV are being constructed with their own funds while RL is developing MFCs through private sector participat by leasing of land for 30-45 years. RLDA expects earn a total revenue of Rs. 287 crores as upfr payment/NAV of annual lease rent from developers a as land lease charges from IRCON/RITES/RVNL, which a sum of Rs. 22.26 crores has been received RLDA up to September' 2014.
3.	3	**Setting up of Electric Locomotive Assembly and Ancillary Unit of Chittaranjan Locomotive Works (CLW) –** Committee recommended setting up this factory by awarding an	Accepted. The unit has been constructed at Dankuni. The unit will assemble Three Phase Electric Locomotives and would also assemble the 9000 HP locomotives to be procured for the Western DFC project.

		'Assured Off-take' contract by inviting Private Players contributing private Equity.	
4.	4	**Setting up of Rail Coach Factory at Kanchrapara -** Committee recommended that the work of factory be set up by MoR as a Joint Venture with 26% equity of IR and the rest by the technology partner selected through International Competitive Bidding.	Accepted. The unit would be able to manufacture modern energy efficient EMU/MEMU Coaches to meet the demand of IR.
5.	5	Setting up of Diesel component factory: Item (I) to (V)	Accepted on departmental mode and not on PPP. This factory was planned to be set up to manufacture sub assemblies of HHP locos. On account of legal implications of transfer of technology (TOT) of EMD locos, the third party could not be considered for setting up this factory. The factory has already been set up as Departmental unit of Indian Railways and production commenced.

Anil Kakodkar Committee

. **Current status of the recommendations:**	
No. of recommendations discussed by the Board.	70
No. of remaining recommendation	36
Total recommendations	**106**

Sr. No.	Rec. No.	Recommendation & its details	Accepted/Not accepted with reasons
1.	1.1	**IT system** based on email / SMS should be introduced to report safety related matters by railway and non-railway persons. (Para 2.4.10)	Accepted.
2.	1.2	Redundancies should be built in the system such as **track circuiting** by two diverse means at vulnerable locations so that normal operations are least hampered due to single point failure.(Para 2.5)	Redundancies in the signalling system at vulnerable locations already exist wherever required.
3.	1.3	**IT basedsystem** should be set up within 6 months to collect and collate all train accidents whether consequential or of little significance, near misses, safety related asset failures, etc. (Para 2.5)	Accepted.
4.	1.4	Projects for augmentation of line capacity on busy routes and maintenance facilities for coaches and wagons in open line and workshops should be funded and executed on top priority in mission mode. (Para 2.7)	Not yet discussed.
5.	1.5	No **new trains** should be introduced without adequate capacity for operation and maintenance. (Para 2.7)	Principally Accepted. Repercussions to be put up to Hon'ble MR.
6.	2.1	**Restructuring of IR** should be examined and studied by a Separate Expert Group. (Para 2.8.2)	Not accepted. The existing departments are the result of specialization required by IR, but there is

			integration at the top. The strengths of IR have not been projected by the Committee suitably. The mere existence of departmentalism does imply that departments should cease to exist. But some kind readjustment is required for which we need to revisit the internal working processes to make them delivery oriented.
7.	2.2	Earlier system of **only Operating and Technical officers** being considered for general posts of **GMs and DRMs** should be restored. Only capable officers should be selected as DRMs and posted in divisions with a minimum tenure of **3 years**. (Para 2.8.3)	Not accepted. Presently, posts of GM are filled by a selection process by ACC. However, need for revisiting criteria for posting of DRMs is accepted. A separate selection process for DRMs, which includes a personality test, is one of the options. An officer with adequate exposure of divisional working should only be considered for posting as DRM. This issue will be further deliberated upon in a separate Board meeting.
8.	3.1	**Enhanced powers** should be delegated to **GMs and DRMs** in regard to safety matters as under (Para 2.9.5): 1. Powers of General Managers to be enhanced to 3 times for sanction of works under all Plan Heads except New Lines and M & P items. These should also be applicable under out-of-turn basis, depending on the urgency. Powers of DRMs also to be accordingly enhanced to 3 times. 2. General Managers to be given full powers for re-appropriation of funds from one work to another under the same Plan Head and source of funds under all the Plan Heads, except New Lines. 3. General Managers to have full powers to re-appropriate funds under Revenue under the same Demand from one PU to another within the overall budget allotment. 4. DRMs to be fully empowered to decide the process/procedure such as Spot Purchase Committee,	1. Recommendation accepted for enhancing powers of GMs and DRMs by 3 times, except for works of GC, new lines and RE, within overall budget allotment. 2. Recommendation will be considered for delegating full powers for re-appropriation of funds except works of new lines, GC and RE under same plan head and source of fund within the overall budget allotment. 3. Recommendation will be examined for delegation of full powers for re-appropriation of funds except from salary to non-salary head within the overall budget allotment. 4. Recommendation will be examined. 5. DRMs to have full powers: i. Recommendation will be examined. ii. Recommendation will be examined. iii. Recommendation accepted as such powers already exist. 6. Recommendation accepted. Powers of DRMs already exist for awarding works on quotation basis for works of emergency nature, upto 4 lakh. 7. Recommendation accepted. Powers already exist for hiring utility vehicles on zonal railways.

		Single/ Limited Tenders, etc. 5. DRMs to have full powers: i. To accept tenders floated by the division ii. To enter into repair or Annual Maintenance Contracts (AMC) through OEM or otherwise iii. To purchase stock items in case of shortages and non-stock items up to Rs. 3 Lakhs per case but without any monthly ceiling 6. DRMs to be empowered to award works of essential nature related to operation and maintenance assets on quotation basis for 3 months as a stop gap arrangement. 7. DRMs to have full powers for hiring of resources including utility vehicles. 8. DRMs to have full powers to sanction construction of RUBs, limited height subways and ROB under Road Safety works. 9. Powers those vested with DRMs of the Division to be enjoyed by the Chief Workshop Managers (CWM) in respect of their workshops.	8. Recommendation accepted. GMs to be delegated with full powers to sanction ROB works and to DRMs for RUB works. 9. Recommendation for delegating powers of DRMs to CWMs in SAG will be processed.
9.	3.2	Powers to sanction **cash awards** for good performance in **safety related matters** should be enhanced to three times. (Para 2.9.6)	Accepted
10.	3.3	**Enhanced delegation** of powers to the **divisions** should be directly mandated by the Railway Board as a onetime measure. (Para 2.9.7)	Accepted but details have to be worked out.
11.	4.1	**Core Safety Groups** should be formed under the convenorship of the Additional General Manager/Safety (a new post carved in zonal headquarter as part of the new safety architecture) at headquarter level and Sr. Divisional Safety Officer at divisional level. Principal Heads of Departments at HQ level and branch officers at divisional level of Civil, Mechanical, Electrical,	Recommendation partially accepted. Officers working in safety assignments should have adequate exposure of field working at divisional level and also have aptitude for safety jobs.

		Signaling, Operating and Finance should be the members. (Para 2.10.1)	
12.	4.2	Group of Officers headed by **AGMs and ADRMs** at the Headquarter and divisional levels respectively should convene meetings once every week to clear all the pending Engineering and Signalling Plans. (Para 2.10.2)	Accepted.
13.	5.1	All the **vacancies** of supervisors and staff in **safety category** should be filled up in a time bound manner say within 6 months by leveraging IT based recruitment systems. Concerned officer in Railway Board should be given this responsibility along with commensurate empowerment.	Recommendation accepted. Running staff cadre review to be done realistically and should not result in increase of vacancies. IT based recruitment systems accepted.
14.	5.2	**Multi- disciplinary teams** of 3 officers, one each from Personal, finance and the concerned department should identify **surplus posts** at the Divisional, Hd. Qrs. and production unit levels for surrendering to build up a surplus bank. These teams should identify the need for additional posts under safety categories. GMs should ensure that creation of additional posts is rightfully done in the deserving safety categories within 3 months. (Para 2.11.3)	Recommendation accepted and already in place.
15.	5.3	GMs should be empowered to create **additional posts** with finance concurrence under Safety categories if no matching surrenders are available. (Para 2.11.3)	Recommendation not accepted. Following steps need to be taken: 1. Financial value of vacancy bank should be updated at the end of each financial year. 2. Non-safety posts must be surrendered after restructuring within a time frame of 3 months. 3. Manpower yardsticks for all activities should be reviewed.
16.	5.4	The existing **staff yardstick** to be looked afresh in a dispassionate fashion and the same should be issued to the zonal railways within 3 mths. (Para 2.11.4)	Accepted. Emphasis should be on downsizing or rightsizing of yardsticks.

17.	5.5	Railway Board should issue **outsourcing policy** to get expert service and save cost. (Para 2.11.5)	Accepted. However care should be taken that there is no duplication of manpower for the outsourced activity by the approving authority.
18.	6.1	Concerned directorates should issue a defined **list of safety items** to zonal Railways for uniformity. (Para 2.13.1)	Accepted.
19.	6.2	**RDSO** should take **full responsibility** of all those safety items for which drawing, specification, vendor approval, etc. are issued by RDSO. They should enter into long term rate contract with their approved vendors for 3 to 5 years after negotiating rates based on the value of the item which can be best assessed by RDSO.(Para 2.13.3)	Recommendation partially accepted. RDSO should take full responsibility of all those safety items for which drawing, specification, vendor approval, etc. are issued by RDSO. Railways should enter into a long term rate contract with the approved vendors, preferably by production units. RDSO should display vendor policy after due diligence.
20.	6.3	A simple but effective **vendor qualification and approval** process should be followed for non-RDSO safety items at Zonal railway level.(Para 2.13.7)	Accepted.
21.	6.4	A thorough review of the quality system for material procurement process by an **external professional agency** and revamping of the system should be done as necessary. (Para 2.13.8)	Accepted.
22.	6.5	Conventional method of technical inspection should be replaced with **modern Quality Management System** for which necessary check sheets should be developed by the respective departments directly associated with safety. These check sheets should be based on present rules, regulations, manuals, instructions, etc. and should form part of the safety manual of the Railway. (Para 2.14)	Accepted.
23.	7.1	Removal of all **encroachments** in the vicinity of railway track should be addressed at the **political level** in the interest of safety. (Para 2.15.2)	Accepted.

24.	7.2	**PPEA (Public Premises Eviction Act)** should be suitably amended so that eviction of encroachers is easily possible with the help of local police/Railway Protection Force. Suitable **amendment in the Railway Act** should also be made by which encroachers can be severely penalized.(Para 2.15.2)	Recommendation accepted as relevant provisions already exist.
25.	7.3	Better **coordination** between Indian Railways and the **policing authorities** should be established to strengthen the intelligence network to pre-empt sabotage on the Railways. (Para 2.15.3)	Recommendation accepted. Financial implications to be worked out.
26.	7.4	The Railway Act should be suitably amended to impose stringent punishment on persons found guilty of **sabotage**. (Para 2.15.3)	Provision already exists. Hence no amendment is required.
27.	7.5	Big railway stations should have **'Intelligent Security'** largely based on **CCTV** camera with proper monitoring in the control room. (Para 2.15.4)	Recommendation accepted. Financial implications to be worked out. Intelligent Security Systems to be studied further.
28.	7.6	The upper limit set for recruitment of **Ex-Servicemen** as per stipulated standards against vacant posts in RPF cadre should be removed to expedite filling up of vacancies. (Para 2.15.4)	Not accepted as recruitment already complete.
29.	7.7	Railways should also take up **disruptions and vandalism** to their assets to the courts for compensation and remedial measures. It should be examined whether suitable provisions can be incorporated in the Railway Act for this purpose. (Para 2.15.5)	Details of the case to be put up to CRB by Security Directorate along with relevant provisions of the Railways Act, 1989. Details of pending court cases to be also linked.
30.	7.8	A **High Level Task Force** involving State Government, ZRUCC and NGOs should be set up to recommend constructive measures which will alleviate or eliminate casualties due to railway infrastructure in the near future. (Para 2.16.2)	A Task Force of Railways, State Government and one Member of ZRUCC to be formed. They may co-opt other agencies depending on need including NGOs, if required.

31.	8.1	State of the art signalling and protection system – at least equivalent to the functionalities of **ETCS L-2** should be deployed throughout IR, starting with the busy routes (19000 Kms) immediately. A sub-group of the Committee shall examine some of the critical aspects during visit to some of the European railway system and submit its report. (Para 3.5)	Recommendation accepted for implementation of ETCS L-1 on limited section of automatic signal territory as a pilot project. However, existing automatic signalling works to continue.
32.	8.2	Diverse and redundant means of Satellite based train position sensing (as used in ACD) should be incorporated and merged in ATP functions. (Para 3.5)	Not yet discussed.
33.	8.3	A dedicated Special Purpose Vehicle (SPV) should be formed having full powers and the mandate to formulate and execute the sanctioned projects of ATP in a time bound manner (5 Years). (Para 3.6)	Not yet discussed.
34.	8.4	A **high power standing technical review committee** should be set up to guide the SPV on technical issues. This Committee should continue till the implementation of the project of ATP and should have experts from Railways as well as from outside. (Para 3.5)	Need is agreed to but a technical group of Additional Members/ Advisors to be formed to examine the implementation of this recommendation along with its roadmap.
35.	8.5	Communication Based Train Control (CBTC)" system should be used in Metros and dedicated corridor sections like Mumbai suburban, to meet the requirements of head way less than 1.5 minutes after study of design margins. (Para 3.6)	Not yet discussed.
36.	8.6	A "**Task Force**" should be set up to study the feasibility of **communication back bone** for IR, utilizing diverse and redundant technology to ensure highest level of availability of the networks for safety and operational requirements. (Para 3.5)	Same as item 8.4

37.	8.7	RDSO signaling directorate should be augmented with comprehensive research framework in order to include work on forecasting /**newer signaling** and telecom technologies. (Para 3.6)	Same as item 8.4
38.	9.1	IR should switch over to the manufacture of LHB design coaches in all the coach manufacturing units and manufacture of ICF design coaches should be stopped immediately. (Para 4.2)	Not yet discussed.
39.	9.2	Problem of **jerk on LHB** design coach should be resolved by adopting a new design of draft gear subject to its satisfactory performance. The existing LHB coaches should also be retrofitted. (Para 4.2)	Recommendation accepted. RDSO to formulate a new design and do further studies, if necessary.
40.	9.3	Other **maintenance related problems** faced on **LHB** coaches such as consequential failure to roller bearings, wheel shelling, etc. should be addressed at the earliest. (Para 4.2)	Recommendation accepted
41.	9.4	Some adaptation should be designed and provided on all the existing ICF design coaches in a Mission mode for facilitating energy absorption and anti-climbing during crash or sudden deceleration. (Para 4.3)	Not yet discussed.
42.	9.5	IR must strategize to utilize only **LHB coaches at 110 Kmph and above** speeds with 18 and above coach formations on the trunk routes. ICF design coaches should be relegated to lesser speeds with shorter compositions. (Para 4.2)	Recommendation accepted. To be implemented in a phased manner.
43.	9.6	A simple low cost device such as **bimetallic sensor** to open or close a circuit at around 60 to 80 degree Celsius on each axle with a display of red lights and alarm bell should be fitted in coaches that run on services having	Recommendation accepted in principle. Standard track side hot box detectors should be deployed.

		escorting technicians. (Para 4.3)	
44.	9.7	LHB coaches must be grounded at the Maintenance yards and **sub-standard M8 Fasteners** of speed sensor should be replaced with high tensile bolts of the specified quality of reputed make. (Para 4.3)	Recommendation accepted. To be implemented in a phased manner.
45.	9.8	Toilets either with no discharge or with harmless discharge should be introduced in all the 43000 coaches within next five years. (Para 4.5)	Not yet discussed.
46.	9.9	**Flame detection system** should be provided in coaches which should sound hooter at many places in the coach to warn the passengers. Its interface with **ACP** system should be considered based on field trials.(Para 4.6)	Recommendation Partially accepted. Reliable smoke based detection system is under trial with similar features in AC coaches.
47.	9.10	A simple ladder or equivalent feature with a permanent fitment or foldable and deployable provision should be available for assisting passengers to get down from coaches in the event of accident. (Para 4.6)	Not yet discussed.
48.	9.11	Existing instructions **prohibiting cooking in Pantry Cars** should be strictly enforced. License of violating contractors should be cancelled and they should be severely penalized if found cooking. Necessary provisions in this regard should be made in the Railway Act. (Para 4.7)	Recommendation accepted. Pre-cooked food should be served from modified pantries in each coach. Pantries to be provided in each coach for which the design has to be finalized by PUs.
49.	9.12	**Video Camera based data logging**, storage and display in monitoring room of Train Examiners Cabin should be introduced.(Para 4.8)	Recommendation accepted.
50.	9.13	Hot box detectors, **Wheel impact load detector (WILD)** and Track side bogie monitoring system should be extensively deployed. (Para 4.4)	Recommendation accepted. Implementation details to be worked out subject to fund availability.
51.	9.14	**Radio tags** on all types of rolling stock and a communication backbone should	Recommendation accepted.

		be provided along the railway network with last mile connectivity for transfer of condition data form track side to the control centre as well as maintenance depots. (Para 4.4)	
52.	9.15	Every train should be checked for **formation Leak rate** during maintenance in addition to Brake Power Certification. (Para 4.9)	Comments of DG/RDSO to be called for.
53.	9.16	**Weigh-bridges** should be installed at all major loading depots and at other places in a way that every loaded wagon is weighed within 50 to 100 kilometers .A uniform operating protocol to deal with overloaded wagon should be prescribed by Railway Board. (Para 4.10.1)	Recommendation accepted. Weighment is being done in all cases.
54.	9.17	Wagons with track friendly bogie should be deployed on Indian Railways on priority. (Para 4.10.2)	Not yet discussed.
55.	9.18	Concept of distributed power in freight operations to reduce coupler forces and rail wear should be developed. (4.10.3)	Not yet discussed.
56.	10.1	A national level expert committee should be constituted to establish the **root cause of rail failures** and identify the metallurgical and chemical solutions including enhanced quality assurance and control protocols from steel melting to laying of rail on a war footing within the next three months. This expert team should also review Rail Welding technology. (Para 5.2)	Recommendation accepted. Committee already formed.
57.	10.2	A Senior Administrative Grade officer of high integrity and strong background in Material Science & Chemistry should be posted full time to monitor and control Rail production process at **Bhilai Steel Plant.**(Para 5.2)	Recommendation accepted. RITES to post person with suitable background.
58.	10.3	Production of **52 kg rail** should be stopped and **52 kg PSC sleepers** should	To be discussed again.

		no longer be produced. Only **60 kg/M** head hardened rails should be used on curves sharper than 400 meter radius of curvature. (Para 5.2)	
59.	10.4	Modern technologically driven vehicle borne ultrasonic testing machine should be introduced for faster and reliable detection of rail and weld flaws. (Para 5.2)	Not yet discussed.
60.	10.5	Rail grinding at required intervals should be mandatory to increase the life of rails and wheels of rolling stock. (Para 5.2)	Not yet discussed.
61.	10.6	A systematic AT welding improvement programme should be introduced conforming to European standards. Procurement of latest and proven raw materials and quality welding procedures must be introduced to eliminate AT welding failure. (Para 5.3)	Not yet discussed.
62.	10.7	Directorate dealing with track formation in RDSO should be strengthened, stretches of weak formation identified and an action plan formulated to treat weak formations in a scientific manner with a view to eliminate such weak spots permanently including improvement to drainage within the next 5 years. (Para 5.7)	Not yet discussed.
63.	11.1	For recording and monitoring the condition of distressed bridges, photographs should be taken using **modern hand held electronic cameras** and should be posted on MIS/ sent through Internet to all concerned expert engineers having vast experience. (Para 5.5)	Recommendation accepted.
64.	11.2	Vulnerable bridges should be fitted with **water level gauges** and **turbine flow meters** to measure flow which should be interlocked in a way to warn the driver	Recommendation partially accepted. Water level gauges should be provided.

		of the approaching train. (Para 5.5)	
65.	11.3	**Distressed and vulnerable bridges** should be instrumented in terms of deflections/displacements, water level and flow velocity on a continuous basis and data should be communicated to the office of the concerned Chief Bridge Engineer for monitoring. Advanced scientific measurement and inspection for the condition assessment of the under-side of the bridges using mobile and articulating platform is essential. (Para 5.6)	Recommendation partially accepted. Suitable arrangements for measuring important parameters of selected distressed/vulnerable bridges would be provided.
66.	12.1	All Level Crossings whether manned (with or without signals) or unmanned should be eliminated in next 5 years. This is gigantic task for which dedicated SPVs should be formed in each of the zonal railway fully empowered and mandated to complete the project in a time frame of 5 years. (Para 5.6)	Not yet discussed.
67.	12.2	Level Crossings having little road traffic should be closed. Merger of nearby LCs by constructing connecting roads at railway's cost even on non-railway land should be taken up. (Para 5.6)	Not yet discussed.
68.	12.3	Construction of limited height sub-ways, Road under Bridge (RUB) and Road over Bridge (ROB) should be taken up in mission mode and traffic blocks should be generously granted. (Para 5.6)	Not yet discussed.
69.	12.4	**No LC should be newly introduced** under any circumstances on the existing system as well as during gauge conversion, doubling and construction of new railway lines. (Para 5.6	Recommendation accepted
70.	12.5	No LC gate should henceforth be manned or interlocked. (Para 5.6)	Recommendation partially accepted. IR has a time bound programme for elimination of UMLCs.
71.	12.6	The present policy of sharing the cost of RUB or ROB with the State Governments should be dispensed with	Not yet discussed.

		and the full responsibility and entire cost of construction should be taken over by the Railways. For this purpose, the present Railway policy needs to be changed and section 19 of Railway Act needs to be amended. Further, to augment the Road Safety Fund a large share of diesel cess should come to the Railways for which Government of India should be approached. (Para 5.6)	
72.	12.7	To expedite the construction of limited height sub-ways, RUBs and ROBs the CRS's role should be taken away and relevant plans and documents should be approved and signed at the level of the concerned **Principal Head of the Departments** (PHODs) **instead of** sending them to the **Commissioner of Railway Safety** (CRS) for sanction unless there is some change in the track/yard layout. (Para 5.6)	Accepted.
73.	12.8	Regular meetings and **coordination between Railway and civil administration** at the highest to the local levels should be held to expedite the execution	Recommendation accepted
74.	13.1	A large number of projects of importance to Railways should be regularly awarded to some select **engineering academic institutions** in which students can participate. Courses, minor stream and major specializations in the area of railway engineering should be introduced in the Indian engineering academic programs. (Para 6.1)	Recommendation accepted.
75.	13.2	All officers should be periodically imparted **training in safety engineering** for building a safety culture. (Para 6.2)	Recommendation accepted. Focus on safety in CTIs to be increased.
76.	13.3	One training institute at the **divisional level** should be nominated and	Recommendation accepted.

		upgraded for training to staff on **safety** environment in the Railways. This institute should have animation films; general equipment, tools and gadgets used on Indian Railways, etc. (Para 6.2)	
77.	13.4	Departmental staff should be encouraged and extended resources to **upgrade their professional qualifications** and skills to be fit for promotion to the higher level. (Para 6.3)	To be discussed again.
78.	13.5	All the newly recruited Assistant Loco Pilots should be Diploma holders instead of present Matriculate/ ITI holders. All the Maintenance Technicians in all Technical Departments should at least be ITI holders and supervisors should be at-least Diploma holders, preferably, Engineering Graduates. (Para 6.3)	Not yet discussed.
79.	13.6	Cadre of **electric and diesel running staff** should be separated in the present operating environment having large number of loco variants of both types. (Para 6.4)	Recommendation not accepted. Present arrangements are satisfactory.
80.	13.7	Such running staffs who fail in any of the mandatory refresher course should be given only **one extra chance** to repeat the course and test should be taken at the concerned Branch Officer level. In case the running staff fails again, he should be debarred from running duty and posted on other non-safety related assignments or given voluntary retirement following the prescribed rules and process. (Para 6.5)	Accepted.
81.	13.8	Some portable cheaper version of loco simulators should be procured and located in drivers' running rooms where running staff can brush up their driving skills at their convenience. (Para 6.7)	Not yet discussed.
82.	13.9	**Customized signaling Panels** should be introduced at the earliest in Zonal	Recommendation accepted.

		Railway Training Institutes (ZRTIs) for the training of station operating staff. (Para 6.8)	Customized panels have already been be provided in all ZRTIs .
83.	13.10	Separate **hand-books** should be prepared for the operating staff, such as loco pilots, station masters, etc. which should contain all the necessary instructions to be followed by them while performing their duty. (Para 6.9)	Recommendation accepted. E-books should also be examined as an alternative.
84.	13.11	Each Division should have **Grievance Redressal Machinery** which should deal with staff grievances in time-bound manner. (Para 6.10)	Recommendation accepted as such redressal machinery already in existence.
85.	13.12	Special allowance equivalent to 25% of the salary and grade pay should be given to the staff who work as regular Gatemen as a special incentive during the intervening period till LC gates are closed.(Para 6.11)	Not yet discussed.
86.	14.1	All sanctioned **capacity enhancement works** of CTIs, ZRTIs and STSs should be fully funded and executed within next two years. (Para 6.2)	Recommendation accepted.
87.	14.2	Posting as a trainer in Centralized Training Institutions (CTIs) should be based on the recommendation of a committee of which the Head of the institute concerned must be a member. Tenure of deserving officers may be extended on the recommendation of the Head of the CTI even if it involves transfer of elements of posts if such a trainer is due promotion so that he/ she can be promoted in the training institute itself. (Para 6.2)	Not yet discussed.
88.	14.3	Heads of CTIs should be given full powers to invite academicians, industry leaders, technocrats, etc. as **visiting faculty** within the allocated budget grant. In case of Railway Staff College, where Management training is imparted to officers of all railway disciplines,	Recommendation accepted. Details to be worked out.

		arrangements should be made to have one or two professional academicians on loan from management institutes of repute for a few years fixed tenure. (Para 6.2)	
89.	14.4	**Funds** for **CTIs,** Zonal Railway Training Institutes (**ZRTIs**) and Supervisors Training Schools (STSs) should be allocated separately both under Works as well as Revenue. Incurrence of expenditure under these fund-allocations should be fully under the control of Heads of the institute. Considering the importance and size of CTIs, they should have their own maintenance infrastructure. (Para 6.2)	Recommendation accepted.
90.	14.5	Terms of **Principals of ZRTIs** and STSs should be fixed for at least 3 years.(Para 6.2)	Recommendation accepted as such instructions already exist.
91.	14.6	Teaching allowance of trainers of ZRTIs and STSs should be increased from 15% to 30% to bring it at par with trainers in CTIs. (Para 6.2)	Not yet discussed.
92.	15.1	An apex body called **Railway Research & Development Council (RRDC)** should be established. It should be chaired by an eminent technologist / scientist of the country reporting to the Railway Minister. (Para 7.3.1)	Not yet discussed.
93.	15.2	Financial support up to 2 % of yearly revenue of Indian Railways should be available to support the entire research eco-system of railways in India. (Para 7.3)	Not yet discussed.
94.	15.3	Advanced Railway Research Institute (ARRI) should be established which should be a high-end, research organization focusing on engineering challenges in railway specific areas. (Para 7.3)	Not yet discussed.
95.	15.4	A string of five or so Railway Research	Not yet discussed.

		Centers should be established which should be co-located on the campuses of Indian technological academic institutions of national importance. Each center should specialize in specific areas like signaling, rolling stock, motive power, track and bridges, operations management, etc.(Para 7.3)	
96.	15.5	Present system of only having railway officers on deputation at senior positions in RDSO should be done away with and professionals and scientists from reputed technical institutions should also be inducted at higher levels on the permanent cadre. Their career progression should be on the similar lines as followed in other research institutions of Government of India. (Para 7.3.4)	Not yet discussed.
97.	15.6	Power of DG/RDSO should be enhanced as under: 1. Full autonomy with financial powers to function within the sanctioned budget. 2. To award consultancy contracts of enhanced value upto Rs. 1 Cr. In each case against the present delegation of Rs. 30 lakhs in each case. Powers for awarding MOU/Consultancy Contract should also be extended to benchmarked organizations in India and abroad like AAR, TTCI, UIC etc. 3. Full powers to award Consultancy Contract once sanctioned by the Board for values more than Rs. 1 Cr. each and there should not be any further need of sending the proposal to the Board. (Para 7.3.4) 4. Full powers for placement of developmental order within lump sum Budget Grant of RDSO irrespective of cost. This will expedite prototype and field validation for which RDSO is presently depending on PUs and	Not yet discussed.

		Railway Board.	
98.	16.1	A Railway Safety Authority (RSA) should be set up as a statutory body independent of Indian Railway Board under the Government. The Authority shall have a separate budget fully funded by the Ministry of Railways and shall be backed by a full-fledged Secretariat. (Para 8.5).	Not yet discussed.
99.	16.2	New post of **Member (Safety and Research)** in Railway Board should be created who will be the link between Railway Board, Railway Safety Authority (RSA) and Railway Research and Development Council (RRDC) at the apex level. (Para 8.5).	Not Accepted.
100.	16.3	Existing posts of Chief Safety Officers on zonal railways should be upgraded to Additional General Manager (Safety) as part of the new Safety Architecture. (Para 8.5)	Not yet discussed.
101.	16.4	The Institution of Commissioner of Railway Safety should be merged with Railway Safety Authority and should be strengthened and empowered. There should be CRS for each zonal railway and each CRS should have a Regulatory Inspection Team consisting of HODs of the concerned technical departments. (Para 8.5.3)	Not yet discussed.
102.	16.5	Role of Commissioner of Railway safety should be withdrawn from the routine clearance of proposals from the railways such as changes in Plans, Working Rules, etc. which consume lots of his time. These should be dealt and finalized by the concerned Principal Head of the department who should full responsibility of the changes. (Para 8.5.3)	Not yet discussed.
103.	17.1	A non-fungible non-lapsable safety fund generated through safety cess on passengers of different classes in graded	Not yet discussed.

		manner should be created to raise funds to the tune of Rs. 5,000 Crores per annum. (Para 9.5)	
104.	17.2	Payment of dividend to the tune of Rs. 5,000 Crore per annum should be deferred in view of social service obligation being borne by Railways which is assessed as Rs. 15,000 Crores every year. (Para 9.5)	Not yet discussed.
105.	17.3	An empowered group of officers (including an officer from finance) in Railway Board should pilot the implementation of safety enhancement recommendations and projects as accepted by the Ministry of Railways in a time bound manner with full funding. Other projects should be appropriately pended or slowed down for the time being to accommodate funding of these key projects. (Para 9.8.2).	Not yet discussed.
106.	17.4	Newly constituted Railway Safety Authority under the Govt. of India should also review the implementation of accepted Recommendations at a prescribed periodicity, say, once every 3 months for the next 2 to 3 years (Para 9.8.3).	Not yet discussed.

Rakesh Mohan Committee - Policy Imperatives for reinvention and growth

The report of the committee does not indicate the financial implications of implementation of all the recommendations, many of which are qualitative in nature. However, the committee has assessed an investment requirement of 1,99,230 crores for a strategic high growth scenario for the period 2001-16. The investment programme envisaged in the strategic high growth scenario requires an annual investment of about Rs. 14,000 to 15,000 crore per year from 2002-2006, about Rs. 12,500 crore per year from 2007-2011 and about Rs. 13500 crore per year from 2012-2016. In five year tranches, this investment programme amounts to Rs. 70,000 crore from 2002-2006, Rs. 62,500 crore from 2007-2011 and Rs. 67,500 crore from 2012-2016, making for a total of about Rs. 2,00,000 crore over fifteen years.

Classification of 34 Recommendations:

ACCEPTED	**:**	**16**
PARTIALLY ACCEPTED	**:**	**08**
NOT ACCEPTED	**:**	**10**

Sr. No.	Chapter/S.No. (Nodal Dte.)	Recommendation & its details	Accepted/Not accepted with reasons
1.	3.3 Commercial Traffic Budget	Indian Railways must lower freight tariff develop capabilities to pick up small loads, an attractive logistic package, increase share of other commodities etc. for reversing the trend of sustained decline in the market share.	Accepted. (i) Board noted that Railways had already chosen the path of rationalization of freight tariff. Future freight tariff policies will have to be market driven. (ii) With respect to clearance of small loads and less than train load traffic, appropriate policies for loading of two point rakes, leaving a fillip to domestic movement of containers by CONCOR and associating with Central Warehousing Corporation in this regard would achieve this objective. Board noted that the Railways are already offering attractive logistic package tour major customers such as in the case of coal, power houses and steel etc. Plants where a vital door to door service is being provided.
2.	4.1	Introduction of private management of commercial operations of specialized	Accepted (i) IR is already considering steps for

	Commercial TT T&C	services – an option that needs serious consideration.	improvement in responsiveness to the market by associating for example Central Warehousing Corporation in management of freight terminal services, leasing of SLRs, engaging Freight Forwarders etc. (ii) CONCOR as well as IRCTC are two Corporations which have been set up to offer specialized services in the area of commercial operations already.
3.	4.2 Commercial	Emerging competitive pressures in the passenger segment point to the need for flexibility in fixing fares by factors like season, convenience of time of departure/arrival etc. in addition to factors like class of travel and train speed.	Accepted. As already mentioned in item No.l above. IR has already accepted the concept of flexibility in fixing fares for catering to seasonal/daily peak in passenger demand.
4.	4.4 Traffic Commercial E&R	Increase speeds of goods trains, reduce speed differential, high speed passenger services, commodity specific freight strategies introduction of new technologies, adequate attention for research & development and harnessing information technology.	Accepted. Board noted that the above recommendation is already being implemented.
5.	4.6 Works	There is need to bring in customer orientation at the project framing stage itself. A project finance approach is required for implementation within a preset timeframe.	Accepted. The Board accepted this recommendation and the concept would be kept in mind while framing future programmes.
6.	4.9 Works Electrical	Overlapping facilities which present realization of savings in recurring costs after new investments particularly in the case of gauge conversion and electrification. These facilities should be immediately reviewed for closure.	Accepted. The Board accepted this recommendation.
7.	4.10 Planning PU ME TELE Works	IR should attract private investments in financing and leasing of rolling stock, joint ventures to acquire the latest design of rolling stock, financing of container terminals, freight bypass, improved communication system and for freight services.	Accepted. IR is already using all the above means of generating additional resources, excepting the construction of freight bypass on toll basis. Such bypasses can, however, be constructed under the revised BOT scheme.
8.	4.12	Investment needs to be channeled into priority areas that generate additional	Accepted. The Board accepted this

	Works Planning	capacity through improved operational efficiency and better speeds and modernization.	recommendation.
9.	4.13 Engineering Mechanical Electrical Signal Telecomm	Long Range Decision Support System (LRDSS) study had indicated the loss of capacity on account of break downs to be 18 to 22%. The problem needs to be addressed in a coordinated way by upgrading maintenance facilities and practices, raising staff skills, improving designs of rolling stocks and track structures and induction of new technology for enhancing the life of assets under usage condition.	Accepted.
10.	4.14 Budget Works Planning	Expert Group while recommending doing away with "Plan Head Approach" of investment had recommended investment under following heads: System Expansion Renewals, Capacity Adding Schemes, Railway Electrification, Rolling Stock, Safety Works, Technological Upgradation and others.	Accepted. The possible plan head could be as under :- 1. New Lines. 2. Gauge Conversion. 3. Corridor Approach for Capacity expansion and technological upgradation encompassing traffic facility works, workshops and sheds, rolling stock, OEW, electrification etc. 4. Renewals and Replacements. 5. Passenger Inter-Face Improvements. 6. Safety 7. Others – a. Staff Welfare b. Staff Quarters c. Research and Development. However, this may be examined in detail by a Committee.
11.	7.1 Secretary	Create a Chief Information Officer reporting to the CEO: the CIO is critical to first integrate the IT activities spread across the zones and second increase ITs importance in the overall decision-making process. The CIO will be assisted by a dedicated Task Force.	Accepted.
12.	7.2	IR should undertake an operational expenditure of Rs.350-500 crores on IT	Accepted. However, the exact quantum of

	IT	and Rs.100-300 crores of Capital Expenditure on Technology annually.	expenditure would be need-based.
13.	8.2 Budget	Clear differentiation between social obligations and performance imperatives is necessary. Government should agree to provide the capital subsidy for social projects and fund the operating losses. The Government on its part could mandate that IR operate these services at some benchmark level of operating efficiency.	Accepted. Railways will continue to discharge the dual role and Board agrees with the proposal that the Government should provide subsidy for its Public Service Obligations. Recommendations of the inter-ministerial group are being pursued by the Ministry with the Government. With the accounting improvement contemplated and costing refinement the extent of such liability will get demarcated.
14.	8.3 Planning	IR should be engaged in only those businesses directly related to its core activity of rail logistics and passenger transport. Non-core business should be spun off on an arm's length basis.	Accepted. However, it is essential to identify clear areas of core and non-core business. Some areas like Medical, Security, etc. really do not come under non-core activity as far as Railways working is concerned. Action has already been taken for setting up focused business organizations like IRCTC, RAILTEL, RVNL, CONCOR etc. In addition areas of outsourcing have also been identified by the Ministry which include outsourcing of engineering surveys, formation of Rail Land Development Authority, maintenance of IVRS, unscheduled repair of locomotives, catering services leasing of SLR etc.
15.	8.5 Secretary	Tenure based promotions do not result in formation of a powerful team of leaders. Short tenures do not allow the incumbents to undertake strategic planning for formulate or see through the implementation of operational strategies; neither do they encourage accountability.	Accepted. Tenure based system already exist for the top management position whereby tenures are already prescribed for General Managers, Board Members as well as CRB and also for DRMs/ADRMs.
16.	8.6 Finance Planning	Restructure the internal organization or IR to create an outward looking business-oriented customer-driven institution. This will involve reorganizing the core transportation	Accepted. The Organization structure should focus on the customer. However, any changes in the system, if warranted, can only be considered after the

		network into its key component part: freight passenger, suburban shared infrastructure: fixed and shared infrastructure; other. These business units will operate with a large degree of autonomy yet be held accountable for a balanced scorecard of commercial performance measures.	Accounting Reforms Study, which is underway, is completed.
17.	3.1 Commercial	As a tariff rebalancing exercise, IR should be allowed to annual adjustment of about 1-0% increase in second class sleeper fares and 8% in second-class ordinary freight on a continuous basis for about 5 years. Similarly, IR need to raise tariff for monthly season ticket for suburban travel from currently low level of only 11 single journeys.	Partially Accepted. (I) Board agreed with the concept of peak and off-peak pricing mechanism in order to cater to seasonal and daily peaks. This concept shall be extended to more number of trains. (II) Board noted that it may not be necessary to increase II class sleeper fares by 10% or II-class ordinary fare by 8%. The level of increase will have to be decided on an annual basis based on trend in volume growth and market related considerations. Monthly Season Ticket rates in Mumbai area have already been increased from 11 single journeys to 15 single journeys as a step in this direction.
18. & 19.	3.4 & 3.5 Commercial Budget	IR need to rebalance passenger tariff in order to do away with cross-subsidy. IR needs to rebalance passenger tariff in order to do away with cross-subsidy and ensure a passenger growth of over 8% per years.	Partially Accepted. I. Remarks against item No. 1 above are relevant. II. Rationalization of freight tariff through reduction of number of classes as well as reduction in the highest class was initiated in 2002-03 and further continued in 2003-04 towards this end. Further incentives have also been provided to customers for making rail transport attractive. III. There has been a similar exercise in rationalization of passenger fares as well as indexing of higher class fares to the II-class fare initiated in 2002-03 and

			continued in 2003-04 which has resulted in reduction of certain higher class fares. IV. The exercise of rationalization, both in freight and passenger, would be continued to the extent possible keeping in mind the market forces from year to year. However, it should be borne in mind that keeping in view the passenger requirements, full reduction of subsidy would not be possible.
20.	4.3	The investments that do not result in additional revenue must be eschewed. Investment in uni-gauge and new line and electrification projects must be reviewed. There is a need for more focused investment programme, which should improve productivity to cope up with traffic demands.	Partially Accepted. In so far as the current shelf of the project is concerned, the Board feels the need for prioritizing and executing the projects at the earliest. The Board agreed that for future investments the concept recommended will be kept in mind while finalizing the Annual Plans.
21.	4.8 Management Services	Indian Railways needs to reduce the staff cost by 20% within next 5 to 7 years. This will require reductions through normal retirements, spinning of ancillary activities, VRS, identifying surplus from non-core activities.	Partially Accepted. Indian Railway has planned to right-size the staff strength in the organization by controlling fresh recruitment in the vacancy caused by the normal process of superannuation and natural attrition. Indian Railways' right-sizing activities are in accordance with the initiative taken by the Government to right size the manpower. With an estimated 3% of staff retiring every year and by restricting the in-take to 1% per annum, the staff strength is planned to be reduced by about 2% per annum except safety categories needs further scrutiny and deliberations not agreed to so far wherein no right sizing is planned. The number of staff has reduced from 15.77 lakhs as on 31st March 2000 to 14.4 lakhs (Provisional) as on 31st March, 2004.

			On Indian Railways a general VRS Scheme for all employees after 20 years of qualifying service as introduced in the year 1977 is available. In addition a Safety related Retirement Scheme for two categories viz., Drivers and Gangman has also been introduced since January,2004. Further, a special VRS Scheme to deal with surplus staff on Railways and medically de-categorized staff has also been launched in August 2004 similar to scheme introduced by DoP&T in year 2002 on Civil Side.
22.	5.1 Finance Budget	To achieve the only feasible option of Strategic High Growth, Railway finances need to be restructured along with organizational restructuring. The existing financial structure and accounts as revealed through its P&L account and balance sheet, lack sufficient financial transparency and proper accounting procedure. Capital basis of IR should be restructured and its accounts recast under the Indian GAAP to reflect IR's operations in the nature of commercial going concern and its viability.	Partially Accepted. The Expert Group has worked out a capital structure with equity preference capital and debt in the ratio 1:2:3 from the gross block of IR as on 31.03.2001, after providing for cumulative depreciation and merging the same with the financials of IRFC. The existing accounts and the Balance Sheet have been recast as applicable to Companies under the Indian Companies Act. The capital structure that has been worked out will generate repayment liability for the Railways to the General Exchequer to the extent of Rs.26,350/- crore in addition to the debt liability of about Rs. 14,600/- crore on IRFC borrowing. Today, there is no repayment liability of capital to the General Exchequer. Further, the recommendation provides for budgetary support in the form of preference capital till 2007 only thereafter this would be redeemed in installments in subsequent years and effectively the budgetary support mechanism as existing now will cease to exist from the year 2008. Such a financing model in an infrastructure sector like Railways is not sustainable.

			The Accounting procedure is currently detailed to capture the various aspects of financial transaction. The government accounting is cash based against the company accounting based on accrual basis, but operation of certain suspense heads makes analysis feasible. A Government Accounting Standards Advisory Board has been entrusted with the task of formulating accounting standards for Government Entities in India. M/s. ICRA Advisory Services have also been engaged to provide inputs. In view of this Advisory Board being set up, the recommendation is partially accepted and changes in accounting procedure, if any, would depend on the decision of the Advisory Board's recommendations and acceptance thereof by the President (in consultation with C&AG.
23.	5.2 Budget	The manner of operation of depreciation fund should fit into the standard depreciation norms laid down in the Companies Act and the amounts allotted to DRF not fixed in an adhoc manner.	Partially Accepted. In the existing system, appropriation to DRF has been around 5% during the last 10 years which compares better than what the Company Act mandates. Based on the recommendations by the Standing Committee on Railways, an exercise of updating of asset registers has been undertaken. On completion of this exercise, need-based estimation of replacement requirement would be more accurate and considered thereafter.
24.	8.4 Secretary	Emphasis on inclusion of outside talent is on commercial managers. The CEO, VP (Finance) and VPO(HRD) of the IREB could be selected from the Government, the Railways, the Private Sector or Academia.	Partially Accepted. As far as part recommendation of IREB is concerned, this was valid only with corporatization of Railways, which is not accepted. However, inclusion of outside talent is accepted

			for specific activity related to financial and commercial activities.
25.	3.2 Commercial Traffic	Adopt measures to ensure freight revenue growth of 7%.	Not Accepted. Board after detailed discussion agreed that investment planning should be for the medium growth path keeping in view the general growth of GDP as well as production growth of infrastructure core products.
26.	4.5 E&R	This is hardly appropriate time to open up new fonts like reorganization of zones that has no relevance to any immediate for long term objectives.	Not Accepted. The Board after due deliberations did not accept this proposal. Reorganization of Zones is undertaken to rationalize the existing geographical sprawls and accessibility, pattern of traffic flows and economic viability in the overall context of developing a balanced rail infrastructure to serve the needs of the national economy adequately and efficiently. Railway ones are set up keeping in view the factors like size, workload, geographical sprawls and accessibility, pattern of traffic flows and economic viability in the overall context of developing a balance rail infrastructure to serve the needs of the national economy adequately and efficiently. Based on the above, the Government has created seven new Railway Zones and at present sixteen Railway Zones are operational. With the creation of smaller administrative railway zones, it has been possible to achieve an all round improvement in the functioning of the Railways due to better supervision and monitoring. Since all Zones contribute to the performance of Indian Railways as a whole, the improvement in overall

			performance of the Indian Railways indicates a significant contribution of the new Zones.
27.	4.7 Works	A complete change of approach is needed to replace incremental annual investment by a project oriented investment programme. Existence of separate project organizations influences the priority for taking up new projects in order to provide continuity of workload. The EG has made specific mention about Railway Electrification and also the Production Units.	Not Accepted. After detailed discussions, the Board was of the view that the existing set-up should continue. Each project or production requirement goes through rigorous examination and finally accepted after scrutiny at the appropriate level.
28.	4.11 PU Mechanical Electrical	Investment during 8th and 9th Plan continued through heavy borrowings in rolling stock for addition/replacement through heavy borrowings through IRFC which partly contributed to provide workload to production units for their capacity utilization. Such investments should be reviewed in future.	Not Accepted. After detailed discussion, Board noted that current requirements for rolling stock are need-based and not linked to utilization of existing capacities in Pus. The recommendation, therefore, is not acceptable.
29.	4.15 Planning	Expert Group has recommended implementation of strategic high growth scenario with investment of Rs. 1,99,630/- crore between period 2002-2016.	Not Accepted. Board against Item No. 2 Have already decided that investment planning should be for Medium Growth Path, taking into account the need based requirement for rail transport, general growth of GDP as well as production growth of infrastructure core products.
30.	4.16 Budget	The presentation OF Railway Budget to Parliament each year has a decisive impact on Railways' investment, pricing, staffing and organizational policies. This impact has ceased to be beneficial to the organization. The issue now is whether the Railway Budget, in its present form, should continue at all.	Not Accepted. Indian Railway has a district commercial bias as well as serves social and development needs of the economy. Considering the scale of its operation and sensitivity to the economy of the country, it requires focused attention through a separate budget. Ministry of Railways is an Operational Ministry unlike other Government Ministries and a separate. Budget provides operational flexibility and autonomy with accountability for

			efficient management of this large scale infrastructural organization.
31.	6.1 Budget	GOI & IR should aim to create a fully funded scheme for Pension Fund, which should be managed by an independent Board of Trustees.	Not Accepted. Indian Railways are following the Government policy and no decision can be taken unilaterally. At present pension liabilities on Indian Railways are met with by appropriating the required funds on year- to- year basis from revenue. The system at present is working satisfactorily. However, actuarial study is also proposed to be undertaken to precisely assess the size of pension liabilities for the future. It may also be mentioned that Government has already introduced a new contributory pension scheme for the new entrants w.e.f. 1.1.04. Therefore, the funds requirement for the prevailing scheme is likely to decrease in due course.
32.	6.2 Budget	Government funding should be linked t a restructuring plan and will be in the form of preference capital. Government will only provide annual subsidy of about Rs.800 cr. for un-remunerative services that IR currently provides. If similar services are required by the Government in the future they would be financed by the Government for both investment and current expenditure. 20% pension liability will devolve on the GOI perpetually. The redemption of preference capital and the dividends to be paid by IR to the Government on preference capital would be such that there would be no net disbursal from the Government to the Railways after year 2007.	Not Accepted. This recommendation is not practical. The existing level of Government support should not be reduced as the issue of compensation for IR's social service obligations is being pursued separately with the Government.
33.	6.3	Government support should be phased out and Indian Railways should start borrowing right from the first year of restructuring plan. The funding support provided by the Government should be	Not Accepted. Government support is necessary to cover existing shelf of projects as well as to finance low-yield but socially relevant projects covered by the

		linked to a restructuring plan.	Remote Area Connectivity Scheme. RVNL has also been created to undertake bankable projects, while Ministry of Finance has initiated action to resort to viability gap funding, further promoting public-private participation in the Railway projects. These would impact the financial health of the Railways in a positive manner.
34.	8.1	Institutional separation of roles, into policy regulatory and management functions need to be ensured. The essential features of major restructuring of IR, as suggested by the Expert Group, are : Corporatization of Indian Railways, Division of responsibility of functioning of railways into the three institutions – Indian Railway Corporation, Indian Railway Regulatory Authority, Government of India (Ministry of Railways)	Not Accepted. Corporatization will not solve problems of Indian Railways. More appropriately, review of business processes greater delegation, authority and powers at various levels would be more beneficial. In recent years, substantial devolution of powers has been made Zonal Railways especially in the areas of safety works and procurement of material. Restructuring is, therefore, not required as greater delegation of power and authority to Zonal Railways as well as in the Ministry is continuing process. Under the Railway's Act, 1989 full powers have been conferred on the Ministry of Railways (Railway Board) to fix the tariff rates. However, as a regular Annual Budget exercise, the proposals for adjustments in fares and freight rates are debated and approved by the Parliament which acts as a Regulatory Authority. Rail tariffs are also subject to continuous scrutiny by the various Parliamentary Committees. Ministry or Railway is of the opinion that Rail Tariff Regulatory Authority is not required. A Note for consideration of Cabinet has already been sent.

Sam Pitroda Committee 2011 (Expert Group for Modernization of Indian Railways)

(a) Areas of Recommendations-The Group made total 113 recommendations on 15 focus areas which are listed as under (No. Given in bracket is No. Of recommendations in that focus area):-

Track & Bridges(4), Signalling(5), Rolling Stock(8), Stations & Terminals(4), PPP Initiatives(11), Land & Airspaces(7), Dedicated Freight Corridor(3), High Speed Passenger Train Corridor(2), Review of Projects(7), Information & Communication Technology(10), Indigenous Development(7), Safety(10), Funding(5), Human Resource(11), Organisation(19).

Sr. No	Rec. No.	Area	Recommendation Details
	1.0		
1.	1.1	**Track and bridges**	Modernize 19000 kms of existing tracks (of routes A, B & D special) for heavier freight trains at 25 tonne axle load and to achieve higher speeds of 75/100 kmph. The tracks on A & B routes should be fit for passenger speeds of 160/200 kmph.
2.	1.2		Eliminate level crossings and provide fencing alongside tracks. As a part of DFC, Elimination of level crossings on parallel alignment i.e. Vadodara to Mumbai and Khurja to Kolkata is already planned. Therefore, for modernization, IR only needs to focus on Delhi-Vadodara and Delhi-Khurja sections. As a rough estimate, Rs.4000 crores would be required to build ROBs, limited height subways and manning of the unmanned level crossings. The total cost of the fencing will be about Rs.1000 crores.
3.	1.3		Strengthen 11,250 bridges on A, B & D special routes.
4.	1.4		Provide 100% Mechanized track maintenance on Routes A&B.
	2.0		
5.	2.1	**Signaling**	Implement automatic block signalling on A&B routes with Train management system.
6.	2.2		Provide communication based train control like Moving block system on C class routes of Central and Western Railways.
7.	2.3		Deploy On – board train protection system with cab signalling on A&B routes.
8.	2.4		Introduce GSM–based mobile train control communication system on A, B&C routes.
9.	2.5		Establish centralised maintenance control centres.
	3.0		
10.	3.1	**Rolling Stock**	Introduction of new generation locomotives. • Electric locomotives (9000 and 12000 HP) • Diesel Locomotives (5500 HP)
11.	3.2		Traction development for improvement in fuel efficiency, emission and reliability.
12.	3.3		High speed potential LHB coaches (160/200 kmph).
13.	3.4		Upgraded sub-urban coaches.

14.	3.5		Train sets for high speed inter-city travel.
15.	3.6		Modern high pay to tare ratio wagons.
16.	3.7		Green toilets on all passenger trains
17.	3.8		Heavy haul freight bogies.
	4.0		
18.	4.1	**Station and Terminals**	Modernize 100 major stations out of the total 7083 stations immediately. A total of 770 stations should be targeted for re-development in next 10 years.
19.	4.2		Develop 34 multi-model logistic parks at identified locations to provide integrated transport infrastructure facilities for users
20.	4.3		Modernize existing Railway Freight Terminals-Take up top 50 terminals
21.	4.4		Enhance customer amenities and services at stations and on trains, with special provisions for physically challenged passengers.
	5.0		
		PPP Initiatives	Develop PPP models in the various areas of Railways to attract private investment to augment over capabilities related to:
22.	5.1		Stations and Terminals.
23.	5.2		High Speed Rail Corridors.
24.	5.3		Elevated Rail Corridor.
25.	5.4		Private Freight Terminals
26.	5.5		Leasingof Wagons.
27.	5.6		Loco and Coach Manufacturing Units.
28.	5.7		Captive Power Generation
29.	5.8		Renewal Energy Project (Solar, Wind etc.)
30.	5.9		Railway Hospitals.
31.	5.10		Railway Schools.
32.	5.11		Merchandising.
	6.0		
33.	6.1	**Land and Air space.** Leverage and monetize Land and Air space.	Conduct GIS Mapping of land resources available with IR expeditiously.
34.	6.2		Complete digitization of land records and perfection of tilting at the earliest.
35.	6.3		Obtain policy concessions from Govt. of India (GOI). For long term lease and licensing by Railways, land rights must belong to them.
36.	6.4		Garner state government support for land use and higher FSI.
37.	6.5		Monetize Land assets through creative PPP initiatives.
38.	6.6		Monetize air space above the platforms & rail tracks. A pilot project could be immediately taken up in the Mumbai sub-urban Railway system to monetize the air space.
39.	6.7		Set up SPV, if required more than one, to handle land and air space.
	7.0		

40.	7.1	**Dedicated Freight Corridors**	Construct Eastern and Western dedicated freight corridors (3,338 kms.) in the next five years.
41.	7.2		Construct North-South, East-West, East-Coast and Southern Dedicated Freight Corridors (6,200 kms) in the next ten years.
42.	7.3		Upgrade feeder routes to DFCs (6,000 kms) for 25 tonne axle load train running.
	8.0		
43.	8.1	**High Speed Passenger Train Corridors**	Construct a High Speed railway line between Ahmedabad and Mumbai with speed of 350 kmph.
44.	8.2		Undertake detailed studies for 6 other High Speed rail corridors already identified. These include (1) Delhi-Chandigarh-Amritsar(450 kms); (2) Hyderabad-Dornakal-Vijaywada-Chennai (664kms); (3) Howrah-Haldia (135 kms); (4) Chennai-Bangalore-Coimbtore-Ernakulam (850 kms); (5) Delhi-Agra-Lucknow-Varanasi – Patna (991 kms) & (6) Ernakulam-Trivandrum (194 kms)
	9.0		
45.	9.1 9.1.1 9.1.2 9.1.3 9.1.4	**Review of Projects**	Expedite implementation of the following priority projects: • 101 Projects in advance stage of completion where 50% to 90% of the investments have already been made. • Projects already sanctioned – Rail tracks out of the total of 340 rail track projects [new line (129, gauge conversion (45) and doubling (166) projects] of total track length 33,133 kms, the following would be taken up a priority projects. • 115 doubling projects covering a length 6643 kms. (sanctioned) • 15 new line/gauge conversion projects covering a length 700 kms. (sanctioned)
46.	9.2		Sanction project for rail tracks. 15 new line/doubling projects covering a length 3092 kms (not sanctioned).
47.	9.3		Implement electrification of 7500 RKM in the next five years.
48.	9.4		Add 10,000 kms of new lines in the next five years. These new lines are to largely. Achieve social inclusion and would not be remunerative.
49.	9.5		Provide funds for non-viable projects being implemented purely for social inclusion for special fund set up by GOI for this purpose. Reimburse O&M deficit determined through transparent accounting and agreed to by the regulator.
50.	9.6		Provide the 'first' and 'last' mile connectivity by creating appropriate policy framework.

51.	9.7		Identify and commission in a mini mission mode bypasses at junction stations and rail flyovers for grade separation.
	10.0		
52.	10.1	**Information and Communica-tion Technology (ICT)**	Set up Real Time Information System (RTIS) to provide real time information at stations and on running trains.
53.	10.2		Set up Radio Frequency Identification (RFID) tracking system for wagons, coaches and locomotives to enhance wagon management and real time monitoring.
54.	10.3		Provide internet access at 342 Railway Stations (58 'A1' class and 284 'A' Class) immediately.
55.	10.4		Establish unified IP-based ICT platform for 6000 Railway Stations.
56.	10.5		Review CRIS and integrate into IP-based ICT agenda.
57.	10.6		Leverage and expand Railtel optical fibre network
58.	10.7		Use ICT to modernize Organisation, Management, Development, Finance, Project, Management, Research, Procurement, Payment etc.
59.	10.8		Introduce e-file to computerize Railway files and expedite decision making.
60.	10.9		Introduce Mobile ticketing & commerce for a variety of Railway applications.
61.	10.10		Upgrade and integrate Railway websites and use social media creatively for customer feedback, consumer education and social messages.
	11.0		
62.	11.1	**Indigenous Development**	Develop substantial indigenous capabilities to be a global leader in • State-of-the-art Railway technologies. • Railway components and equipments for global markets.
63.	11.2		Establish Indian Institute of Railway Research with Centre of Excellence in: • Safety • Wagon prototyping • Mechatronics • Green toilets, etc.
64.	11.3		Upgrade existing railway R&D facilities.
65.	11.4		Strengthen RDSO to build local capabilities.
66.	11.5		Upgrade indigenous manufacturing (foundry facilities for higher axle load bogies).
67.	11.6		Develop Indian Standards, critical vendors and protocols for Railways.
68.	11.7		Enhance University Interface with Railway Laboratories in Academic Institutions.

	12.0		
69.	12.1	**Safety**	Deploy latest track machines for mechanized maintenance of track.
70.	12.2		Install wheel impact load detectors.
71.	12.3		Modernize and renovate railway workshops.
72.	12.4		Equip trains with Train Protection Warning System (TPWS).
73.	12.5		Install vehicle borne digitized and recordable ultrasonic flaw detectors to cover the entire Railway system.
74.	12.6		Eliminate unmanned level crossings by manning, closure, merger, construction of over bridges and underpasses.
75.	12.7		Upgrade coaching depots.
76.	12.8		Upgrade disaster management facilities & related services.
77.	12.9		Upgrade Network Management Centres.
78.	12.10		Use Social Networks/ cameras/ videos and other new tools and technologies extensively for safety and security.
	13.0		
79.	13.1	**Funding**	Mobilize total investment requirements of Rs. 5,60,396 crores for the proposed modernization initiatives.
80.	13.2		Outline an investment of Rs.8,39,000 crores, during the XIIth FYP, which includes Rs. 3,96,000 crores of modernization plan investment recommended by us. It is a quantum jump from investment levels of Rs. 2,03,000 crores in XIth Plan and Rs. 84,000 crores in Xth Plan.
81.	13.3		Follow the following funding pattern and bridge the gap of Rs. 16,496 crores from the following sources. a. Disinvestment in Railway PSUs. b. Re-densification/ commercialization of surplus land in existing Railway Colonies in different locations. A few pilot projects could be immediately explored. c. Commercial exploitation of Railway Schools and Hospitals, without displacing any of the priorities from the point of view of IR employees. Management contracts (on the basis of revenue sharing) could be tried for some of the larger hospitals/schools with a view to achieve significant upgradation of standards. d. Modernization surcharge from passengers on a per passenger km basis.
82.	13.4		Source through PPP the balance requirement of Rs. 164,000 crores of the modernization plan to be included in the XIIIth plan.
83.	13.5		Create a separate **'Modernization Fund'** on the lines of SRSF to fund these initiatives in a sustainable manner.
	14.0		
84.	14.1	**Human Resource**	Install and operationalize immediately modern Computerized Human Resource Management system with data base and inventory/Resume of all present employees.

85.	14.2		Reduce and gradually eliminate induction of unskilled staff.
86.	14.3		Create and impart specialised courses in partnership with academic institutions.
87.	14.4		Launch a series of in-service training programs immediately.
88.	14.5		Rationalize and consolidate multiple services and cadres without sacrificing the benefit of specialization and business capabilities.
89.	14.6		Offer graduate program in Railway Technology at IITs and Railway management at IIMs.
90.	14.7		Enable lateral recruitment from market for specialist functions
91.	14.8		Upgrade ICT skills of present officers and employees substantially.
92.	14.9		Review and Restructure existing training institutions for improving eco system and modernization.
93.	14.10		Review Railway health system separately to meet aspiration of Railway families and Modernization plan.
94.	14.11		Create a system of reward for collective performance and variable pay linked to incremental surplus generated by various units.
	15.0		
95.	15.1	**Organisation**	Re-organise Railway Board along business discipline to reflect Chairman as Chief Executive Officer and Members for: • Safety • Business development/commercial • Technology/ICT & Signaling • Freight • Passenger Services • Infrastructure • Finance • HR • PPP
96.	15.2		Create commodity wise Key Account Directors under Member Freight for major commodities.
97.	15.3		Create Key Account Directors of sub-urban, long distance passenger etc. under Member Passenger.
98.	15.4		Ensure autonomy, flexibility and accountability at all levels with clear P&L responsibilities.
99.	15.5		Make provisions for handling of all parliamentary functions by a Joint Secretary level Officer in the Ministry, which would set the RB free to focus exclusively on business issues.
100.	15.6		Empower Zonal Railways along with accountability: • More de-centralized decision making in critical areas like safety, traffic facility, passenger amenity etc. • GMs of Zonal Railways to be empowered to take decisions, within a framework of rules and investment limits.
101.	15.7		Revamp accounting systems so that separation between the cost of infrastructure services and operational activities and rational pricing is achieved and train-wise, route-wise profitability analysis is available.

102.	15.8		Re-engineer business processes to streamline the decision making process to bring about accountability, result orientation and responsiveness at all levels and develop IT tools with this objective in mind.
103.	15.9		Modernize procurement processes and benchmark products and suppliers.
104.	15.10		Review the existing PPP Policy framework in the light of hitherto poor response and PPP experience.
105.	15.11		Create a post of Member (PPP) responsible for project development and processing all PPP projects to facilitate their speedy sanction by the Government and award of concession. The Member should have a multi-disciplinary team of officers, including Finance, to deal with various Railway Projects.
106.	15.12		Establish a Committee for approval of PPP projects to be headed by Chairman, Railway Board with Financial Commissioner, Member (PPP) and the concerned member to whose area of responsibility the project belongs. The process and procedure followed should be similar to that of PPPAC followed in GOI.
107.	15.13		Appoint a 'PPP Ombudsman' to resolve any disputes that may arise between the Private Sector and Government in interpretation and enforcement of provisions of the agreements.
108.	15.14		Constitute a Railways Tariff Regulatory Authority in order to provide a level playing field to all stakeholders.
109.	15.15		Establish a separate Authority/SPV/Organization for implementation of Major Projects such as development of high speed corridors, redevelopment of railway stations etc
110.	15.16		Build capacity for the officers at the Zonal Railways to manage PPP projects. A PPP cell should be constituted in each zone to identify, develop, implement and monitor projects at the Zonal level.
111.	15.17		Computerize all Railway business /operations including financial management, inventory etc.
112.	15.18		Implement 'Mission Mode' approach for all 15 focus areas with clear objectives, measurable milestones, tangible deliverables and well defined time lines. • Each of the 15 missions should be headed by a Mission Director for a three year term, with autonomy to take decision in their respective areas. • All the mission directors and associate teams should report to the Railway Board. • Each mission should be provided with appropriate budget and operational autonomy to implement. • Each mission director should use standard project management tools to manage and monitor.
113.	15.19		Set up a High Level Committee to facilitate co-ordination amongst the 15 missions, fast track implementation and address bottlenecks, coming in the way of implementation.

Funding for the initiatives/other recommendations proposed by Sam Pitroda Committee on Modernization:

- Total investment requirements for modernisation initiatives assessed as Rs. 5,60,396 crore.
- The Committee indicated additional requirement of Rs. 4,42,744 crore for various other investments proposed (other than modernisation initiatives).
- Thus, total estimated requirement of funds, for Modernisation and for other capacity augmentation initiatives was Rs 10,03,000 crore. As per the Committee, Rs.8,39,143 crore to be invested during the 12th Five Year Plan and Rs.1,64,000 crore during the 13th Plan.
- Sourcing of funds recommended by the Committee :

SOURCE OF FUNDING OVER NEXT 5 YEARS	
Source of Funds	**Rs. In Crore**
Gross Budgetary Support	**250,000**
Internal Generation	**201,805**
Leasing / Borrowings	**101,000**
PPPs	**3,93,024**
Dividend Rebate	**24,000**
Road Safety Fund	**16,842**
PSU Disinvestment/Commercial Exploitation/Modernisation Surcharge	**16,469**
TOTAL	**10,03,000**

The Committee recommended a separate 'Modernization Fund'. Further, for the level of funding proposed, the gross budgetary support (GBS) needs to go up 2.5 times and the internal generation 5.3 times respectively from the present level.

Status of Implementation of Recommendations:

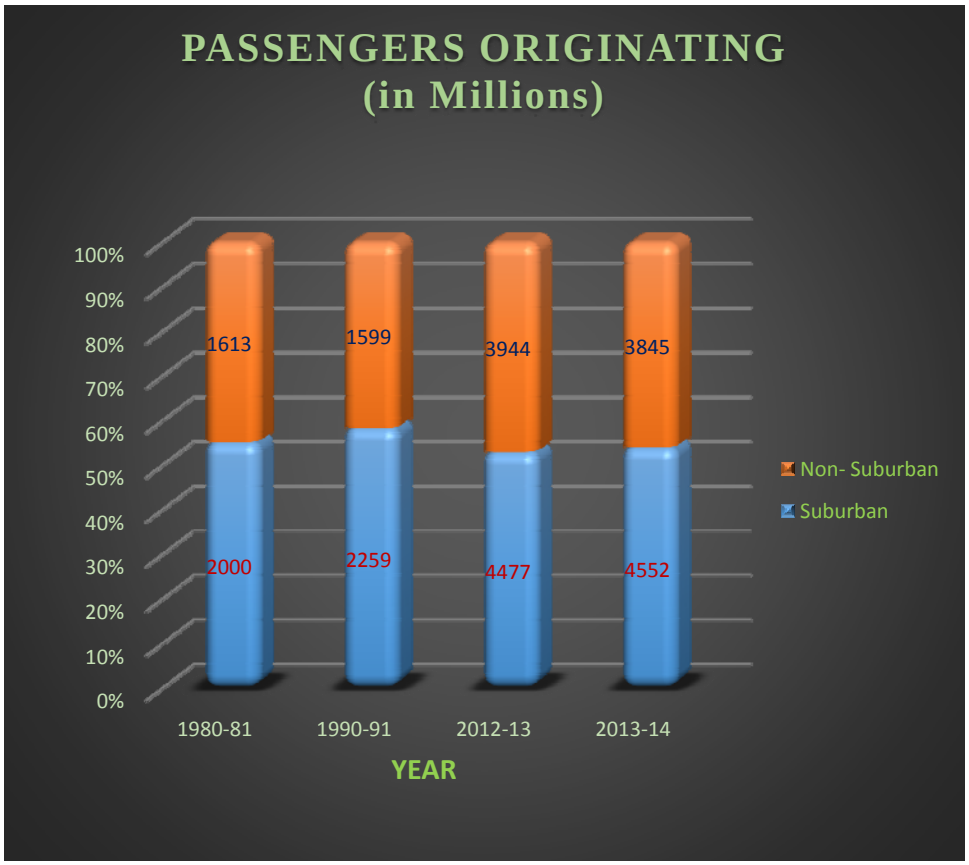
i. Railways have already initiated action for implementation of 26 recommendation of the Expert Group pertaining to elimination of level crossings & unmanned level crossings. mechanised maintenance of track, introduction of new generation locomotives, traction development for improvement in fuel efficiency, emission and reliability, high speed potential LHB coaches, upgradation of suburban coaches, green toilets on all passenger trains, development of modern high pay to tare ratio wagons, enhancement of customer amenities at stations and on trains, development of various PPP models to attract private investment, feasibility studies of high speed and semi high speed corridors, establishment of loco and coach manufacturing units, installation of captive power generation and renewal energy projects (solar, wind etc), monetization of land assets and air space above the platforms and rail tracks, construction of dedicated freight corridors, implementation of electrification, introduction of mobile ticketing, trials of train protection warning system, elimination of induction of unskilled staff and setting up of Rail Tariff Authority.

ii. The funding requirement for modernisation and other initiatives suggested by the Committee is a challenge for the Railways. The suggestions that gross budgetary support should go up 2.5 times and internal generation 5.3 times from present levels are in the current context totally unrealistic. Compared to the approved plan size of the Railways during the 12th Five Year Plan of Rs.5,19,000 crore, the actuals in the first 3 years is much less than the proportionate figures and, therefore, the overall actual for the 12th Plan period is likely to be around Rs.3.2 to 3.5 lakh crore as against the Committee's projection of Rs.8.39 lakh crore. While most of the technical recommendations of the Committee have been acted upon, the scale of implementation is limited due to resource constraints.

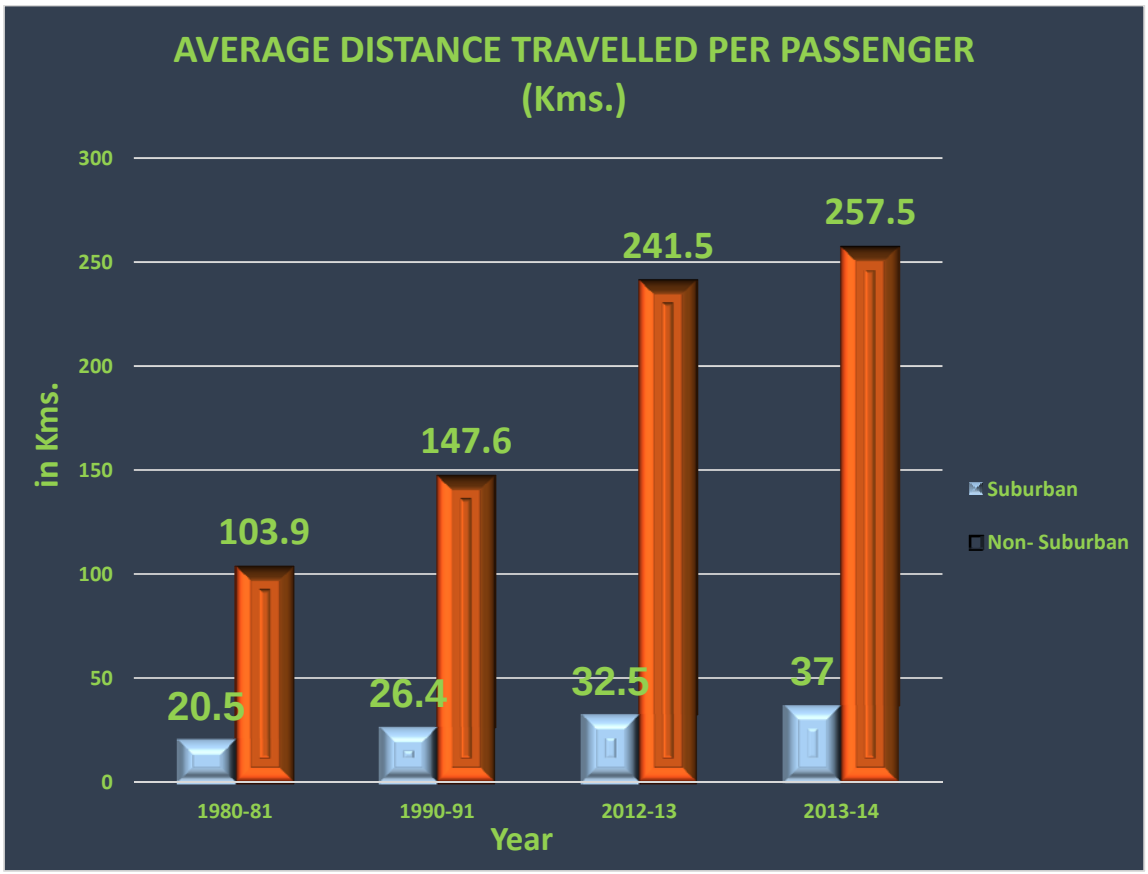
Annexure 2: IR Data and Tables

ORIGINATING PASSENGERS & AVERAGE LEAD

PASSENGERS ORIGINATING (Millions)			
Year	**Suburban**	**Non- Suburban**	**Total**
1980-81	2000	1613	3613
1990-91	2259	1599	3858
2012-13	4477	3944	8421
2013-14	**4552**	**3845**	**8397**

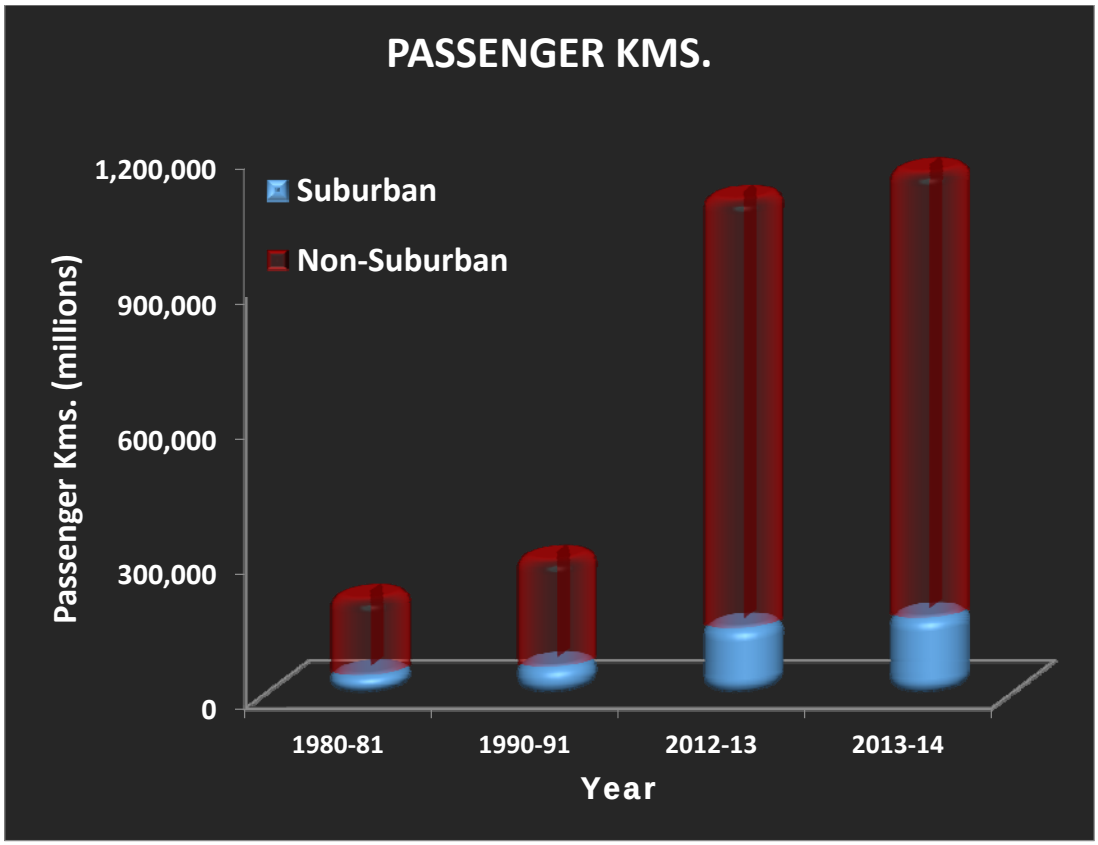


AVERAGE DISTANCE TRAVELLED PER PASSENGER (Kms.)			
Year	**Suburban**	**Non- Suburban**	**Total**
1980-81	20.5	103.9	57.7
1990-91	26.4	147.6	76.6
2012-13	32.5	241.5	130.4
2013-14	**37**	**257.5**	**138**



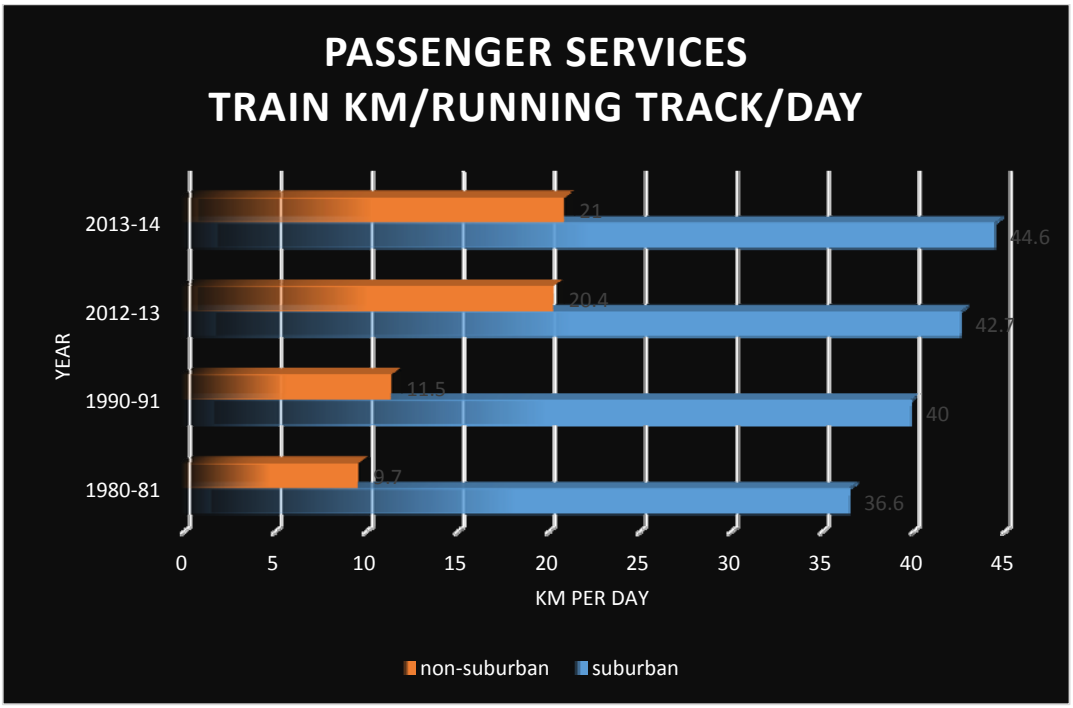
PASSENGER KMS. (Millions)

Year	Suburban	Non-Suburban	Total
1980-81	41,086	1,67,472	2,08,558
1990-91	59,578	2,36,066	2,95,644
2012-13	1,45,654	9,52,449	10,98,103
2013-14	**1,68,589**	**9,90,153**	**11,58,742**



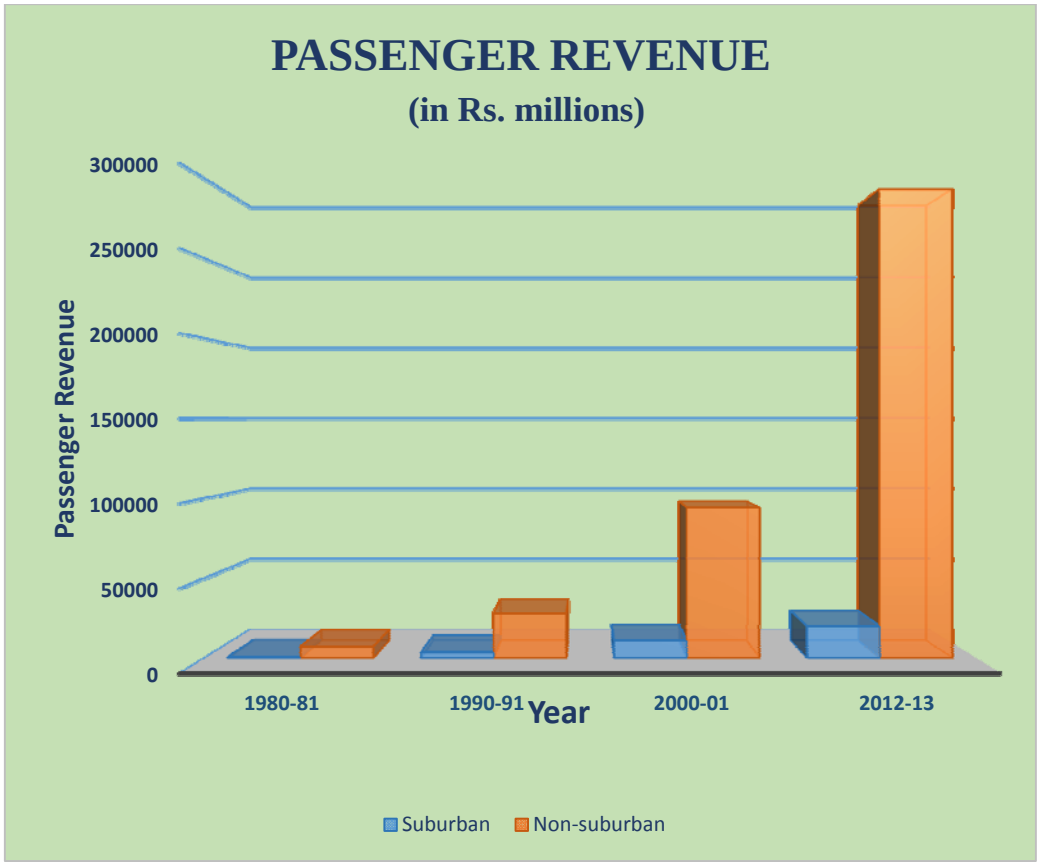
PASSENGER SERVICES

	Suburban (Millions)		Non-Suburban (Millions)		Train Kms. Per running track km. per day	
Year	Train Kms.	Vehicle Kms.	Train Kms.	Vehicle Kms.	suburban	non-suburban
1980-81	35.55	601.5	258	5,582	36.6	9.7
1990-91	48.37	840.7	316	7,739	40	11.5
2012-13	78.53	1651.8	626	20,595	42.7	20.4
2013-14	**81.77**	**1824**	**652**	**23,542**	**44.6**	**21**



PASSENGER REVENUE
(Rs. in millions)

Year	Suburban	Non-suburban	Total
1980-81	905.2	7,369.50	8,274.70
1990-91	3,569.80	27,877.40	31,447.20
2000-01	10,911.40	93,920.20	1,04,831.60
2012-13	**20,104.40**	**2,93,124.00**	**3,13,228.40**



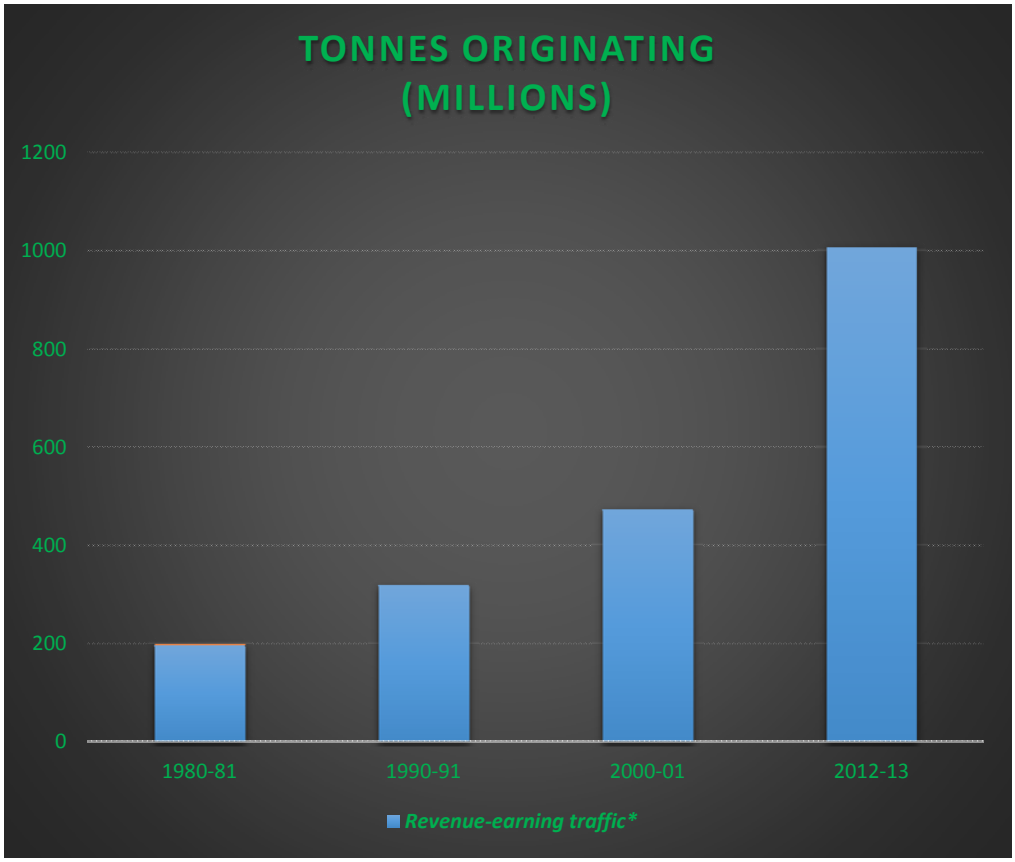
FREIGHT OPERATION

(Million tonnes)

ORIGINATING TONNAGE

Year	Revenue-earning traffic*	Total traffic
1980-81	195.9	220
1990-91	318.4	341.4
2000-01	473.5	504.2
2012-13	**1,008.09**	**1,014.15**

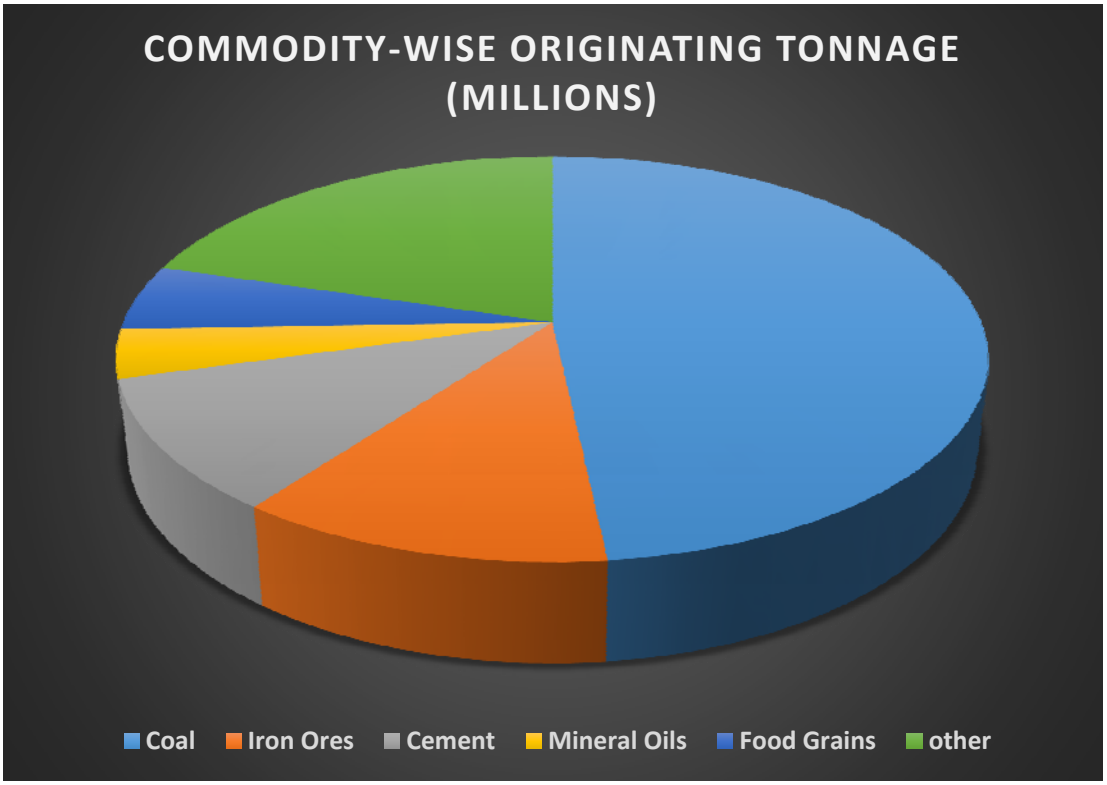
***Excluding loading of Konkan Railway.**



FREIGHT OPERATION

COMMODITY-WISE ORIGINATING TONNAGE (MILLIONS)

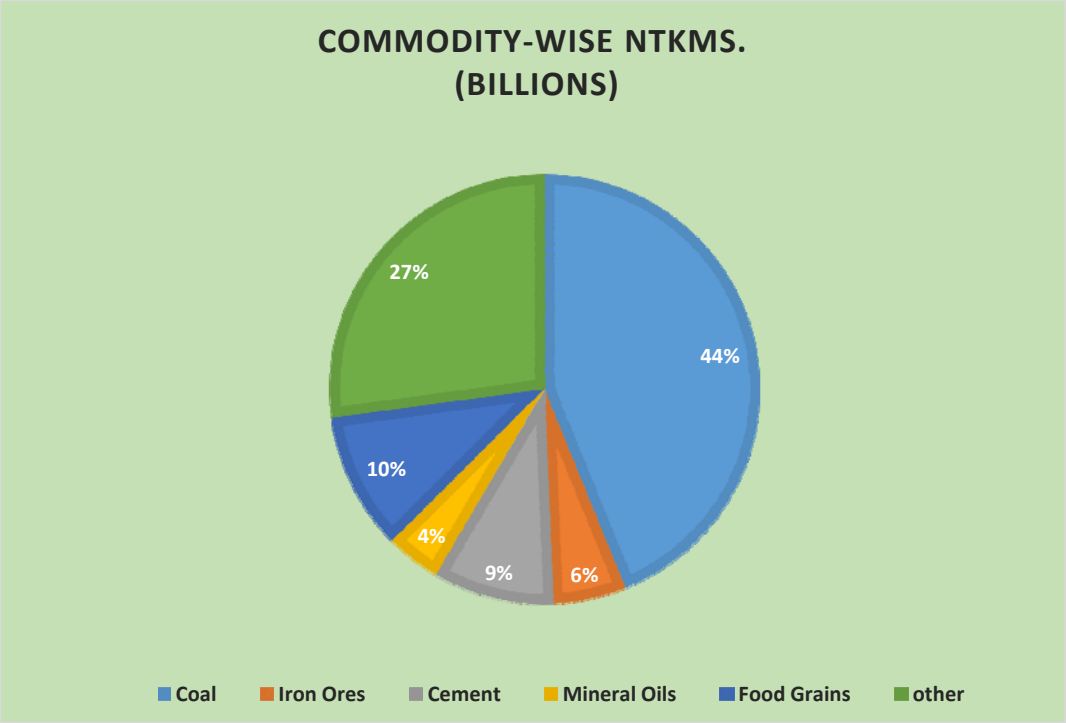
BULK COMMODITIES	2013-14
Coal	508.06
Iron Ores	124.27
Cement	109.8
Mineral Oils	41.16
Food Grains	55.09
other	213.26
total	1051.64



FREIGHT OPERATION

COMMODITY-WISE NTKms. (Billions)

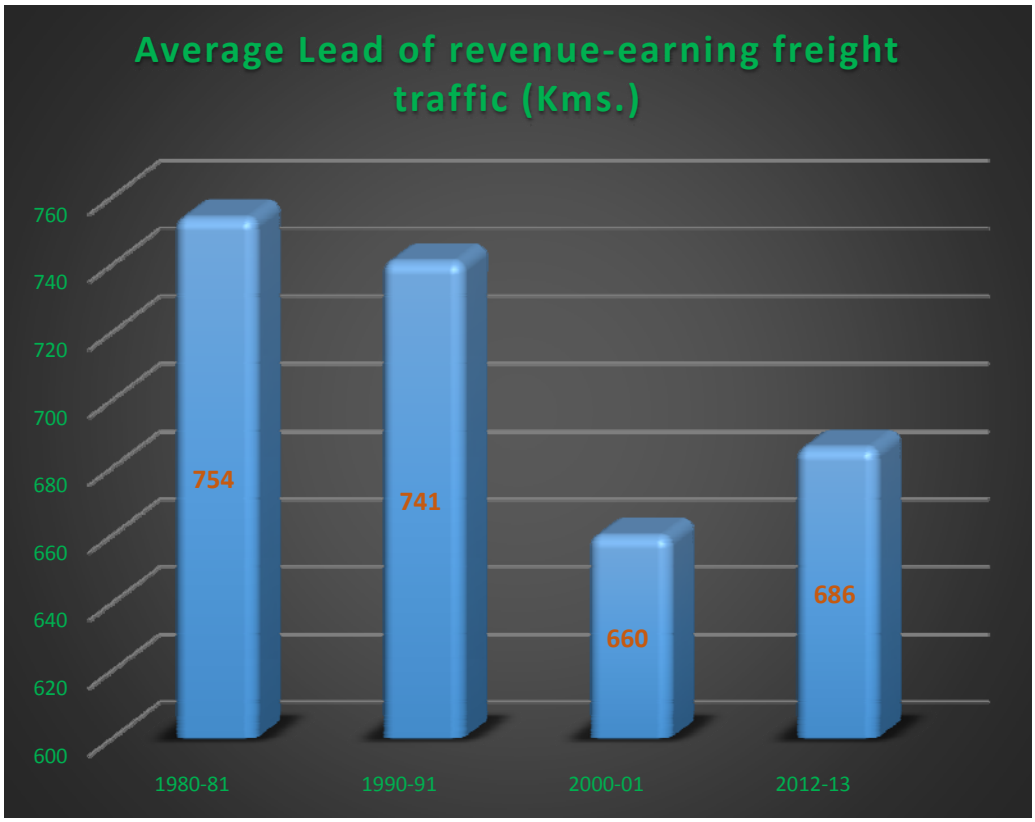
BULK COMMODITIES	2012-13
Coal	303.35
Iron Ores	38.08
Cement	62.68
Mineral Oils	28.49
Food Grains	71.33
other	187.73
total	691.66



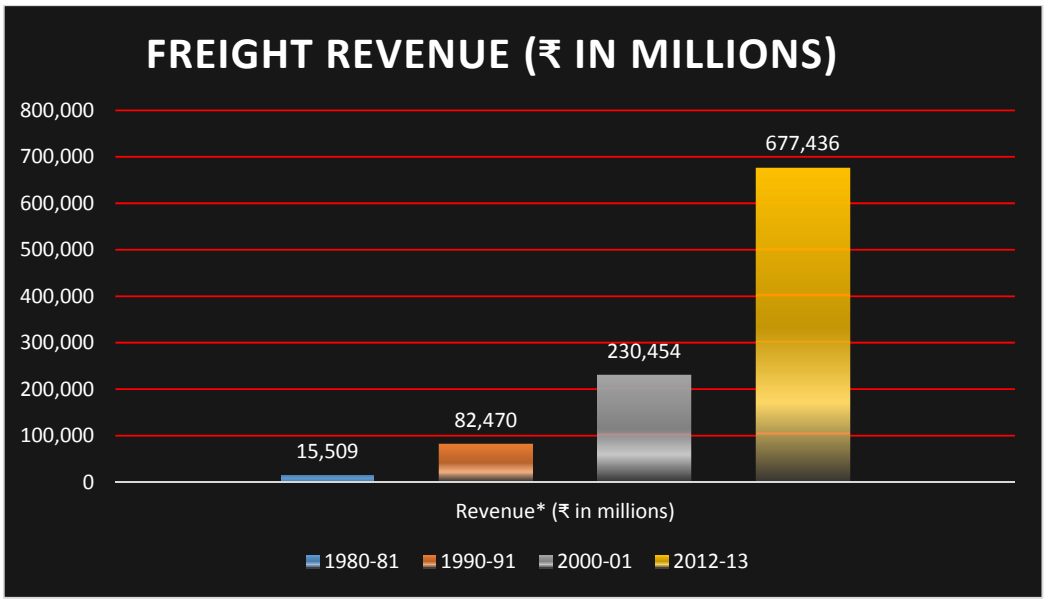
FREIGHT OPERATION

AVERAGE LEAD

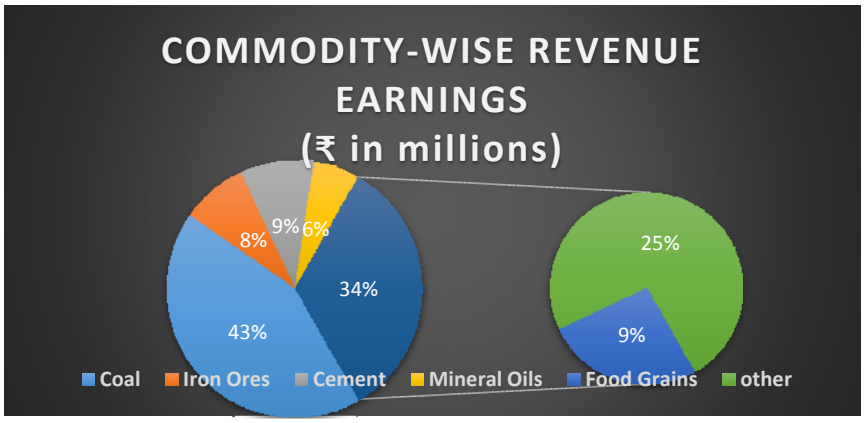
Year	Average Lead of revenue-earning freight traffic (Kms.)	Index (1980-81=100)
1980-81	754	100
1990-91	741	98.3
2000-01	660	87.5
2012-13	686	91

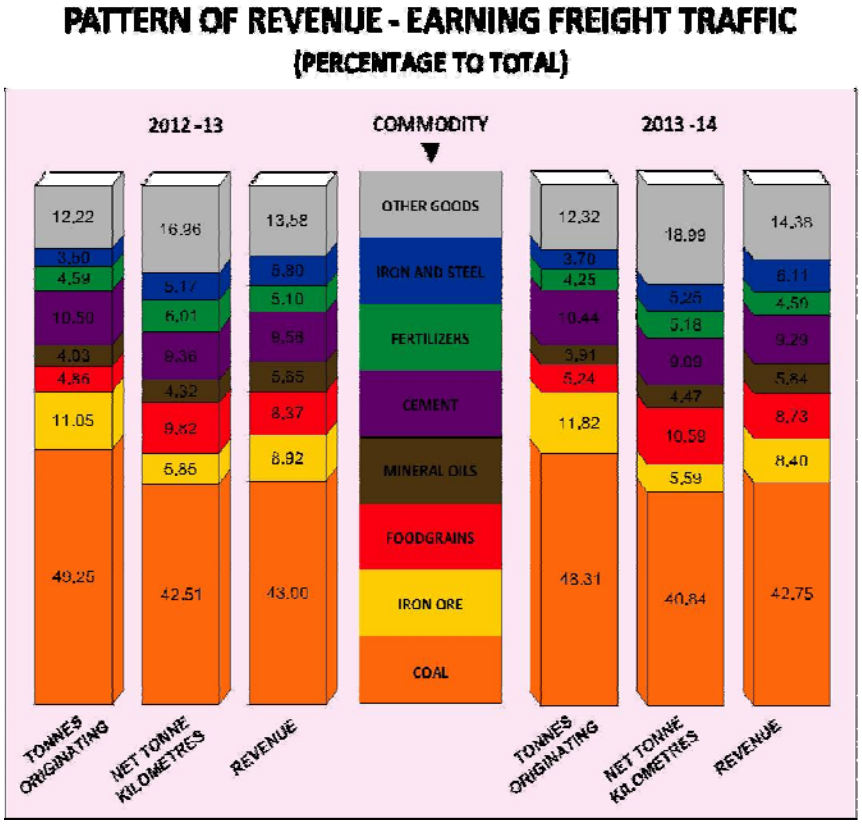


FREIGHT OPERATION		
REVENUE		
Year	**Revenue* (Rs. in millions)**	**Revenue per tonne km. (Paise)**
1980-81	15,509	10.5
1990-91	82,470	35
2000-01	2,30,454	73.78
2012-13	6,77,436	120.69



FREIGHT OPERATION	
COMMODITY-WISE REVENUE EARNINGS (Rs. in millions)	
BULK COMMODITIES	**2013-14**
Coal	3,91,444
Iron Ores	76,887
Cement	85,074
Mineral Oils	53,439
Food Grains	79,975
other	2,25,887
Total	912706


COMMODITY-WISE REVENUE EARNINGS
(₹ in millions)
8%
9%
6%
34%
43%
25%
9%
Coal
Iron Ores
Cement
Mineral Oils
Food Grains
other

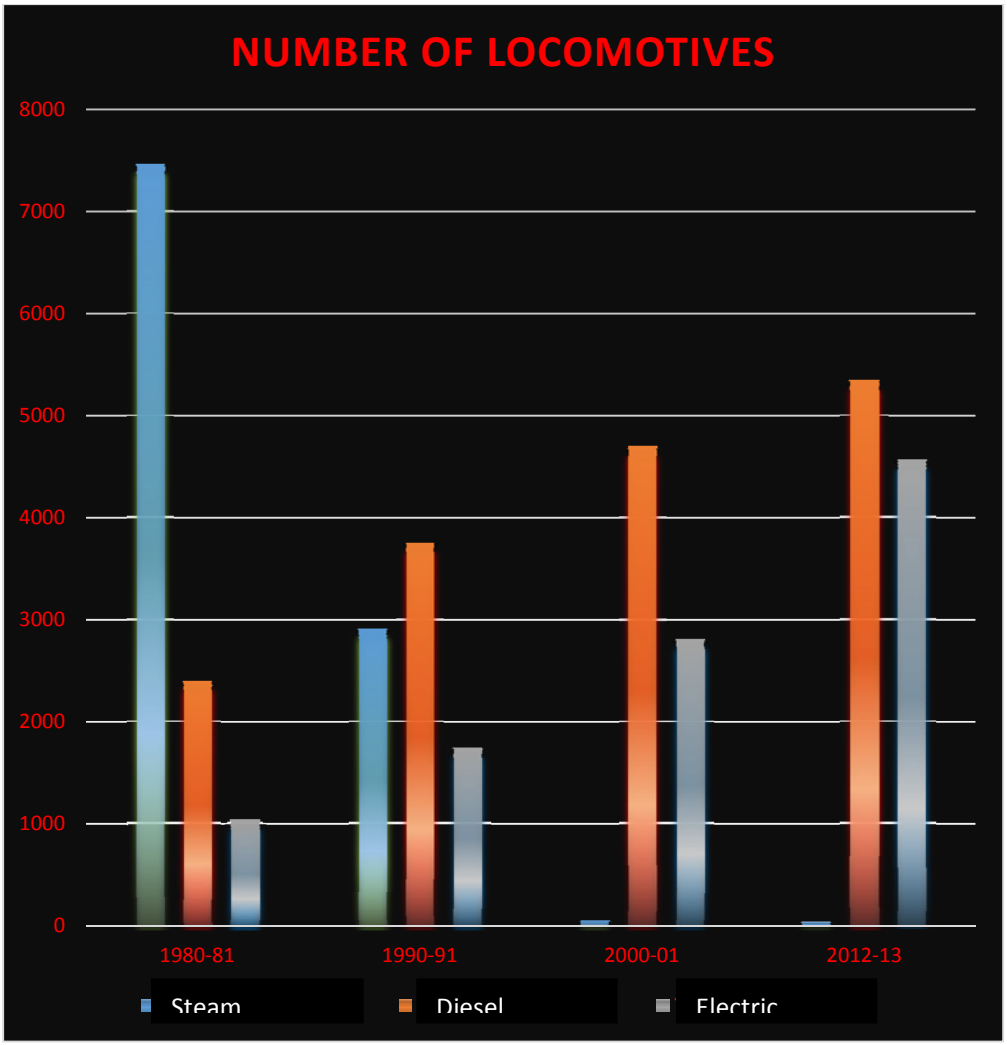

PATTERN OF REVENUE - EARNING FREIGHT TRAFFIC
(PERCENTAGE TO TOTAL)
2012 -13
COMMODITY
2013 -14
OTHER GOODS
IRON AND STEEL
FERTILIZERS
CEMENT
MINERAL OILS
FOODGRAINS
IRON ORE
COAL
12.22
3.60
4.59
10.50
4.03
4.86
11.05
49.25
16.96
5.17
6.01
9.36
4.32
9.82
5.86
42.51
13.58
5.80
5.10
9.58
5.65
8.37
8.92
43.00
12.32
3.70
4.25
10.44
3.91
5.24
11.82
43.31
18.99
5.26
5.18
9.09
4.47
10.59
5.59
40.84
14.38
6.11
4.50
9.29
5.84
8.73
8.40
42.75
TONNES ORIGINATING
NET TONNE KILOMETRES
REVENUE
TONNES ORIGINATING
NET TONNE KILOMETRES
REVENUE

ROLLING STOCK

LOCOMOTIVES

NUMBER OF LOCOMOTIVES

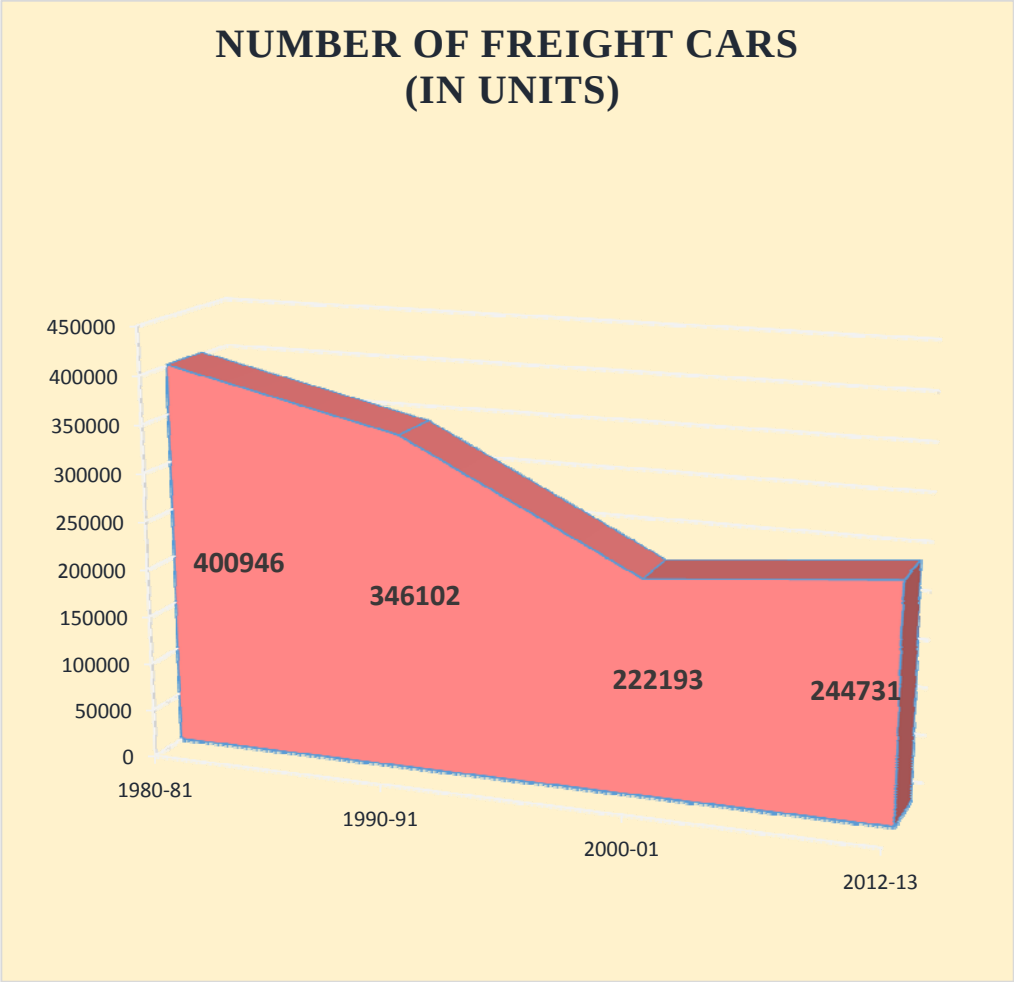
	Broad Gauge			Metre Gauge			TOTAL (including NG)		
Year	Steam	Diesel	Elec.	Steam	Diesel	Elec.	Steam	Diesel	Elec.
1980-81	4361	1866	1016	2763	470	20	7469	2403	1036
1990-91	1295	2893	1723	1482	731	20	2915	3759	1743
2000-01	-	3881	2791	33	657	19	54	4702	2810
2012-13	**-**	**4936**	**4568**	**30**	**267**	**-**	**43**	**5345**	**4568**



FREIGHT CARS/WAGONS

NUMBER OF FRIEGHT CARS (IN UNITS)

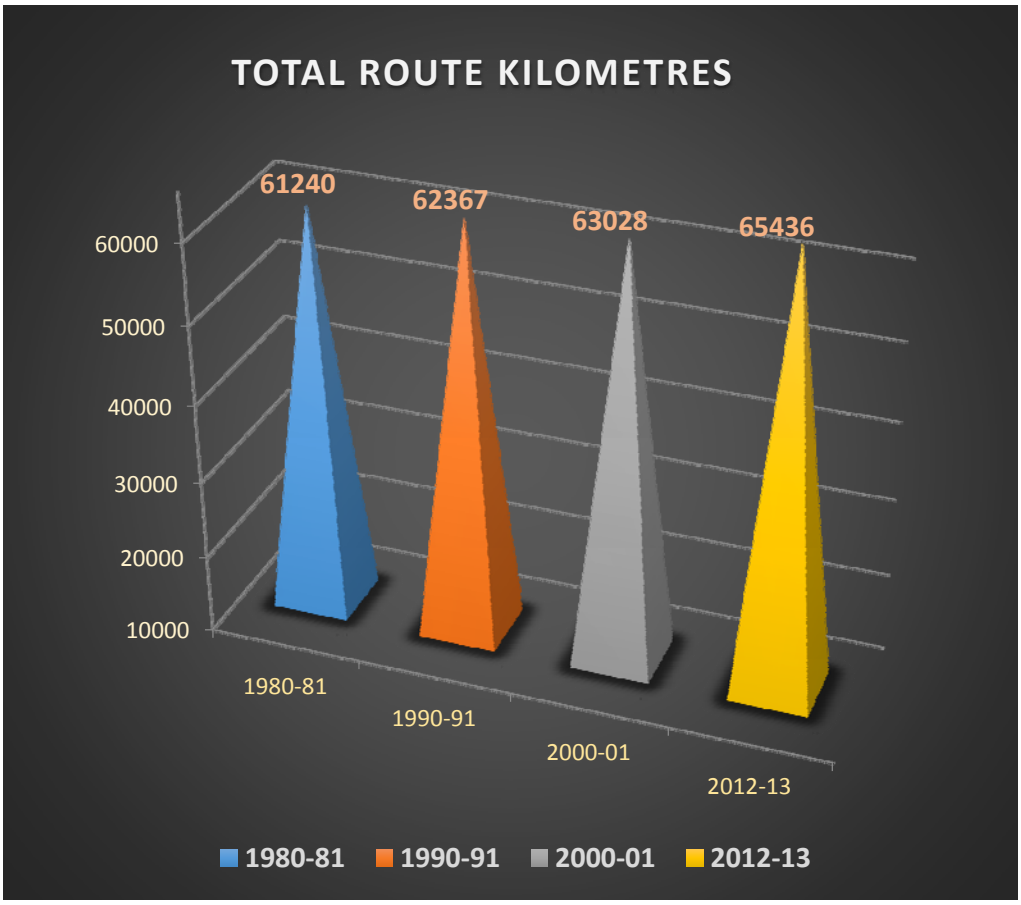
Year	Broad Gauge	Metre Gauge	TOTAL (incl. N.G.)
1980-81	309194	86839	400946
1990-91	284362	58576	346102
2000-01	205959	15294	222193
2012-13	**240838**	**3734**	**244731**



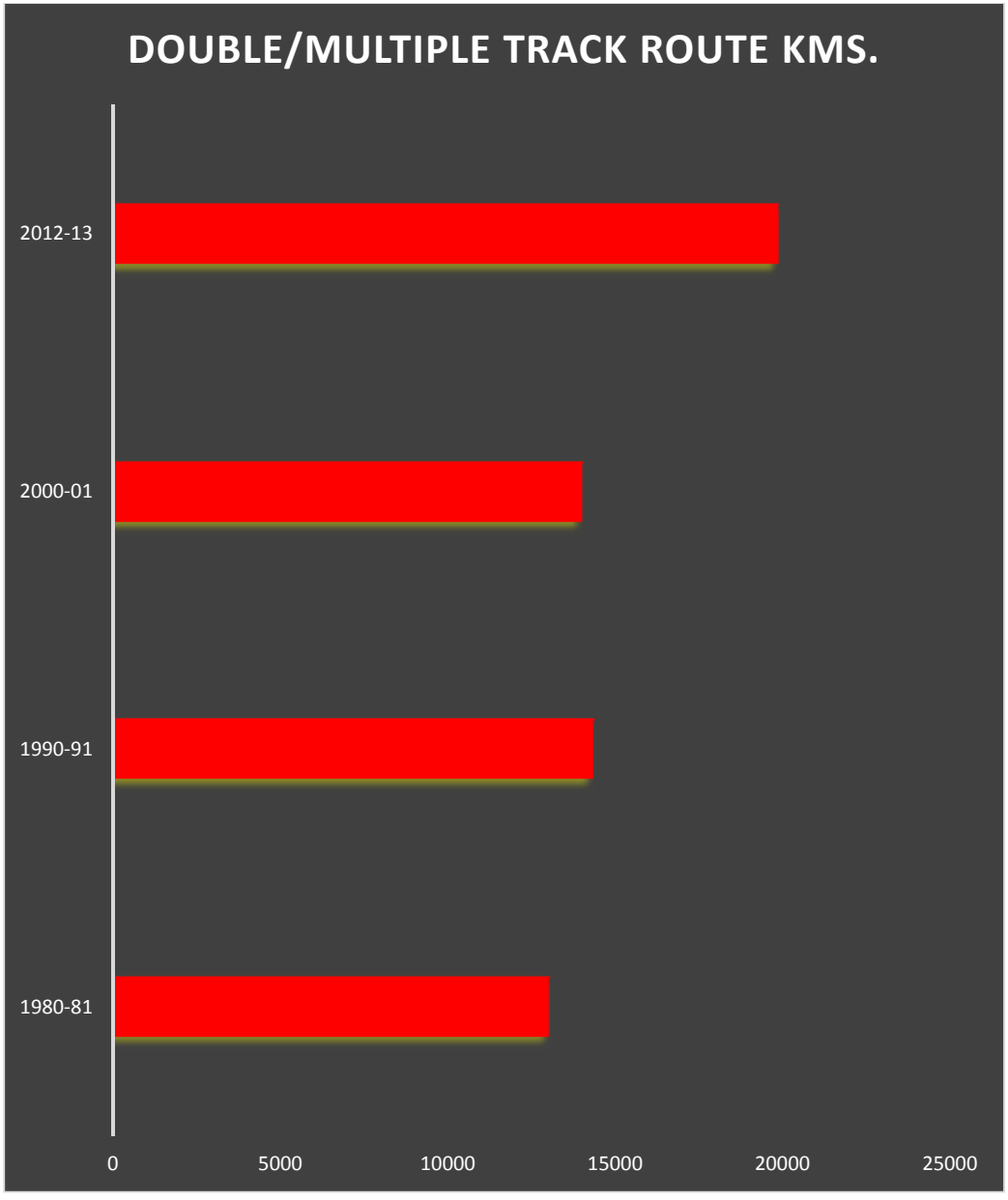
TRACK/ROUTE KILOMETRES

TOTAL ROUTE KILOMETRES

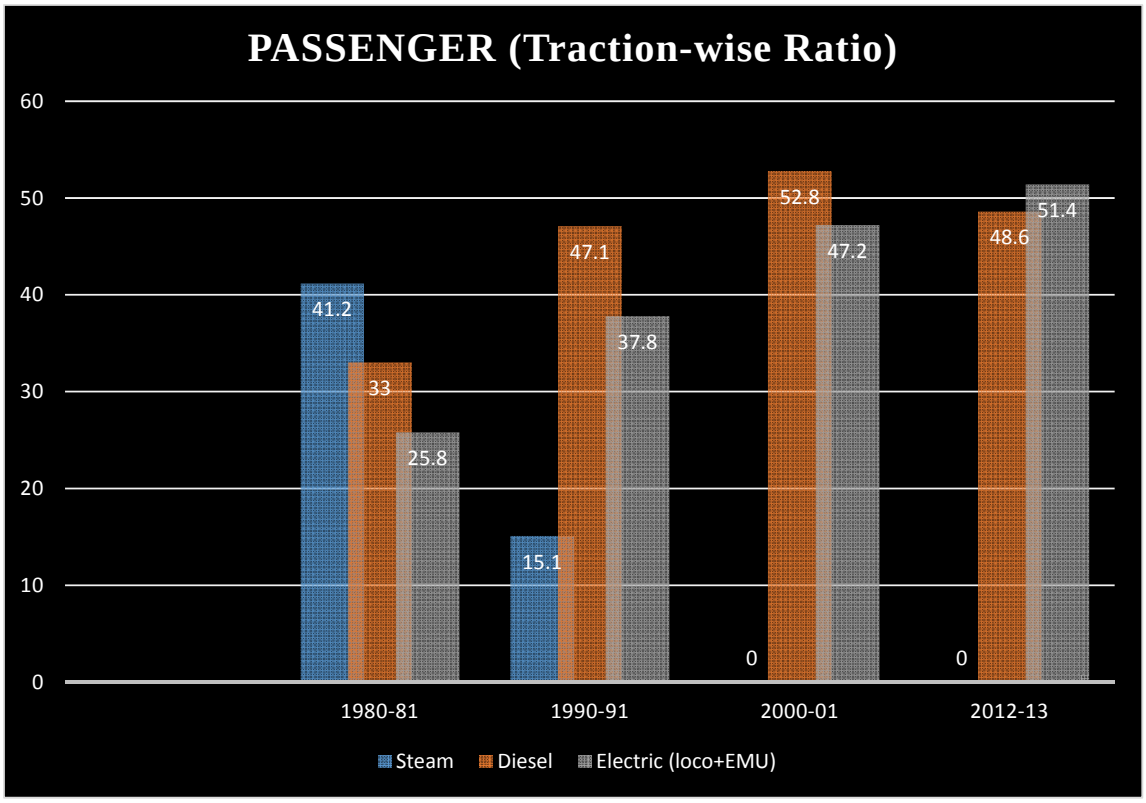
Year	BG	MG	NG	Total
1980-81	31827	25167	4246	61240
1990-91	34880	23419	4068	62367
2000-01	44776	14987	3265	63028
2012-13	**57140**	**5999**	**2297**	**65436**



DOUBLE/MULTIPLE TRACK		
Year	**Route Kms.**	**% of Total Route Kms.**
1980-81	13040	21.3
1990-91	14331	23
2000-01	14010	25.4
2012-13	**19843**	**30.32**

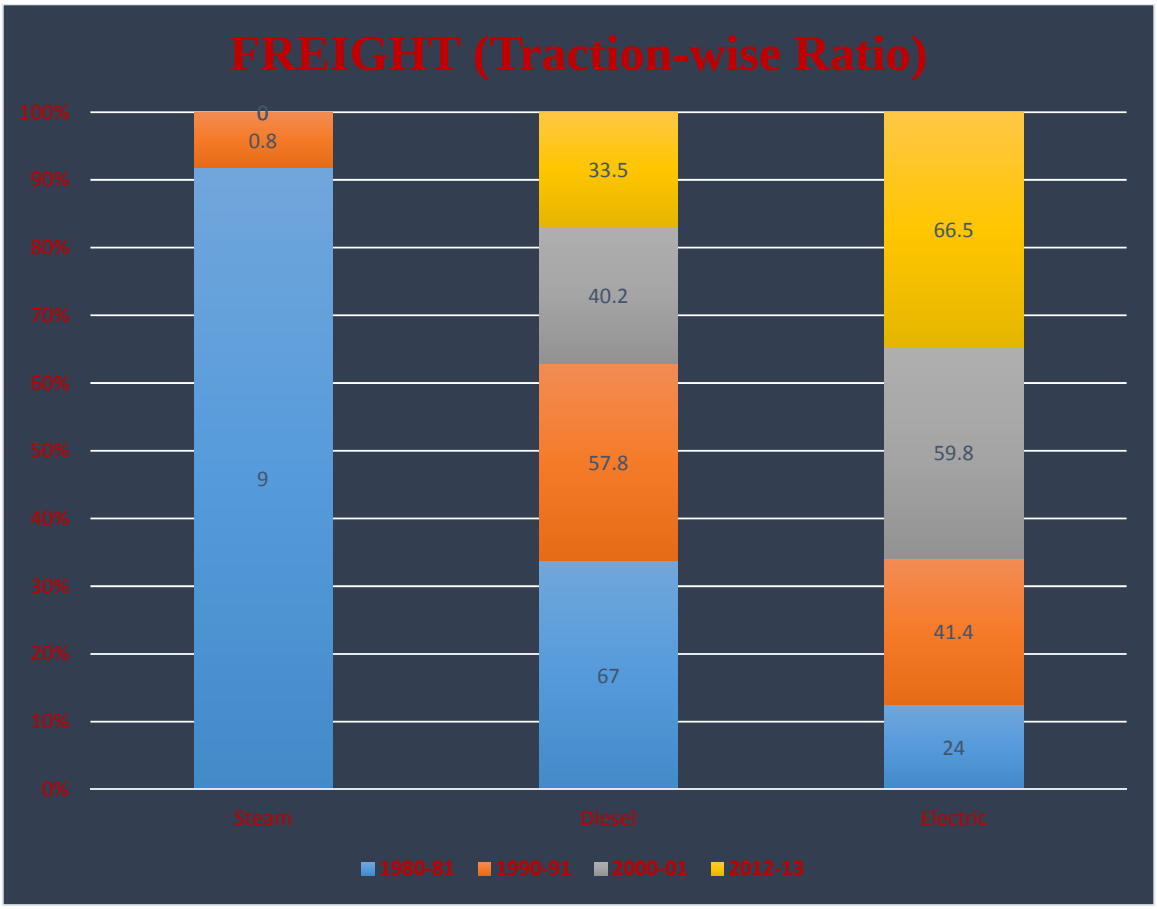


PASSENGER (Traction-wise ratio)					
Year	**Steam**	**Diesel**	**Electric**		**Electric (loco+EMU)**
			Loco	EMU	
1980-81	41.2	33	17.2	8.6	25.8
1990-91	15.1	47.1	29.5	8.3	37.8
2000-01	-	52.8	40.2	7	47.2
2012-13	**-**	**48.6**	**44**	**7.4**	**51.4**

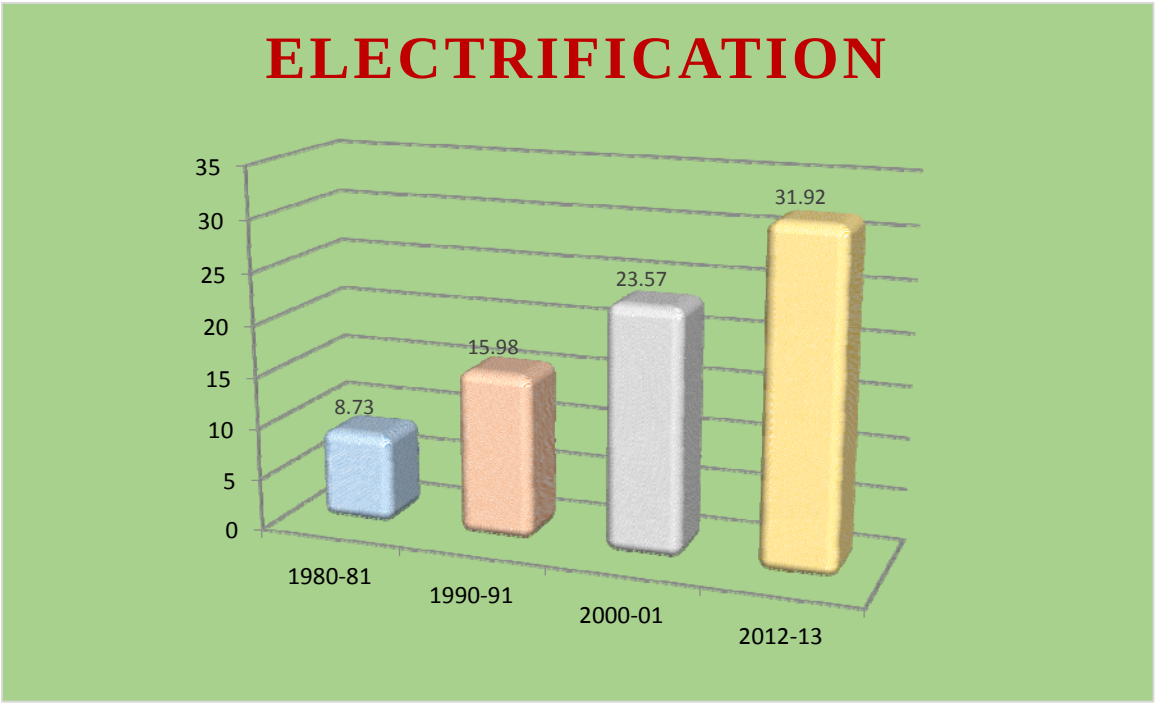


FREIGHT (Traction-wise Ratio)

Year	Steam	Diesel	Electric
1980-81	9	67	24
1990-91	0.8	57.8	41.4
2000-01	-	40.2	59.8
2012-13	**-**	**33.5**	**66.5**

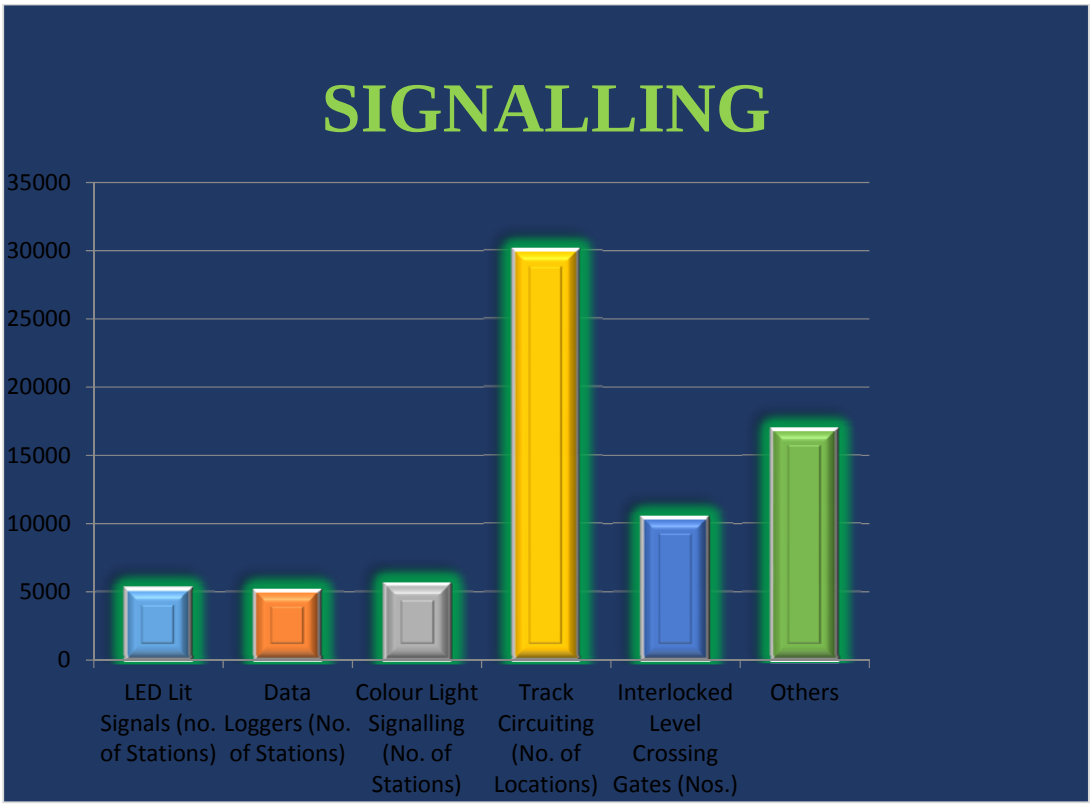


ELECTRIFICATION			
Year	**Total Route Kms.**	**Route Kms. Electrified**	**% age of electrified to total route Kms.**
1980-81	61,240	5,345	8.73
1990-91	62,367	9,968	15.98
2000-01	63,028	14,856	23.57
2012-13	**65,436**	**20,884**	**31.92**



SIGNALLING

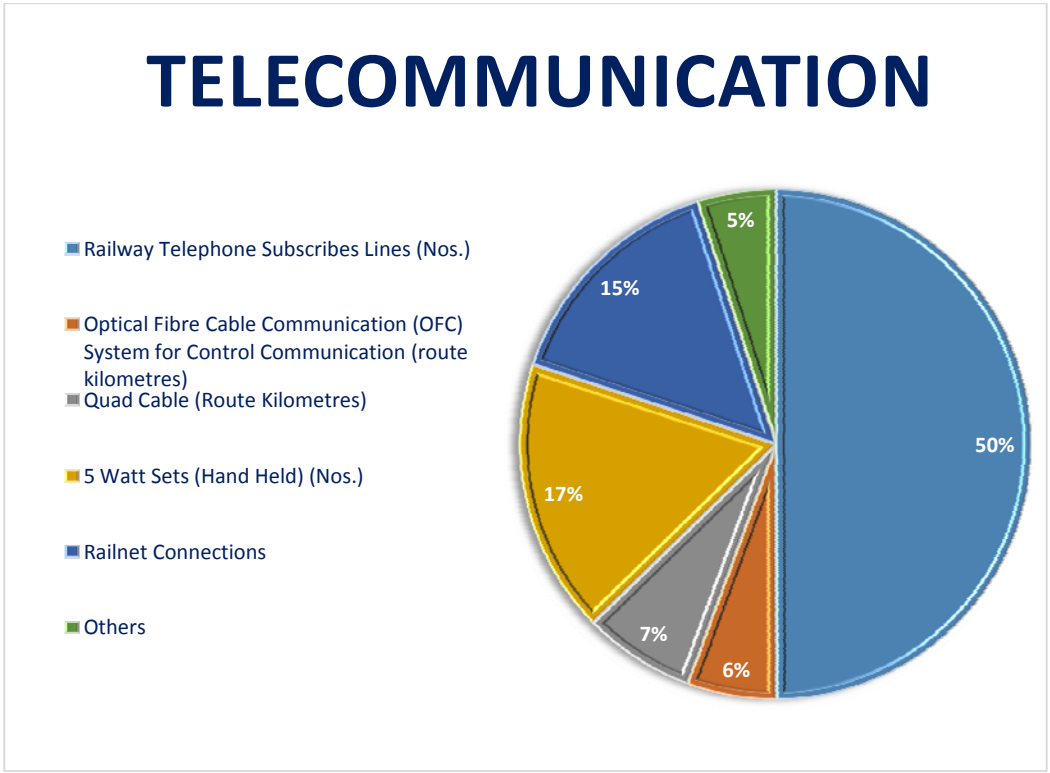
	(IN UNITS)
Installation	**As on 31.3.2013**
LED Lit Signals (no. of Stations)	5131
Data Loggers (No. of Stations)	5020
Colour Light Signalling (No. of Stations)	5517
Track Circuiting (No. of Locations)	29940
Interlocked Level Crossing Gates (Nos.)	10364
Others	16834



TELECOMMUNICATION

(IN UNITS)

Installation	As on 31.3.2013
Railway Telephone Subscribes Lines (Nos.)	370412
Optical Fibre Cable Communication (OFC) System for Control Communication (route kilometres)	42099
Quad Cable (Route Kilometres)	52338
5 Watt Sets (Hand Held) (Nos.)	129019
Railnet Connections	111124
Others	36781

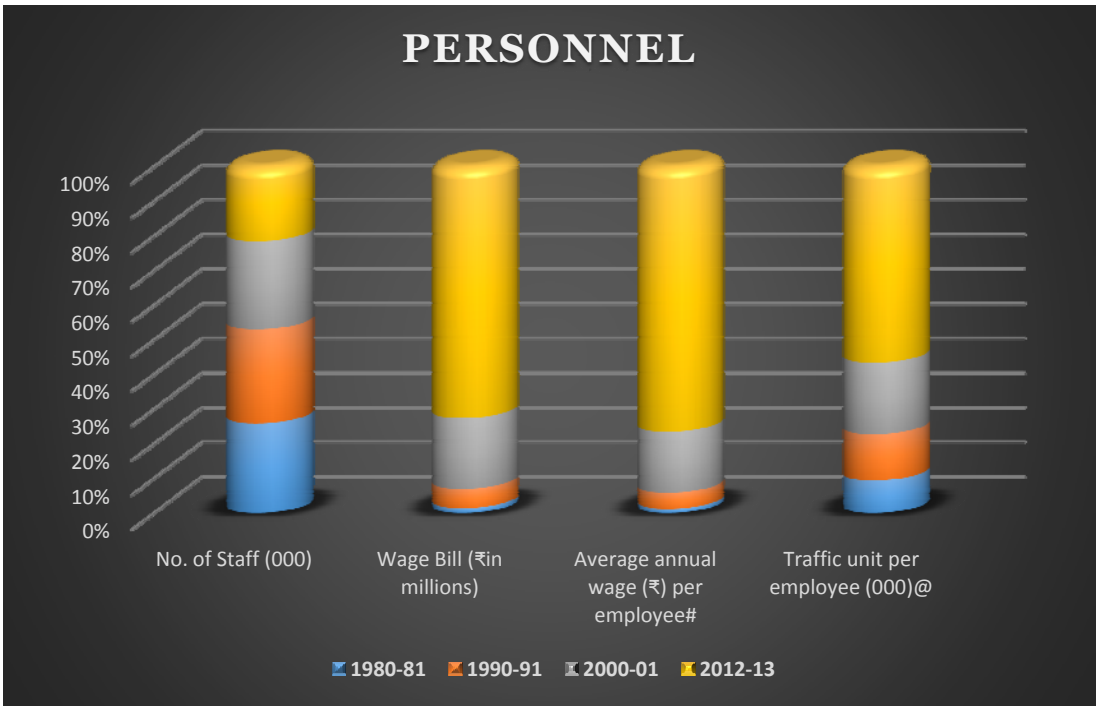


PERSONNEL

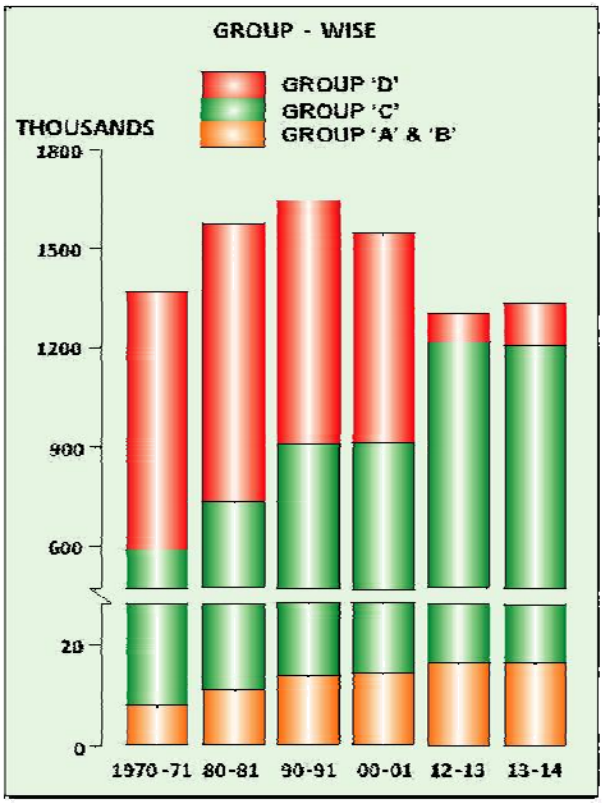
Year	No. of Staff (000)	Wage Bill (Rs.in millions)	Average annual wage (Rs.) per employee#	Traffic unit per employee (000)@
1980-81	1572.2	13167	8435	244
1990-91	1651.8	51663	31864	346
2000-01	1545.3	188414	121281	535
2012-13	**1307.1**	**670046**	**527259**	**1467**

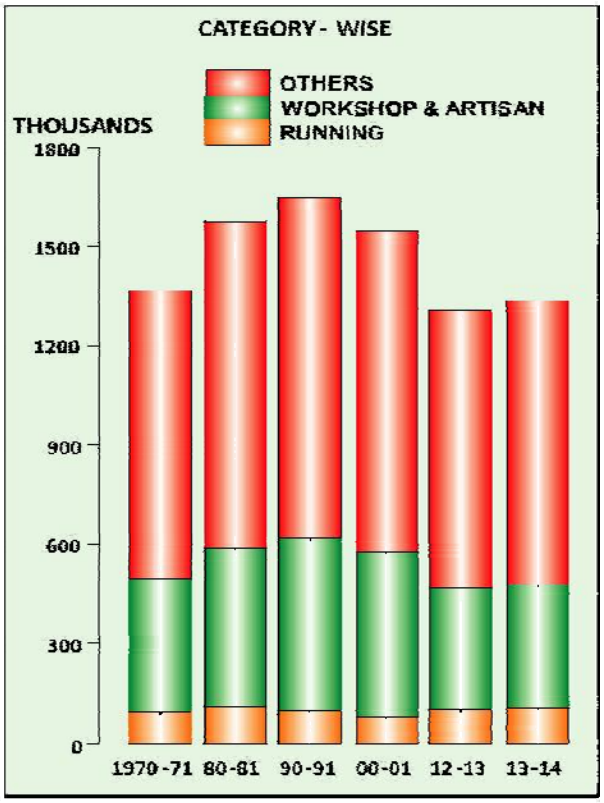
On the basis of average number of staff employed in the year.

@ Traffic unit represents passenger kilometres and net tonne kilometres (Taking into account open line staff only)

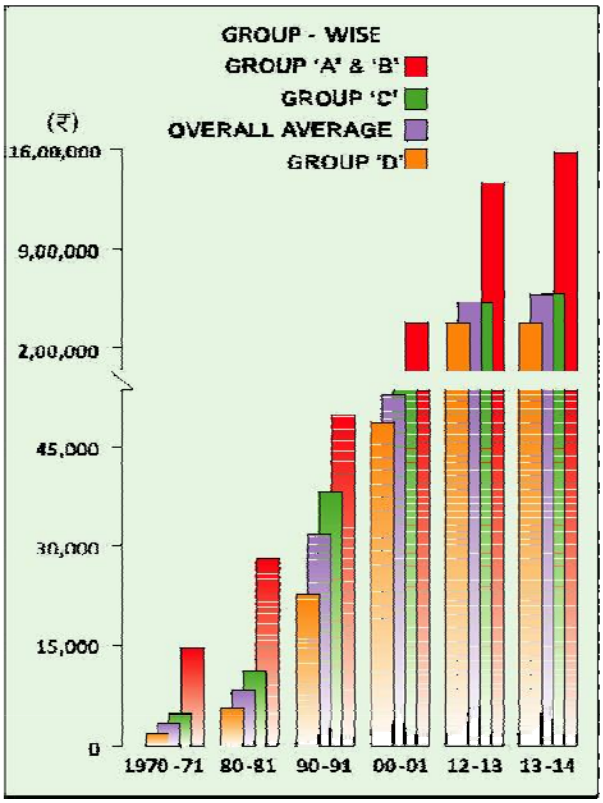


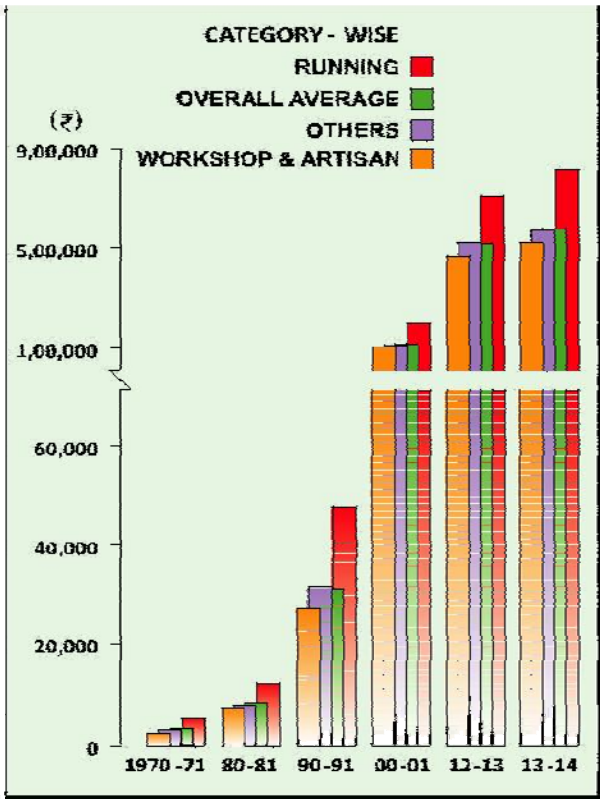
NUMBER OF PERSONNEL





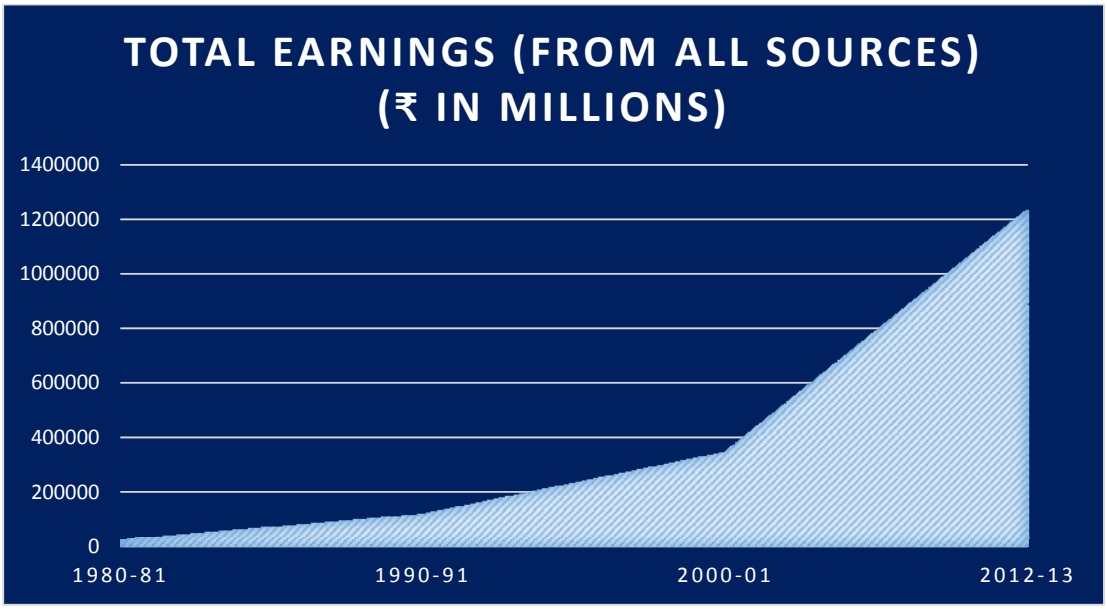
AVERAGE ANNUAL WAGE PER EMPLOYEE



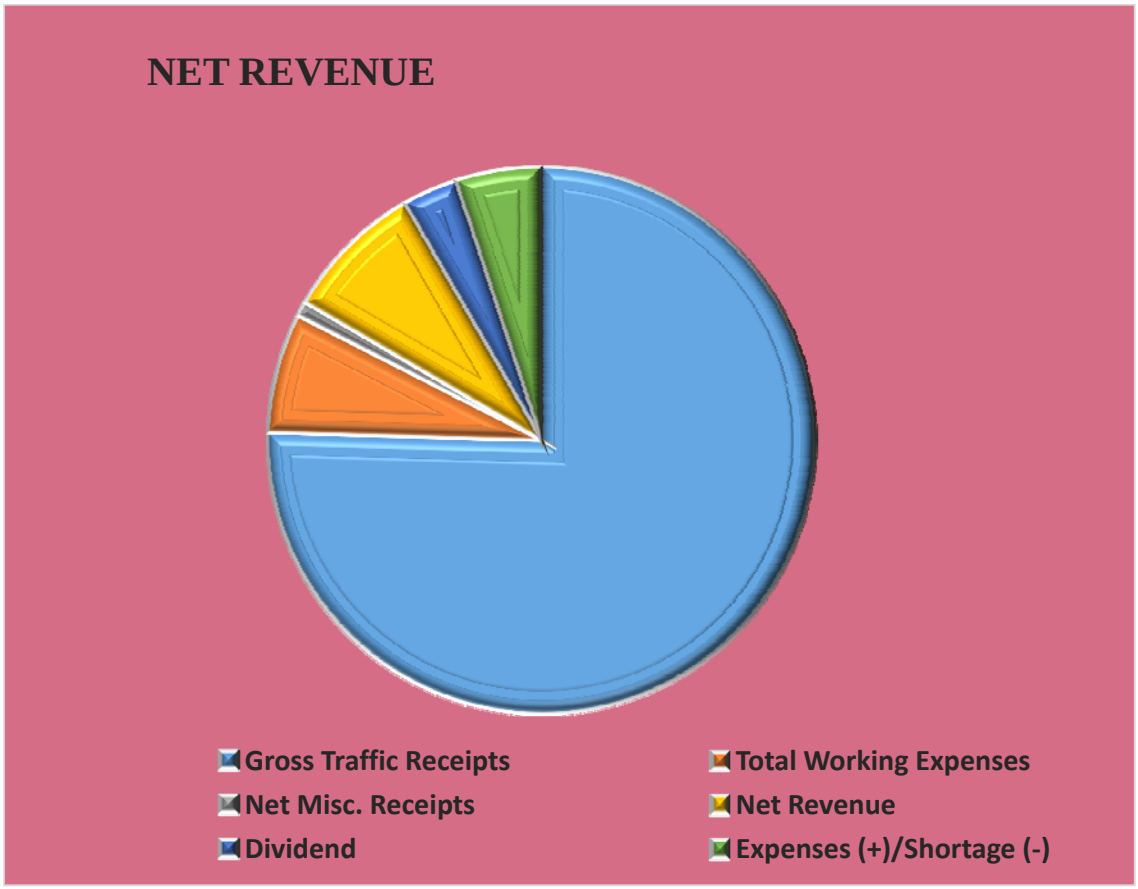


Revenue (Rs. in millions)

Year	Passenger	Parcels and other Coaching	Freight	Misc.	Suspense (Bills Receivable)	Gross Traffic Receipts
1980-81	8274.7	1157.1	16175.2	820.8	(-)187.6	26240.2
1990-91	31475	3363.8	84078.7	2417.6	(-) 370.2	120964.9
2000-01	105150.7	7641.6	233051	7032.5	(-)4071.0	348804.8
2012-13	**313228.4**	**30542.3**	**852625.8**	**42613.6**	**(-)1684.2**	**1237325.9**



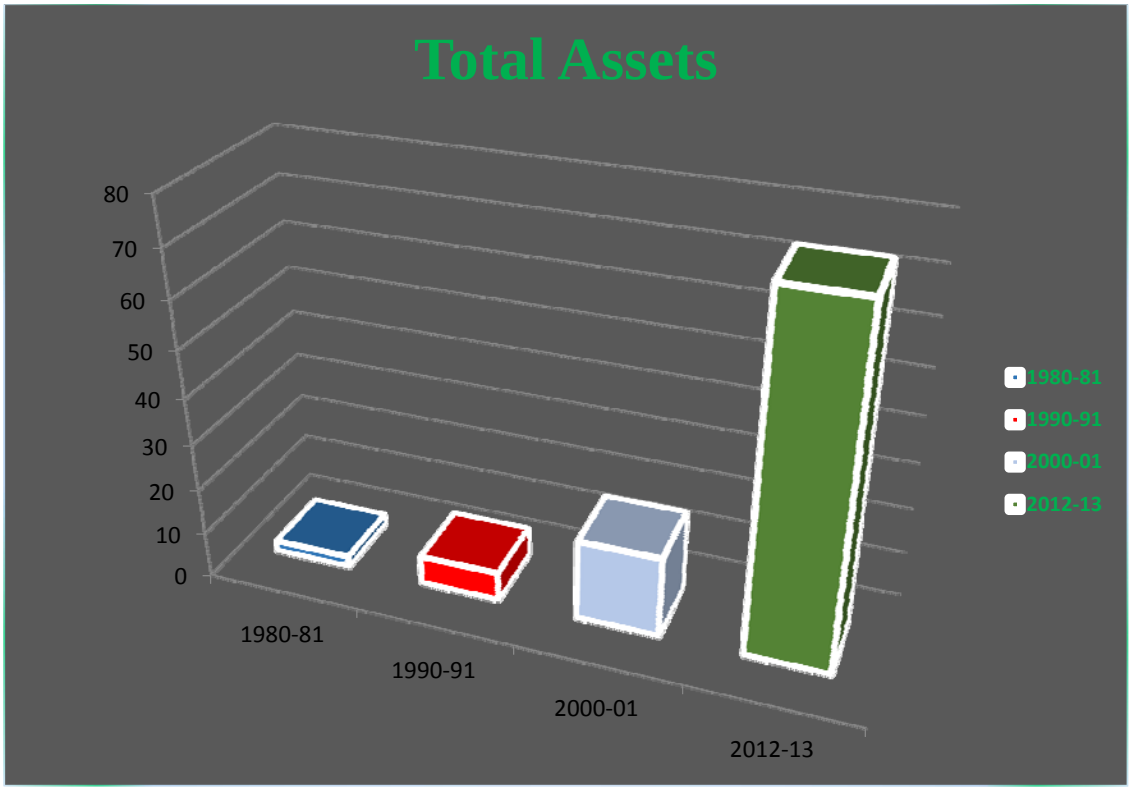
NET REVENUE		
Year	**2012-13**	**%**
Gross Traffic Receipts	1237325.9	75.45
Total Working Expenses	115720.4	7.06
Net Misc. Receipts	14546.4	0.89
Net Revenue	136151.90	8.30
Dividend	53489.4	3.26
Expenses (+)/Shortage (-)	82662.5	5.04
Total	**1639896.5**	



ASSETS

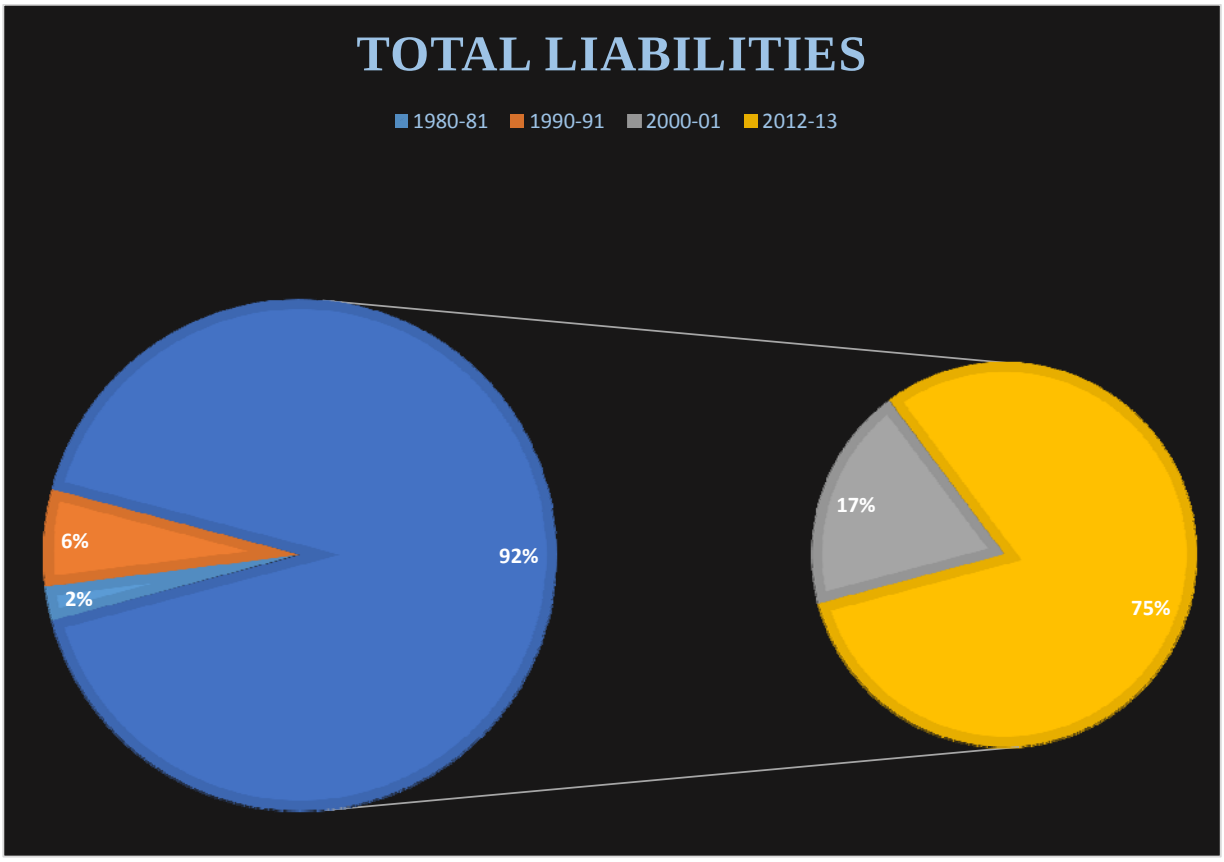
Year	*Fixed Assets#*	*Investment*	*Investment in other under takings*	*Funds with Central Govt.*	*Current Assets*	*Total Assets*	*% of Total Assets*
1980-81	*69.35*	*3.85*	*1.29*	*18.02*	*4.21*	*96.72*	*2.16*
1990-91	*206.25*	*12.19*	*3.57*	*40.94*	*10.85*	*273.8*	*6.11*
2000-01	*603.69*	*22.08*	*7.64*	*115.16*	*29.78*	*778.35*	*17.36*
2012-13	***2691.34***	***41.1***	***161.3***	***393.9***	***45.94***	***3333.58***	*74.37*

#included Land, Building, Rolling Stock, Plant & equipment and Misc. assets.



LIABILITIES

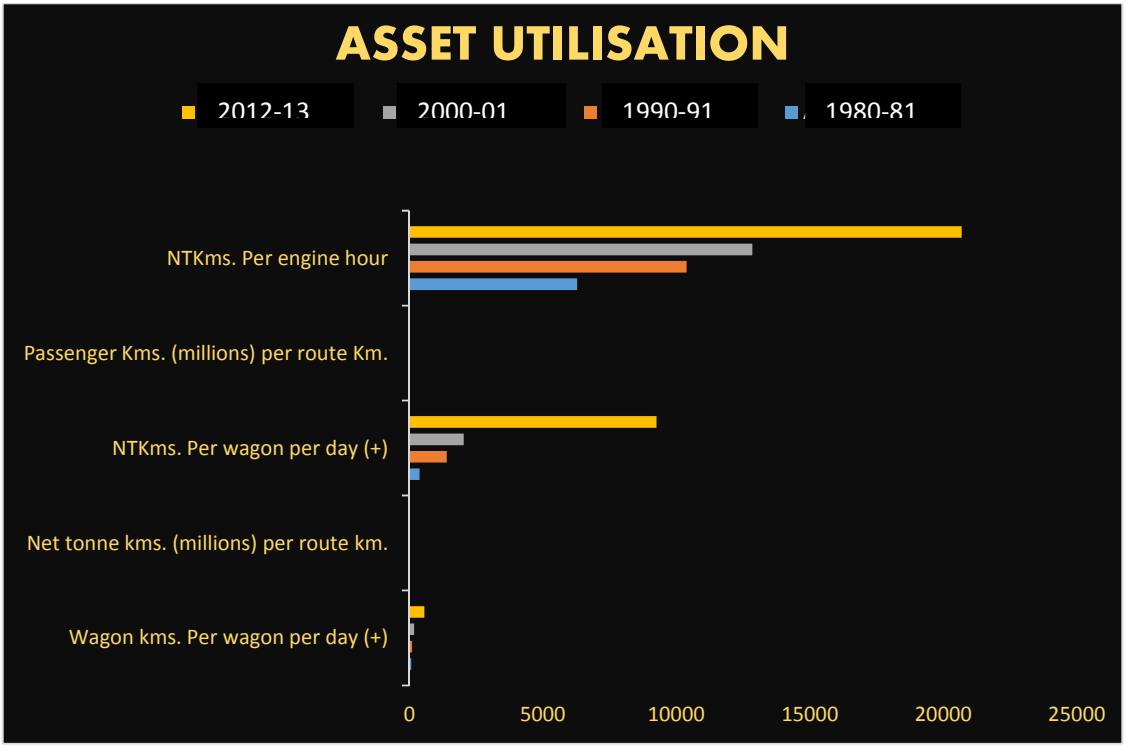
Year	Loan Capital	Investment from funds	Reserves	Deposits from other sources	Misc. Liabilities	Total Liabilities	% of Total Liabilities
1980-81	60.96	13.52	6.49	11.54	4.21	96.72	2.16
1990-91	161.26	60.75	10.47	30.47	10.85	273.8	6.11
2000-01	326.62	306.79	3.59	111.57	29.78	778.35	17.36
2012-13	**535.21**	**1358.54**	**40.73**	**353.17**	**45.94**	**3333.59**	**74.37**



Asset Utilisation

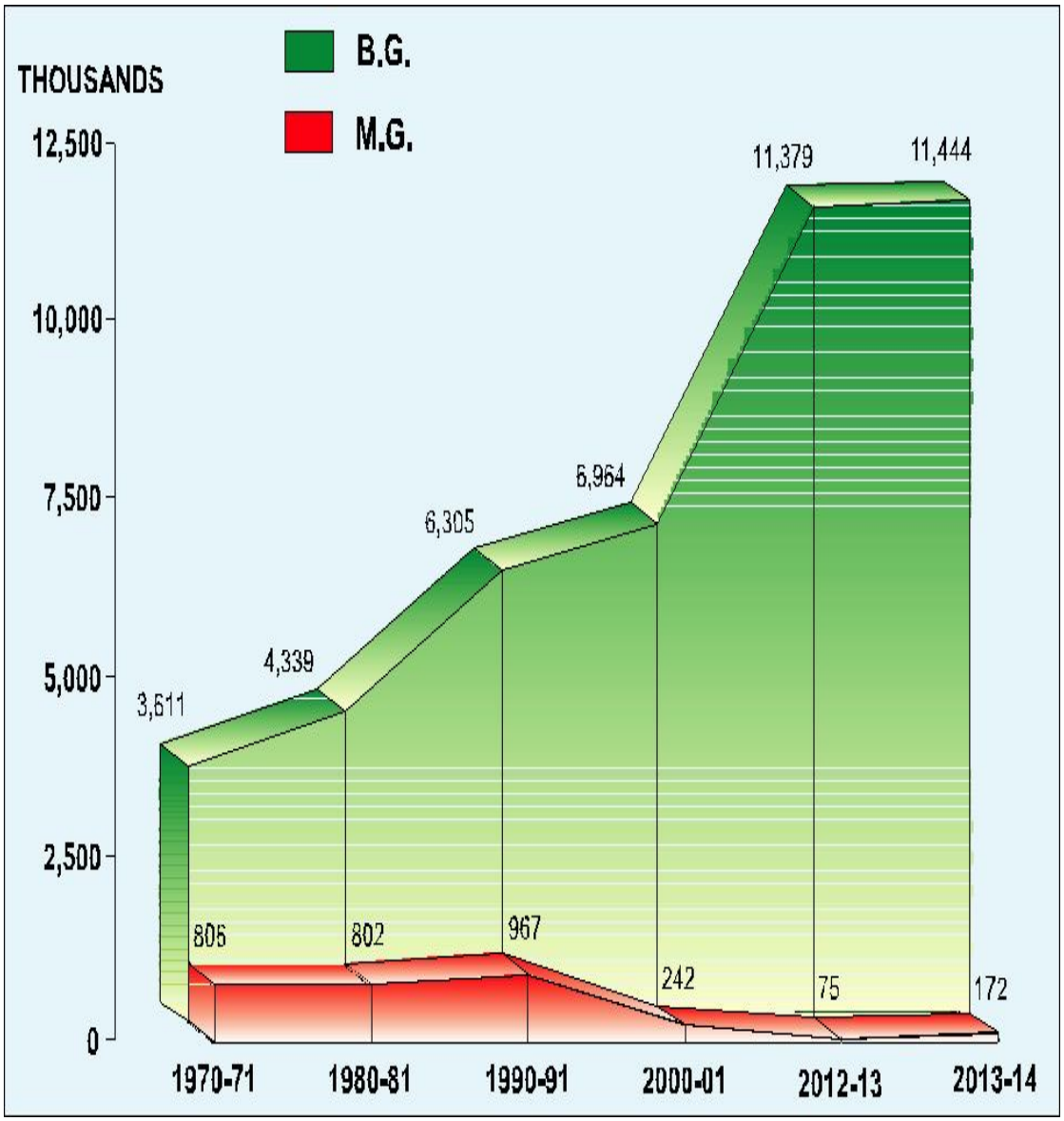
	1980-81	1990-91	2000-01	2012-13
Wagon kms. Per wagon per day (+)	73.4	110.5	179	**564.7**
Net tonne kms. (millions) per route km.	4.34	6.3	6.96	**12.11**
NTKms. Per wagon per day (+)	386	1407	2042	**9267**
Passenger Kms. (millions) per route Km.	5.15	7.12	9.49	**18.9**
NTKms. Per engine hour	6295	10393	12850	**20691**

(+) interms of 8-wheelers

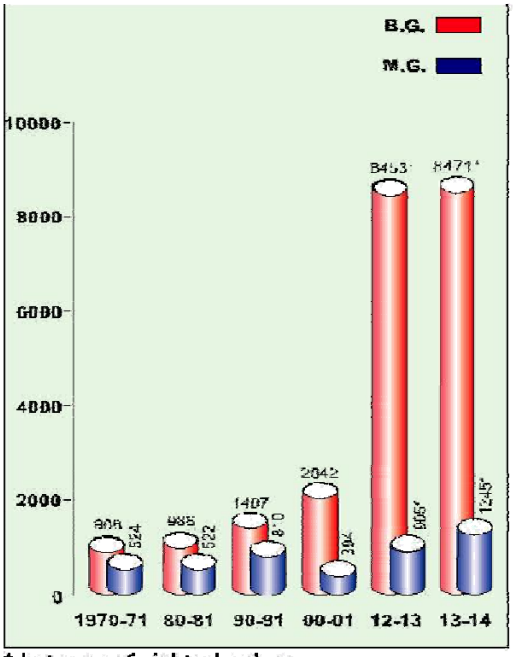


Asset Utilisation

NTKMs PER ANNUM PER ROUTE KM.

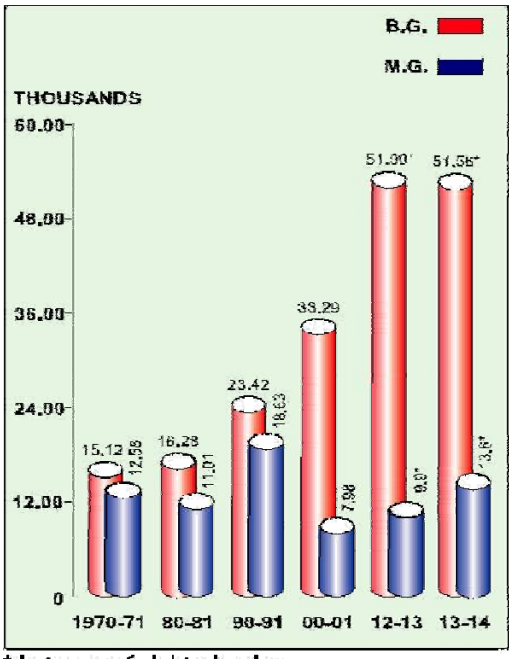


NET TONNE KILOMETRES PER WAGON PER DAY



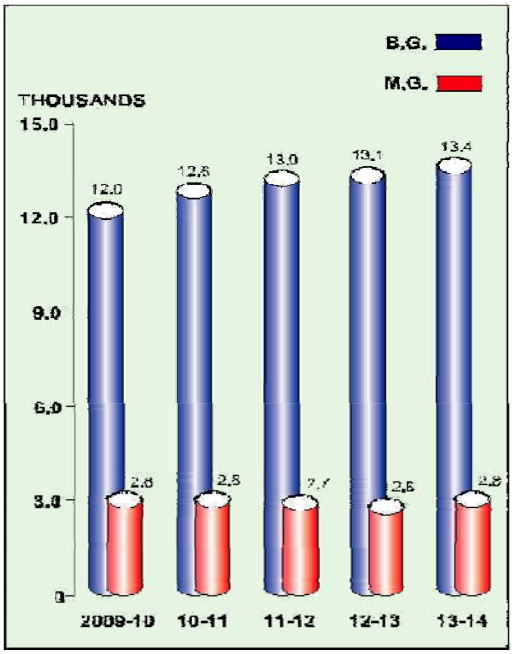
* In terms of eight wheelers

NET TONNE KILOMETRES PER ANNUM PER TONNE OF WAGON CAPACITY

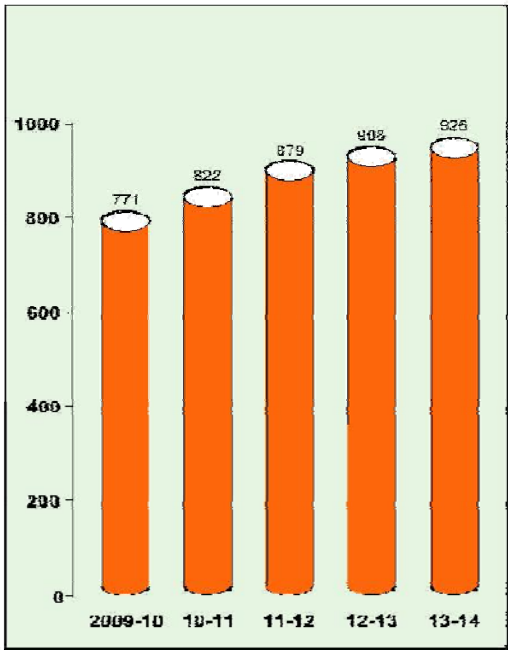


* In terms of eight wheelers

TRAIN KILOMETRES PER RUNNING TRACK KM



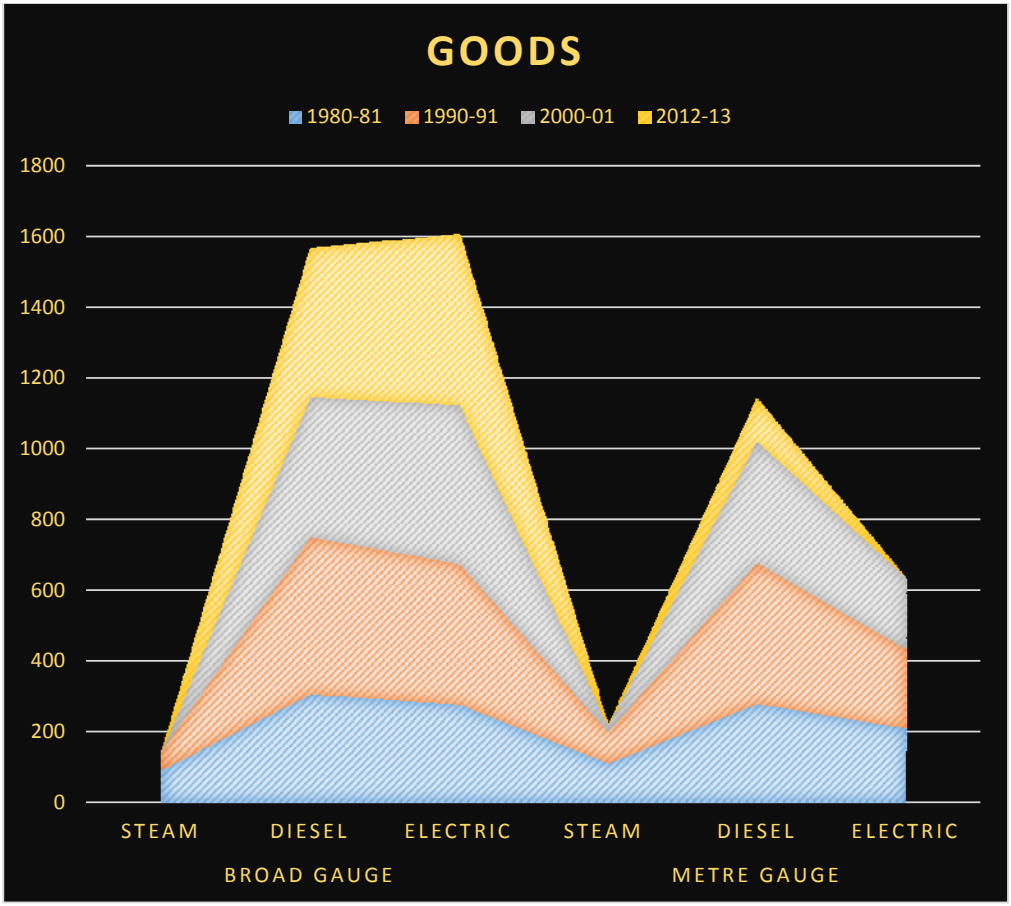
TRAIN KILOMETRES PER EMPLOYEE



Engine Kilometres Per Day Per Engine In Use

Goods

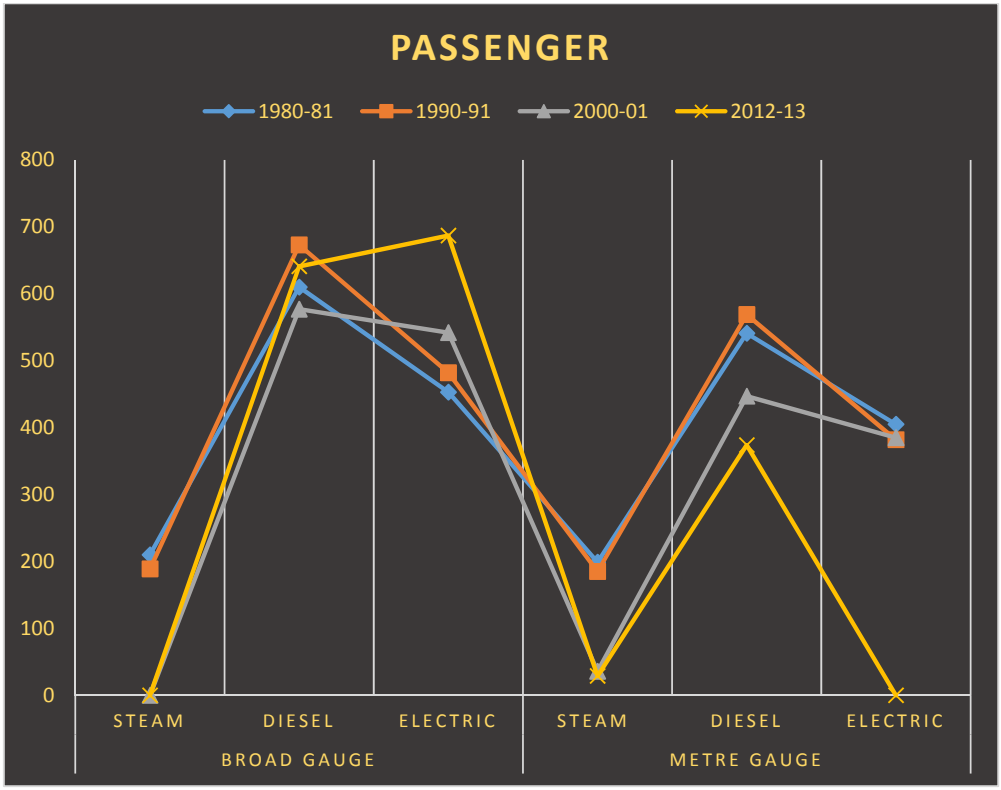
Year	Broad Gauge			Metre Gauge		
	Steam	Diesel	Electric	Steam	Diesel	Electric
1980-81	89	303	274	107	276	206
1990-91	52	445	398	88	399	224
2000-01	-	398	450	18	345	203
2012-13	**-**	**423**	**486**	**-**	**122**	**-**

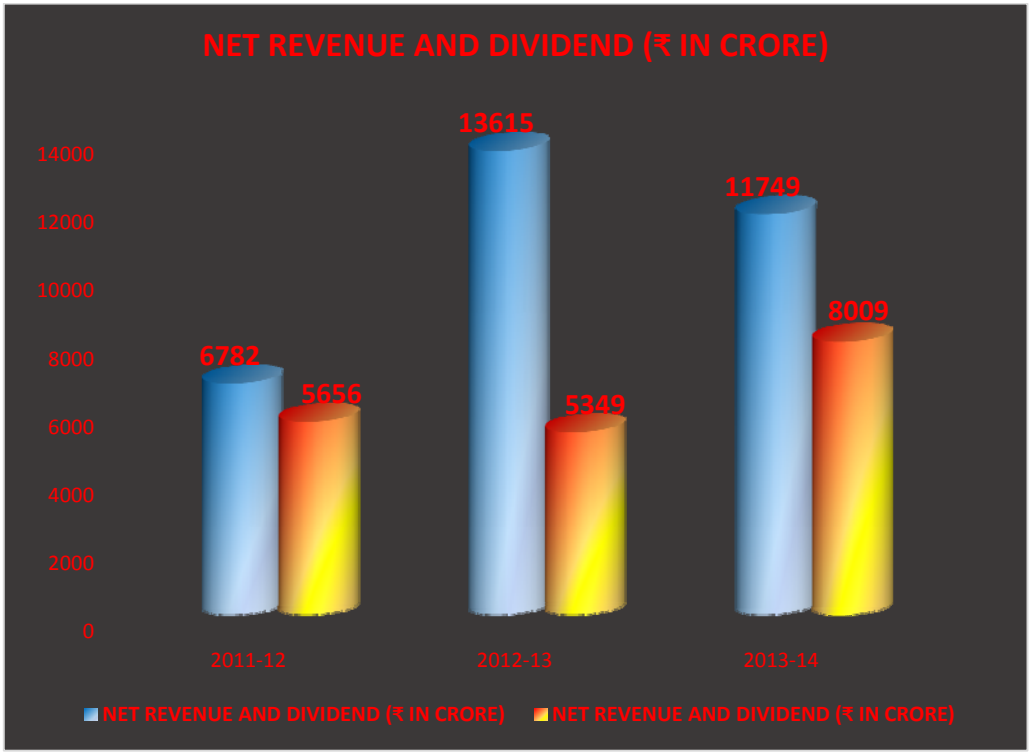


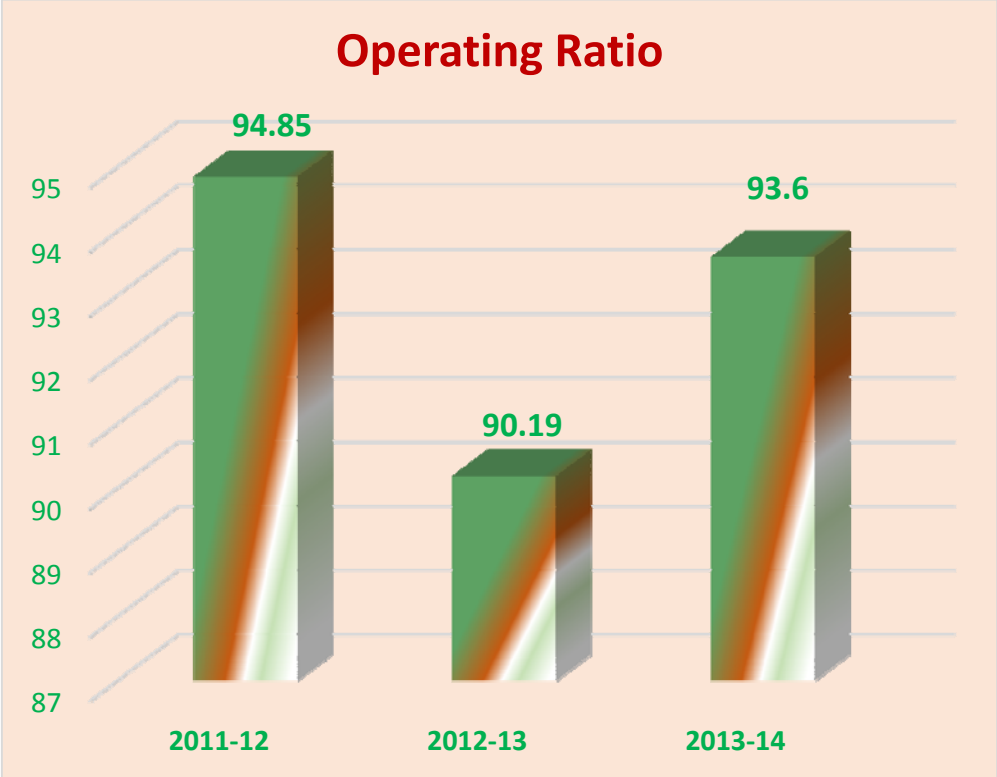
Engine Kilometres Per Day Per Engine In Use

Passenger

Year	Broad Gauge			Metre Gauge		
	Steam	Diesel	Electric	Steam	Diesel	Electric
1980-81	210	610	453	199	541	405
1990-91	189	673	482	185	569	382
2000-01	-	577	542	36	447	385
2012-13	**-**	**641**	**687**	**29**	**374**	**-**

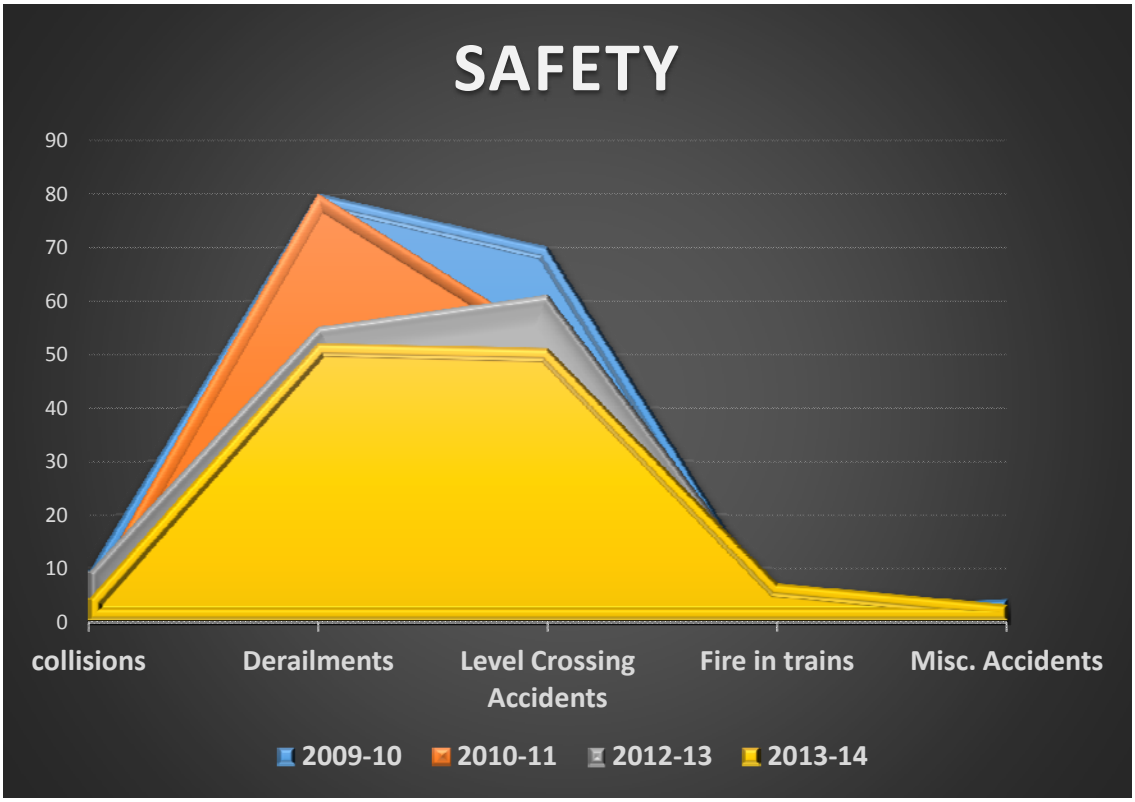


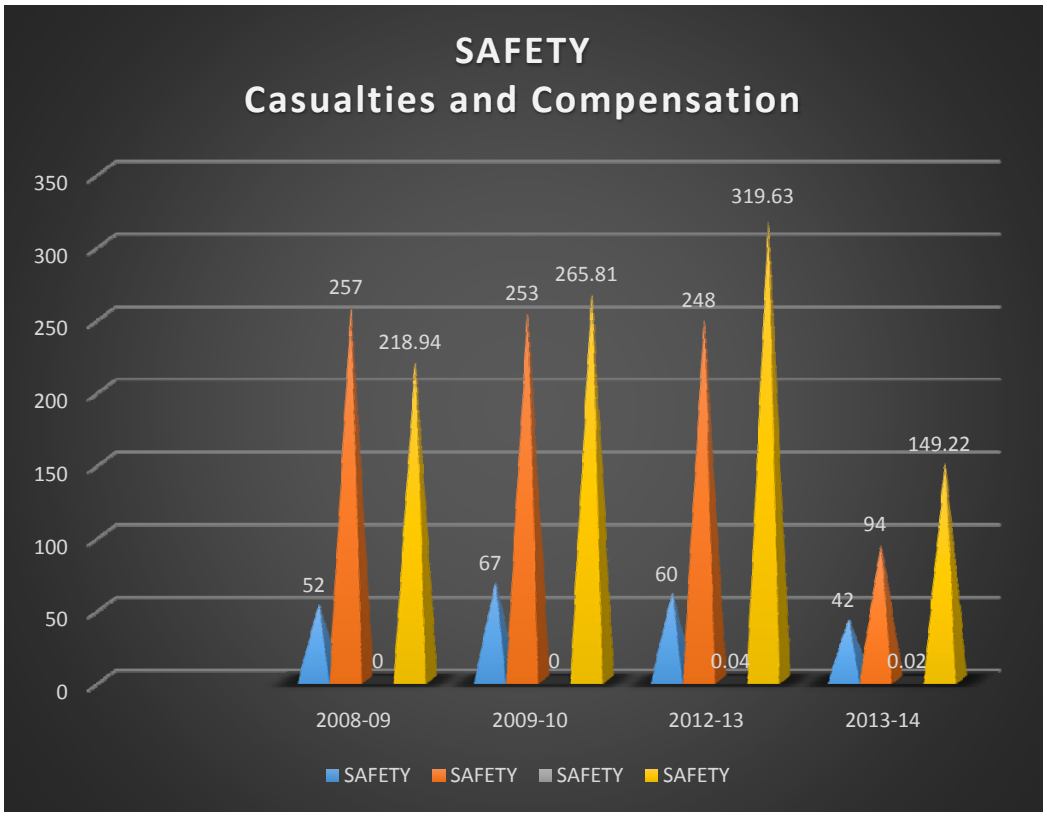

NET REVENUE AND DIVIDEND (₹ IN CRORE)
14000
12000
10000
8000
6000
4000
2000
0
6782
5656
13615
5349
11749
8009
2011-12
2012-13
2013-14
NET REVENUE AND DIVIDEND (₹ IN CRORE)
NET REVENUE AND DIVIDEND (₹ IN CRORE)


Operating Ratio
95
94
93
92
91
90
89
88
87
94.85
90.19
93.6
2011-12
2012-13
2013-14

Safety

Year	collisions	Derailments	Level Crossing Accidents	Fire in trains	Misc. Accidents	Total*	Train accidents per million train Kms.
2009-10	9	80	70	2	4	165	0.17
2010-11	5	80	53	2	1	141	0.14
2012-13	9	55	61	4	2	131	0.12
2013-14	**4**	**52**	**51**	**7**	**3**	**117**	**0.1**

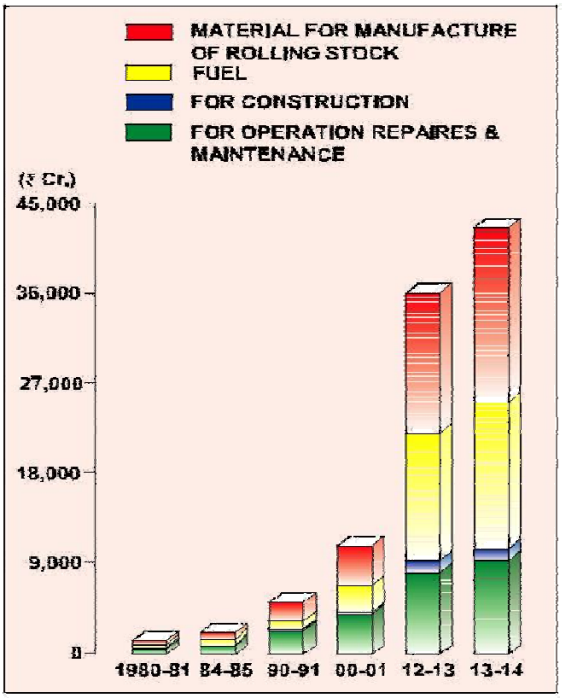


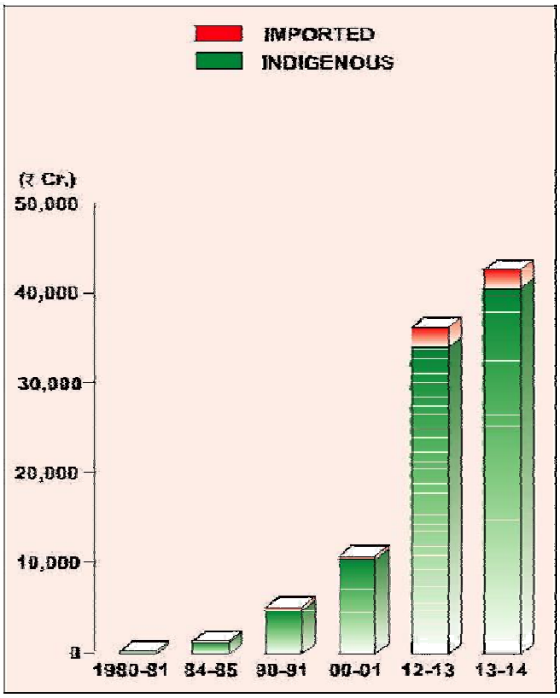

SAFETY
Casualties and Compensation
350
300
250
200
150
100
50
0
52
257
0
218.94
67
253
0
265.81
60
248
0.04
319.63
42
94
0.02
149.22
2008-09
2009-10
2012-13
2013-14
SAFETY
SAFETY
SAFETY
SAFETY


SELF-SUFFICIENCY
Cost of Stores Imported
Loco parts and fittings
Carriage, Wagon and EMU parts and fittings
General stores covering acids, chemicals, drugs, etc.
Other items.

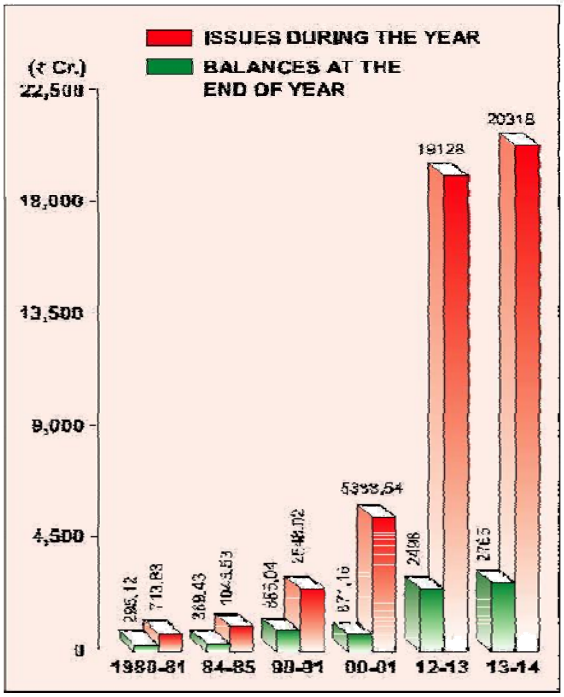
Materials Management

VALUE OF STORES PURCHASED

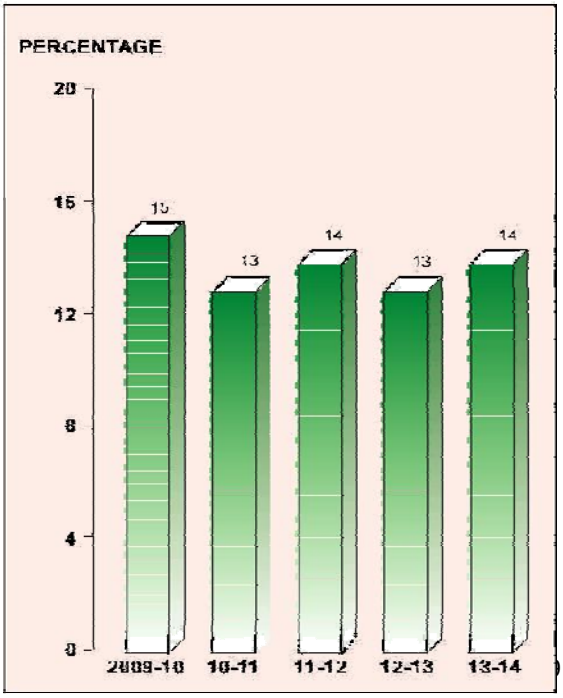


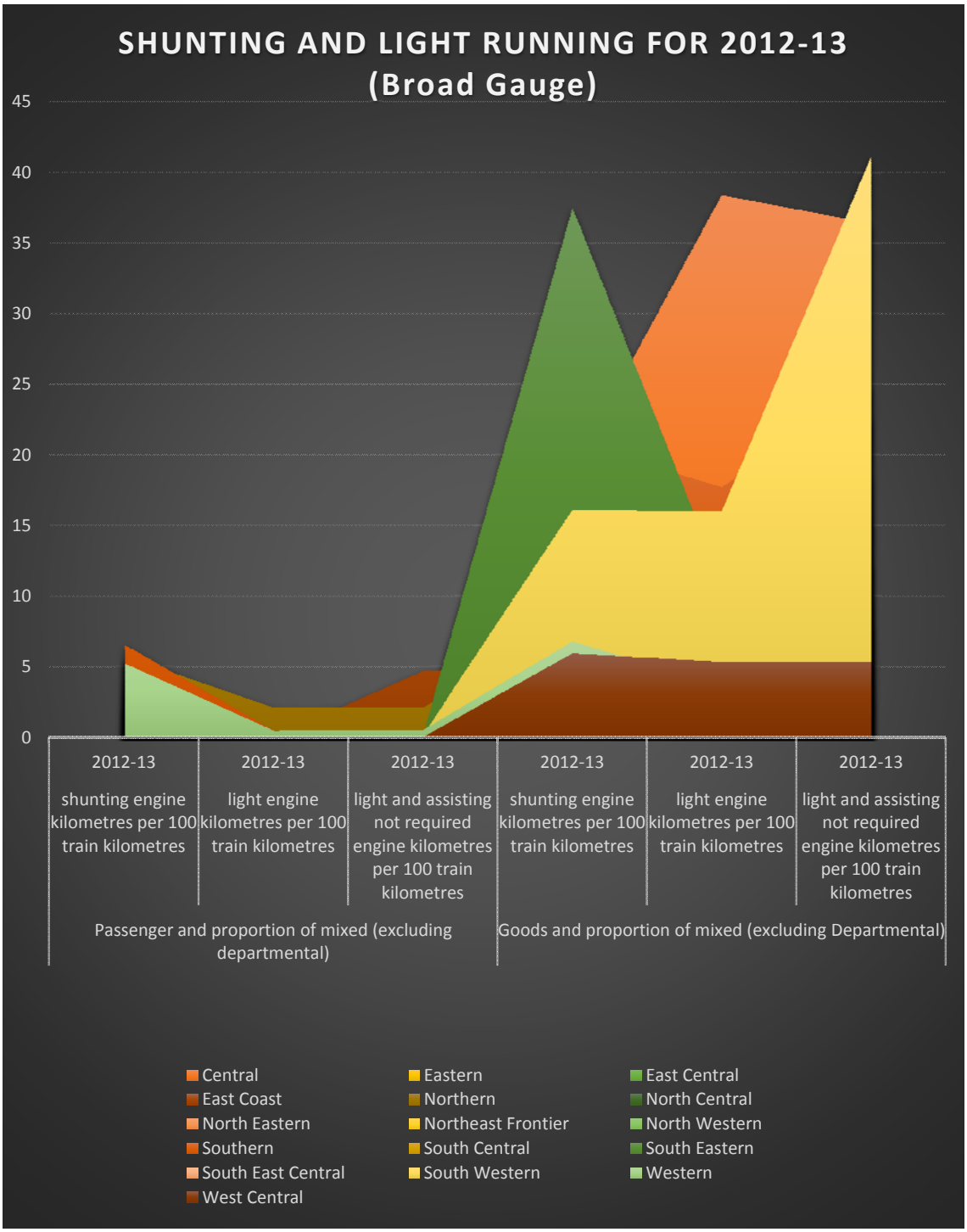


STORES-BALANCES & ISSUES
(TOTAL WITHOUT FUEL)
(ZONAL RAILWAYS AND PRODUCTION UNITS)



INVENTORY TURNOVER RATIO
(EXCLUDING FUEL)




SHUNTING AND LIGHT RUNNING FOR 2012-13
(Broad Gauge)
45
40
35
30
25
20
15
10
5
0
2012-13
shunting engine kilometres per 100 train kilometres
2012-13
light engine kilometres per 100 train kilometres
2012-13
light and assisting not required engine kilometres per 100 train kilometres
2012-13
shunting engine kilometres per 100 train kilometres
2012-13
light engine kilometres per 100 train kilometres
2012-13
light and assisting not required engine kilometres per 100 train kilometres
Passenger and proportion of mixed (excluding departmental)
Goods and proportion of mixed (excluding Departmental)
Central
Eastern
East Central
East Coast
Northern
North Central
North Eastern
Northeast Frontier
North Western
Southern
South Central
South Eastern
South East Central
South Western
Western
West Central

Engine Usage for 2012-13

Railway Broad Gauge	Average no. of Engines				Average Number	
	Athorised stock	On Line	Under or awaiting repairs	Available for use	Passenger Service	Goods Service
Central						
Diesel Electric	306	283	27	242	74	114
Electric D.C	79	48	11	27	25	2
Electric A.C	440	455	22	428	154	212
Eastern						
Diesel Electric	339	337	28	297	110	35
Diesel Hyd. & Mech.	7	5	3	2	-	-
Electric	231	230	24	200	60	113
East Central						
Diesel Electric	247	244	23	212	89	100
Electric	349	349	0	321	87	262
East Coast						
Diesel Electric	199	199	12	173	48	100
Electric	277	277	15	251	55	175
Northern						
Diesel Electric	503	494	45	442	263	167
Diesel Hyd. & Mech.	73	69	9	54	-	-
Electric	339	339	24	314	92	89
North Central						
Diesel Electric	120	118	2	89	28	66
Electric	382	382	11	342	100	224
North Eastern						
Diesel Electric	195	186	18	166	60	42
Northeast Frontier						
Diesel Electric	310	307	22	274	147	73
North Western						
Diesel Electric	193	195	17	178	90	94
Southern						
Diesel Electric	307	310	27	266	102	54
Diesel Hyd. & Mech.	68	16	1	15	-	-
Electric	384	376	31	339	108	79
South Central						
Diesel Electric	491	489	29	449	126	135
Electric	493	493	31	447	75	219
South Eastern						
Diesel Electric	299	299	35	264	37	7

Electric	467	465	34	416	93	288
South Wast Central						
Diesel Electric	125	125	21	104	18	64
Electric	184	184	14	160	42	278
South Western						
Diesel Electric	322	305	17	265	81	162
Electric	-	-	-	-	17	9
Western						
Diesel Electric	241	350	29	310	81	95
Diesel Hyd. & Mech.	96	29	4	24	-	-
Electric	243	293	17	267	80	139
West Central						
Diesel Electric	357	358	34	292	-	124
Electric	533	533	30	494	-	403

Engine Usage for 2012-13 (contd.)

Railway	In Use Daily on				Engine Kilometres per Day				Net Tonne Kilometres		
Broad Gauge	Departmental Service	Shunting including siding	Total	Spare	Per Passenger Engine in use	Per goods engine in use	per engine in use	per engine on line	per goods locomotive day on time	per goods locomotive day in use	hours worked per day per engine available for use
Central											
Diesel Electric	2	65	255	18	762	459	508	391	1,54,753	1,98,134	25.2
Electric D.C	–	–	27	–	228	235	228	127	1,77,497	3,10,741	24
Electric A.C	4	16	386	–	623	593	592	544	5,35,109	5,74,700	24
Eastern											
Diesel Electric	4	130	279	7	405	474	281	292	1,25,872	1,41,554	24.2
Diesel Hyd. & Mech.	–	2	2	–	–	–	98	28	–	–	24
Electric	–	15	188	–	462	169	262	463	2,85,012	2,40,833	28.9
East Central											
Diesel Electric	–	–	189	–	553	459	421	326	2,60,676	3,36,273	22
Electric	–	–	349	–	553	488	476	338	3,62,625	3,93,246	15

East Coast											
Diesel Electric	5	66	219	–	592	564	573	368	3,53,274	3,47,218	20.6
Electric	2	126	358	–	473	457	461	363	3,08,117	3,07,872	22.6
Northern											
Diesel Electric	2	52	484	–	689	495	579	439	7,52,382	8,27,573	24.3
Diesel Hyd. & Mech.	6	47	53	–	–	–	88	69	–	–	7.22
Electric	1	1	183	–	367	545	452	368	5,02,553	5,57,549	17.6
North Central											
Diesel Electric	1	17	112	–	1068	209	555	532	4,07,210	4,20,079	24
Electric	–	–	324	–	1070	464	687	670	10,53,735	10,77,422	18
North Eastern											
Diesel Electric	–	10	112	–	831	493	644	348	4,41,791	4,77,612	14.8
Northeast Frontier											
Diesel Electric	–	18	238	–	364	363	358	333	3,58,866	4,64,607	15.5

North Western											
Diesel Electric	1	19	204	–	777	567	632	525	8,27,849	8,45,038	21.4
Southern											
Diesel Electric	13	52	221	–	621	360	459	391	1,21,086	1,80,157	18.2
Diesel Hyd. & Mech.	–	13	13	–	–	–	89	75	13	19	7.7
Electric	–	–	187	–	626	375	524	415	2,23,531	4,75,613	15.2
South Central											
Diesel Electric	21	37	319	4	688	607	594	397	4,68,809	5,01,962	18.1
Electric	3	80	377	34	1096	527	596	468	3,90,305	4,81,816	20
South Eastern											
Diesel Electric	6	87	137	–	202	354	196	248	18,323	41,051	15.3
Electric	2	87	470	6	542	364	381	335	3,86,688	3,66,310	16.5
South Wast Central											

Diesel Electric	3	23	108	–	366	167	160	253	1,35,381	1,52,494	17.6
Electric South Western	3	72	396	–	1002	353	353	372	5,25,428	4,91,407	15.3
Diesel Electric	1	17	261	3	666	274	405	347	2,49,959	2,62,194	14.8
Electric Western	–	–	26	–	364	258	329	–	–	2,09,297	–
Diesel Electric	1	41	218	7	578	433	456	386	4,16,827	4,72,302	18.1
Diesel Hyd. & Mech.	–	24	24	–	–	–	240	199	–	–	20
Electric West Central	1	5	225	36	803	607	447	447	3,91,126	4,43,969	16.2
Diesel Electric	-	55	268	24	1086	429	532	398	2,92,729	3,48,886	19.6
Electric	-	1	493	1	940	603	609	562	4,70,101	5,05,169	22.2

Average Load Per Train (Excluding Departmental Trains)

Railways Broad Gauge	Passenger Trains No. of vehicles (in terms of 4-wheelers)	Passenger including proportion or mixed Gross Weight including weight of engine tonnes	Average No Pass carried per train	Loaded wagons per train (in terms of 8 wheelers)	Total Wagons per train (in terms of 8 wheelers)	Net or freight weight Tonnes	Gross weight including weight of engine Tonnes	Gross weight excluding weight of engine Tonnes
Central								
Diesel Electric	31	1023		31	46	1183	2583	2376
Electric D.C	36	1166		30	45	1125	2439	2315
Electric A.C.	35	1173		36	49	1408	2810	2637
All traction	33	1115	1941	35	48	1352	2753	2572
Eastern								
Diesel Electric	27	992		32	49	1732	3108	2972
Electric	33	1192		35	50	1907	3324	3184
All traction	29	1069	885	34	50	1829	3228	3028
East Central								
Diesel Electric	15	1035		28	45	2010	2966	2826
Electric	23	850		30	53	1639	3304	3164
All traction	19	946	1826	30	51	1733	3219	3078
East Coast								
Diesel Electric	28	1029		39	52	2515	3944	3763
Electric	36	1280		33	54	2232	3714	3575
All traction	32	1160	938	35	53	2335	3797	3605
Northern								
Diesel Electric	31	1146		26	43	1200	2069	2192

Diesel Hyd. & Mech.		31						
Electric	37	1354		28	44	1307	2206	2325
All traction	32	1179	1296	27	43	1240	2120	2241
North Central								
Diesel Electric	36	1082		31	48	2007	3490	3303
Electric	43	1344		38	58	2321	3931	3812
All traction	42	1286	2525	36	55	2284	3879	3753
North Eastern								
Diesel Electric	33	1150		26	44	1864	3147	3032
All traction	33	1150	2350	26	44	1864	3147	3032
Northeast frontier								
Diesel Electric	32	976		31	53	1433	2673	2558
All traction	32	976	857	31	53	1433	2673	2558
North Western								
Diesel Electric	31	1011		33	49	1856	3149	3026
All traction	31	1011	1255	33	49	1856	3149	3026
Southern								
Diesel Electric	34	1004		24	44	1464	2800	2598
Diesel Hyd. & Mech.				4	5	97	222	163
Electric	40	1159		29	48	1690	3055	2889
All traction	37	1084	1578	27	46	1619	2976	2798
South Central								
Diesel Electric	32	1061		33	52	1372	2862	2671
Electric	38	1283		32	47	1247	2565	2405

All traction	35	1172	1579	32	49	1293	2674	2503
South Wastern								
Diesel Electric	26	1254		32	51	2024	3310	3152
Electric	33	1104		32	52	2032	3370	3193
All traction	32	1223	1429	32	52	2032	3369	3192
South East Central								
Diesel Electric	21	776		26	44	1560	2613	2693
Electric	34	1155		32	53	1896	3143	3135
All traction	32	106	1425	32	52	1869	3101	3100
South Western								
Diesel Electric	33	930		32	50	2420	3479	3220
Electric	37	1022		27	45	1395	2718	2512
All traction	33	940	106	32	50	2357	3431	3176
Western								
Diesel Electric	31	1058		32	49	1460	2689	2573
Electric	39	1289		35	49	1690	2950	2816
All traction	36	1192	1907	34	49	1611	2861	2733
West Central								
Diesel Electric	39	1171		31	52	1666	3586	3439
Electric	40	1258		36	48	1864	3835	3659
All traction	40	1297	1789	35	49	1823	3613	3613
Total Average-Broad Gauge								
Diesel Electric	31	1066		31	48	1635	2906	2747
Total Diesel	31	1066		31	48	1635	2906	2747
Electric	38	1215		33	50	1785	3199	3039
All Traction	34	1133	1626	32	50	1732	3095	2935

VEHICLES AND WAGONS-NUMBER AND THEIR USAGE FOR 2012-13 (BG)

Railway	Coaching Stock							
	Average authorised stock (in Units)**		Average Number on line				Vehicle Kilometres per vehicle day	
			Passenger Carriages		Other Coaching Vehicles		In Terms of 4-Wheelers	
	Passenger Carriages	Other Coaching Vehicles	In Units	In terms of 4-Wheelers	In Units	In Terms of 4-Wheelers	Passenger Vehicles	Other Coaching Vehicles
Central	2908	554	2528	7095	749	1498	668	311
Eastern	3719	216	3725	7434	216	431	562	578
East Central	3171	124	2978	5957	125	249	320	339
Fast Coast	2019	180	2019	4038	180	361	475	356
Northern	5315	378	5239	10478	266	562	635	73
North Central	1101	74	1101	2202	74	148	758	393
North Eastern	2148	98	2076	4151	99	198	390	5
Northern Frontier	2315	185	2390	4780	178	356	326	335
Northern Western	2184	124	2028	4056	36	72	576	693
Southern	5683	649	5331	10662	330	659	552	668
South Central	3917	366	3917	7834	222	444	628	20
South Eastern	2928	202	2707	5415	186	371	588	531
South East Central	821	120	821	1643	120	240	913	186
South Western	2466	116	2419	4837	113	227	386	113
Western	4036	706	3971	7943	280	537	569	369
West Central	1105	14	1104	2208	14	28	551	-

VEHICLES AND WAGONS-NUMBER AND THEIR USAGE FOR 2012-13

Railway	Goods Stock								
	Average Authorised Stock	Average Number of Wagons owned		Average Number of wagons on line daily pooled and non-pooled	Average Wagon Load during the run	Wagon kilometres per wagon day on line	Wagons Kilometres per wagon da in use		Net tonne kilometres per wagon
Central	22460	22395	25017	13977	39.1	291	224	87	8204
Eastern	22838	23448	23140	12191	56.4	118.4	108.4	51.5	4363
East Central	16500	13599	13599	16286	58.5	208	119	76.9	7078
East Coast	-	14004	14004	19319	66.6	190.7	130.3	67.5	8362
Northern	18572	13644	13773	14792	56.2	314	203.8	124.5	10954
North Central	-	-	-	16722	63.8	385.9	310.3	163.8	16103
North Eastern	3953	3953	3953	3247	71	254	154	101	10885
Northern Frontier	6113	5825	14851	4487	46	259	178	106	8789
Northern Western	7816	7816	7816	7504	56.5	311	212	107	11679
Southern	28977	9735	9478	8841	58.9	154.8	101.5	69.6	5410
South Central	16264	15722	37253	19070	39.9	341.5	325	108.5	9084
South Eastern	29287	36086	22769	15252	63.8	234.6	126.6	78.1	9260
South East Central	17548	18741	18703	19311	59.1	212.3	121.5	79.6	7580
South Western	7672	7672	7672	7398	74.3	136	86	50	6382
Western	37764	13364	12609	13103	47.5	421.1	258	112	13965
West Central	10175	10175	10175	13203	52	293.4	204.9	80.7	10939

DENSITY OF TRAFFIC (2012-13)

Railway	Passenger Kilometres per annum		Net tonne kilometres per annum (including Departmental)		Gross Tonne kilometres		Train kilometres per running track kilometre per day including Departmental)
	Per running track kilometre	per route kilometre	Per running track kilometre	per route kilometre	Per running track kilometre	per route kilometre	
Central	26586882	41637684	7573079	11860190	28004135	43857241	51.7
Eastern	14737708	25306018	4606328	7909495	17704655	30400541	40.3
East Central	14093154	21248732	8464548	12762288	22563451	34019689	33
East Coast	4392193	6302189	15478315	22209241	30874374	44300457	31.5
Northern	9086928	1615017	4003856	7006238	15062912	26772010	28.3
North Central	23323	36443	20066	34479	51962	81193	57.3
North Eastern	13144839	15887466	3971629	4309297	13141140	15882995	21
Northern Frontier	5193511	5996038	40012756	4632827	13474821	15557018	24.7
Northern Western	5632137	7153860	5632694	7154567	14141372	17962167	20.6
Southern	13468528	18739311	2799623	3895229	14272568	19858004	31
South Central	12261561	16844229	8109338	11140143	26022448	35748145	38.5
South Eastern	5032844	12395122	7721116	19015922	16993553	41852509	22.4
South East Central	8721856	14133163	18566299	30085400	40399537	64741016	46.9
South Western	8748051	7691157	5252642	4618044	14365500	12629934	24.7
Western	22195935	29134332	11387154	14946752	30470360	39995322	47
West Central	14957962	23606238	11166107	17622038	23280922	36741300	39
Metro	38819910	77639820	-	-	14167831	28335663	116.1
Average for Broad Gauge	**13414347**	**18900049**	**8597867**	**12113904**	**24293631**	**34228340**	**37**

Statement Showing Category wise No. of Stations in Indian Railway Alongwith Passengers and Actual Earning during 2011-12

S. No.	Name of Station	Railway	Stn Code	Division	State	Earlier catg. Based on Pass. Earning 06-07	Catg. Based on Pass Earning of 2011-12	Annual Earnings of 2011-12	Annual Pass. during 2011-12	Daily Average No. Of Pass. booked during 11-12
1.	CST Mumbai	CR	CSTM	BB	Maharashtra	A1	A1	4882305226	93242644	255459
2.	Dadar	CR	DR	BB	Maharashtra	A1	A1	1348037364	29136568	79826
3.	Kalyan	CR	KYN	BB	Maharashtra	A1	A1	1840522433	66136513	181196
4.	Lokmanya Tilak (T)	CR	LTT	BB	Maharashtra	A1	A1	3610280113	8103081	22200
5.	Nagpur	CR	NGP	NGP	Maharashtra	A1	A1	1893254821	11394435	31218
6.	Pune	CR	PA	PA	Maharashtra	A1	A1	3444356000	23606728	64676
7.	Solapur	CR	SUR	SUR	Maharashtra	A	A1	737781166	7134445	19493
8.	Thane	ER	TNA	BB	Maharashtra	A1	A1	1054647656	92213317	252639
9.	Bhagalpur	ER	BGP	MLDT	Bihar	A	A1	642448700	6729781	18438
10.	Howrah	ER	HWH	HWH	West Bengal	A1	A1	3806168985	41800493	114522
11.	Sealdah	ECR	SDAH	SDAH	West Bengal	A-1	A1	2106067022	44790446	122714
12.	Darbhanga Jn.	ECR	DBG	SPJ	Bihar	A1	A1	789456960	7759459	21259
13.	Dhanbad	ECR	DHN	DHN	Jharkhand	A	A-I	685635568	10779827	29534
14.	Gaya Jn.	ECR	GYA	MGS	Bihar	A	A1	777516196	9727235	26650
15.	Mughalsarai Jn.	ECR	MGS	MGS	Uttar Pradesh	A	A1	748530160	6368450	17448
16.	Muzaffarpur Jn.	ECR	MFP	SEE	Bihar	A 1	A1	1015735546	9521659	26087

17.	Patna Jn.	ECR	PNBE	DNR	Bihar	A 1	A1	3237530550	30572815	83761
18.	Bhubaneswar	ECoR	BBS	KUR	Odisha	A-1	A-1	1719833093	10161487	27764
19.	Puri	ECoR	PURI	KUR	Odisha	A	A-1	773354721	4430247	12105
20.	Visakhapatnam	ECoR	VSKP	WAT	Andhra Pradesh	A1	A-1	1837261872	12748685	34928
21.	Ambala Cantt. Jn.	NR	UMB	UMB	Haryana	A-1	A-1	1134222381	11134675	3150618
22.	Amritsar	NR	ASR	FZR	Punjab	A-1	A-1	1437424434	11008628	30161
23.	Anand Vihar Terminal	NR	ANVT	DLI	Delhi	A	A-1	656854663	3182165	8718
24.	Bareilly	NR	BE	MB	Uttar Pradesh	A	A-1	656144416	9949233	27258
25.	Chandigarh	NR	CDG	UMB	UT Chandigarh	A	A-1	862021434	4075540	2394504
26.	Dehradun	NR	DDN	MB	Uttaranchal	A	A-1	653674332	3047676	8350
27.	Delhi Jn.	NR	DLI	DLI	Delhi	A-1	A-1	16885779257	14481378	39675
28.	H. Nizamuddin	NR	HNZM	DLI	Delhi	A-1	A-1	726415746	7273583	19928
29.	Haridwar	NR	HWH	MB	Uttaranchal	A-1	A-1	1029253986	6471218	17729
30	Jammu Tawi	NR	JAT	FZR	Jammu & Kashmir	A-1	A-1	3128106577	9089300	24902
31.	Lucknow	NR	LKO	LKO	Uttar Pradesh	A-1	A-1	2453445905	18524731	50614
32.	Ludhiana	NR	LDH	FZR	Punjab	A-1	A-1	1328474836	12114705	33191
33.	New Delhi	NR	NDLS	DLI	Delhi	A-1	A-1	1502158530	13515931	37030
34.	Varanasi	NR	BSB	LKO	Uttar Pradesh	A-1	A-1	2099155047	12598339	34422
35.	Agra Cantt	NCR	AGC	AGC	UP	A	A1	960300000	6847023	18759
36.	Allahabad	NCR	ALD	ALD	UP	A1	A1	2075000000	11648181	31423
37.	Gwalior	NCR	GWL	JHS	MP	A1	A1	1090600000	9452040	25896
38.	Jhansi	NCR	JHS	JHS	UP	A1	A1	1141700000	10056915	27471
39.	Kanpur Central	NCR	CNB	ALD	UP	A1	A1	1925300000	18714900	51274
40.	Mathura Jn.	NCR	MTJ	AGC	UP	A	A1	772000000	9125938	25003
41.	Chappra Jn.	NER	CPR	Varanasi	Bihar	A	A1'	600693108	5624556	15410

42.	Gorakhpur Jn.	NER	GKP	Lucknow	UP	A1'	A1'	2197789552	14300594	39180
43.	Lucknow Jn.	NER	LJN	Lucknow	UP	A1'	A1'	1171010394	7937862	21748
44.	Guwahati	NFR	GHY	LMG	Assam	A1	A1	810160477	5364577	14697
45.	New Jalpaiguri	NFR	NJP	KIR	West Bengal	A1	A1	603948620	3320301	9097
46.	Ajmer	NWR	ALL	Ajmer	Rajasthan	A	A-1	1102848885	7073532	19380
47.	Jaipur	NWR	JP	Jaipur	Rajasthan	A-1	A-1	2475719976	14456811	40158
48.	Jodhpur Cantt	NWR	JUCT	Jodhpur	Rajasthan	A-1	A1	1165003659	6560065	17973
49.	Chennai Central	SR	MAS	MAS	TN	A1	A1	6017600162	21097228	57801
50.	Chennai Egmore	SR	MS	MAS	TN	A1	A1	2654624935	17809946	48794
51.	Coimbature Jn.	SR	CBE	SA	TN	A1	A1	1311177139	10078896	27613
52.	Emakulam Jn.	SR	ERS	TVC	KL	A1	A1	1084044345	9779396	26793
53.	Kozhikkode	SR	CLT	PGT	KL	A	A1	635708083	10190015	27918
54.	Madurai Jn.	SR	MDU	MDU	TN	A1	A1	784234339	7728858	21175
55.	Thrisur	SR	TCR	TVC	KL	A	A1	677421680	7098452	19448
56.	Thiruvananthapuram Central	SR	TVC	TVC	KL	A1	A1	1199118518	14200697	38906
57.	Hyderabad	SCR	HYB	SC	Andhra Pradesh	A1	A1	1452069135	7820670	21426
58.	Kacheguda	SCR	KCG	HYB	Andhra Pradesh	A	A1	854331352	670927	1838
59.	Secunderabad Jn.	SCR	SC	SC	Andhra Pradesh	A1	A1	4454355763	25970201	71151
60.	Tirupati	SCR	TPTY	GTL	Andhra Pradesh	A1	A1	1510413776	10823018	29652
61.	Vijayawada	SCR	BZA	BZA	Andhra Pradesh	A1	A1	1562531084	16339895	44767
62.	Kharagpur	SER	KGP	KGP	West Bengal	A	A-1	669211341	61620042	168361

63.	Tatanagar	SER	TATA	CKP	Jharkhand	A-1	A-1	956047768	7730116	21178
64.	Bilaspur Jn.	SECR	BSP	BSP	Chhattisgarh	A1	A1	798750089	9286198	25372
65.	Raipur	SECR	R	R	Chhattisgarh	A1	A1	868225418	11098015	30406
66.	Bangalore City	SWR	SBC	SBC	Karnataka	A1	A1	4446100708	24757839	67644
67.	Yesvantpur	SWR	YPR	SBC	Karnataka	A1	A1	2141387687	7842615	21428
68.	Ahmedabad	WR	ADI	Ahmedabad	Gujarat	A1	A1	3765936744	19965509	54551
69.	Bandra Terminus	WR	BDTS	Mumbai Central	Maharashtra	A1	A1	2477638189	7101237	19402
70.	Mumbai Central Main	WR	BCT	Mumbai Central	Maharashtra	A1	A1	2822533478	6321490	17272
71.	Rajkot	WR	RJT	Rajkot	Gujarat	A	A1	653784770	4382948	12008
72.	Surat	WR	ST	Mumbai Central	Gujarat	A1	A1	2447027845	24561331	67107
73.	Vadodara	WR	BRC	Vadodara	Gujarat	A1	A1	1539060158	17033440	46666
74.	Bhopal	WCR	BPL	BPL	MP	A-1	A-1	1800080046	11292927	30940
75.	Jabalpur	WCR	JBP	JBP	MP	A-1	A-1	1231495901	9031923	24745

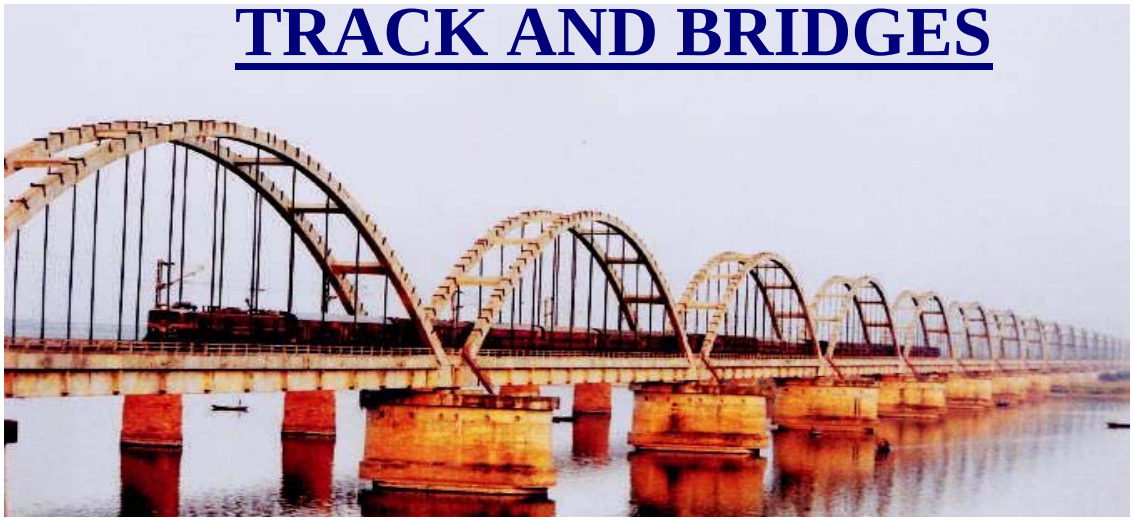
EFFICIENCY STATISTICS (2012-13)

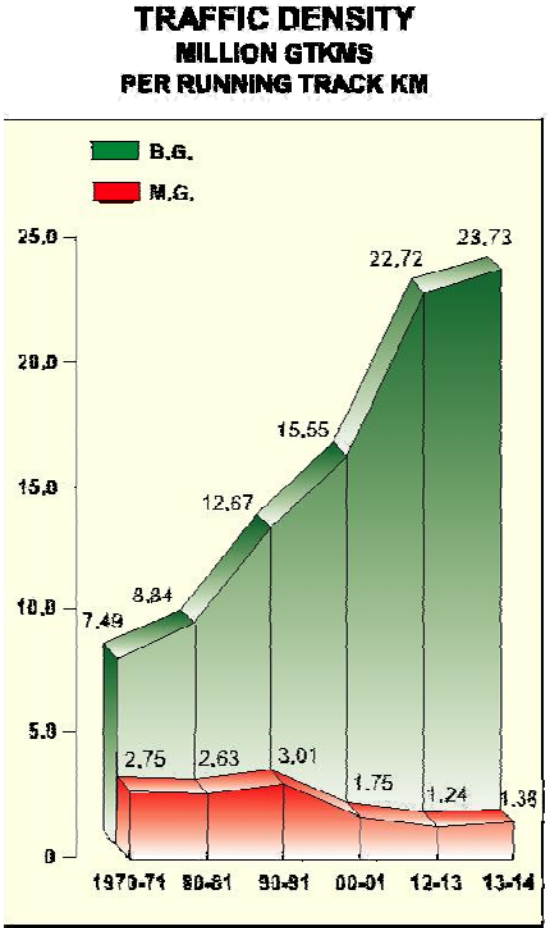
Railway	Net Tonne Kilometres		Gross Tonne Kilometre		
	Per Engine Hour	Per Train engine hour	Per Engine hour (including weight of engine and departmental)	Per Train engine hour (excluding weight of Engine and departmental)	Wagon Turn Round
Central	13050	40281	27047	79600	2.08
Eastern	7605	29240	13503	13542	2.55
East Central	38944	45019	72351	79989	2.51
East Coast	14698	50932	24007	83187	2.83
Northern	19675	32179	35786	33774	1.95
North Central	51566	64029	87575	84717	1.91
North Eastern	34194	35842	57761	60545	2.02
Northern Frontier	25972	27008	48893	48208	3.35
Northern Western	37677	49802	64254	64083	2.1
Southern	15552	43414	28796	75013	2.86
South Central	15915	34067	33198	33160	2.82
South Eastern	16726	43801	27960	68807	2.47
South East Central	18661	39151	32569	64938	2.49
South Western	19913	52130	29042	28993	2.09
Western	29001	41104	51634	73106	2.23
West Central	25214	66412	46030	131632	1.74
Average for Broad Gauge	20691	43770	37571	75217	5.18

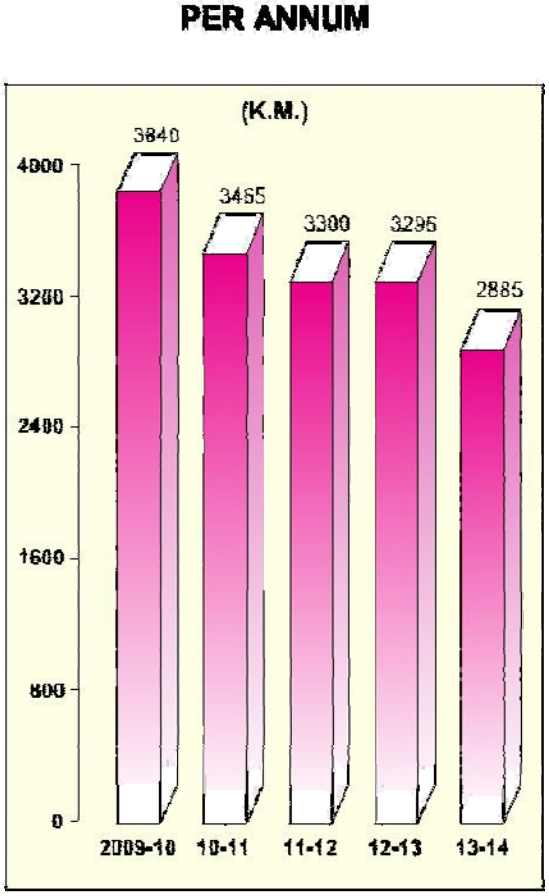
Lube Oil Consumption (2012-13)

Railway	Lubricating oil used in engines (excluding shunting, siding and departmental)				Lubricating oil used on Coaching, goods and Departmental Vehicles	
	Total Litres		Litres per 100 engine kilometres			Litres per 1000 vehicle Kilometres
	Passenger and Mixed services	Goods services	Passenger and Mixed Services	Goods Services	Total Litres	(in terms of 4-Wheelers)
Central	254265	387159	0.79	0.59	-	-
Eastern	408087	143016	1.54	1.1	-	-
East Central	419648	475883	1	1.9	68067	0.03
East Coast	237409	628865	2.63	1.76	-	-
Northern	1415472	616604	2.14	2.05	744	0.0002
North Central	409762	110264	0.81	0.22	5041	0.002
North Eastern	414538	163506	2.28	2.28	-	-
Northern Frontier	363672	228604	1.7	1.69	5660	0.01
Northern Western	1498164	1118875	6.28	9.38	49819	0.03
Southern	751062	234968	1.12	1.05	-	0
South Central	676166	1001896	1.09	1.39	77190	0.02
South Eastern	165585	231318	0.55	0.57	-	-
South East Central	121847	320886	1.36	1.44	-	-
South Western	550377	601112	2.87	4	-	-
Western	1358792	2465632	3.35	5.39	43774	0.01
West Central	749400	460423	3.05	0.85	-	-
Total Broad Gauge	9994246	9189011	1.71	1.51	250295	0.01

TRACK AND BRIDGES







Cost of the Police Force and Railway Protection Force Employed on Railways

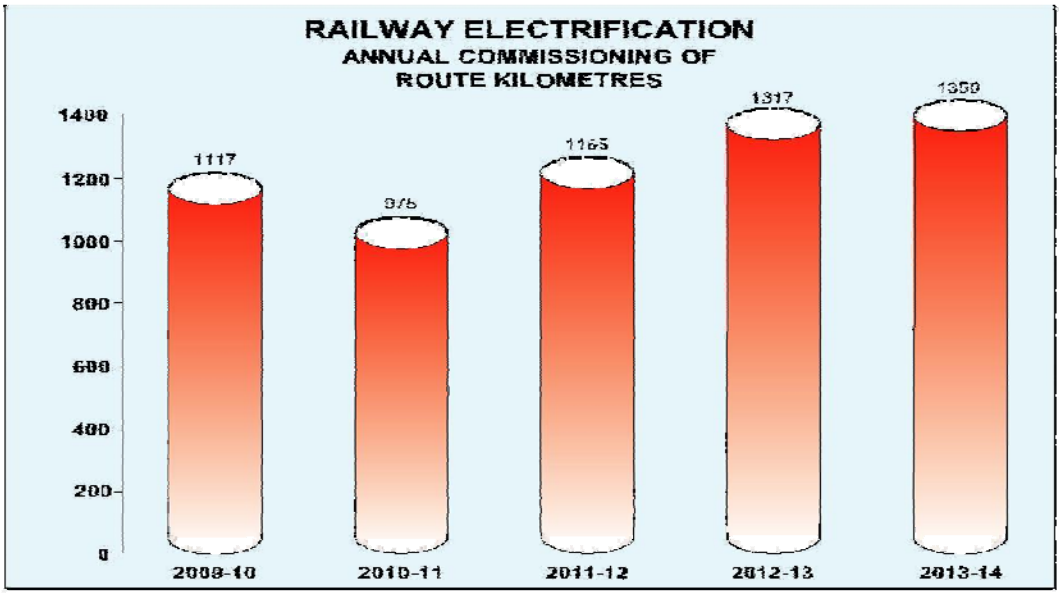
Railway	Contribution to State Government for Public	Railway Protection Force		Contingencies	Total	Total Cost to the Railway	Cost Per Route Kilometre (in Rupees)	Per Train Kilometre (In Rupees)
		Rly. Protection force	Rly. Protection Spl. Force					
Central	192215	1525859	112461	48048	1686368	1886507	466758	16.9
Eastern	391250	2424534	257485	19697	2701716	3092966	1214691	44.9
East Central	792049	1798949	246633	159881	2205463	2997512	808847.5	46.7
East Coast	21627	677072	110994	17965	806031	827658	311748.51	18.9
Northern	1049931	2460855	529509	90041	3080405	4130336	579729	29.1
North Central	353517	1055236	92159	16799	1164194	1517711	482000	15.9
North Eastern	212549	938702	159758	11429	1109889	13121781	347270.01	42.4
Northern Frontier	242432	1210212	446117	23662	1679991	1921052	484520.69	65
Northern Western	90967	673509	93165	16538	783212	874179	141335	8.81
Southern	216507	1457394	183082	7452	1647928	1864435	367107.92	26.3
South Central	304658	73686	199518	13924	287128	591786	101118.9	5.38
South Eastern	100909	1375923	211277	19986	1607186	1708095	630084.2	31.2
South East	29083	470959	-	13488	484447	513530	206350.5	9.54

Central								
South Western	149192	448766	-	3259	452025	601217	188023	16.5
Western	328358	1583627	161482	34101	1779210	2107569	327283	62.3
West Central	114736	556876	-	-	556876	671612	224494	10
Metro Railway Kolkata	11982	119235	-	577	119812	131794	5244488	61.8
Total	**4601962**	**18851394**	**2803640**	**496847**	**22151881**	**26759740**	**408945.23**	**24.1**

Route Km on Railways as on 01-04-2014

Broad Gauge Route	CR	ER	ECR	ECO	NR	NCR	NER	NFR	NWR	SR	SCR	SER	SECR	SWR	WR	WCR	**Total**
A	1264	248	417	0	87	1261	0	0	0	134	747	515	614	0	695	787	**6769**
B	680	690	397	604	1828	241	0	231	848	1219	3274	173	0	317	227	700	**11429**
C	74	806	0	0	43	0	0	0	0	25	0	0	0	0	5	0	**953**
D	703	0	0	163	958	774	1470	1276	700	2054	525	387	154	1378	1207	344	**12093**
D-Spcl.	0	0	926	1476	493	55	427	3	215	0	22	459	536	402	1044	420	**6478**
E	1022	823	1594	435	3526	587	417	1460	2775	1119	1175	1176	473	1225	1370	742	**19919**
Total Broad Gauge	3743	2567	3334	2678	6935	2918	2314	2970	4538	4551	5743	2710	1777	3322	4548	2993	57641

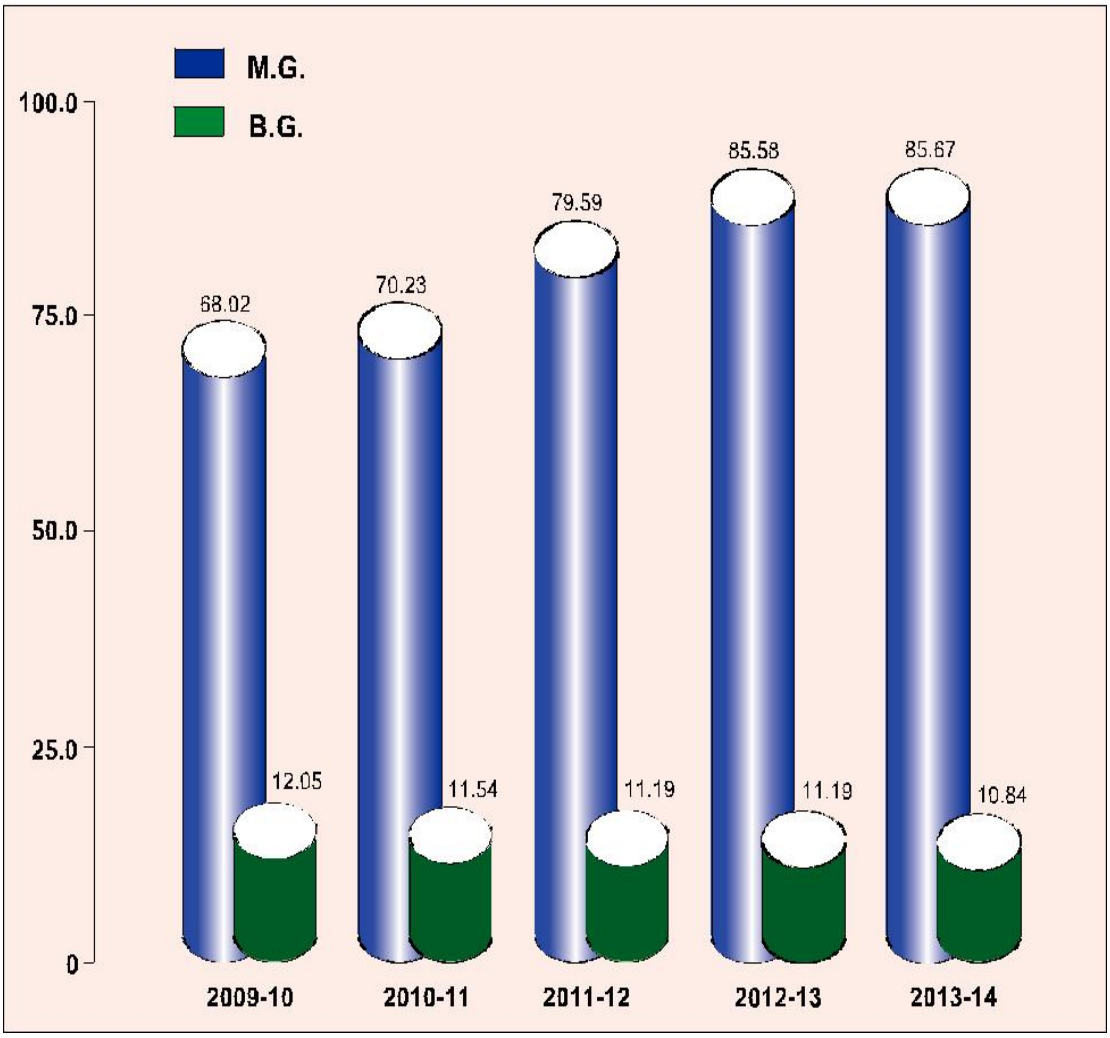
ELECTRIFICATION



Railway electrification works in progress between Shoranur-Kozhikkode section

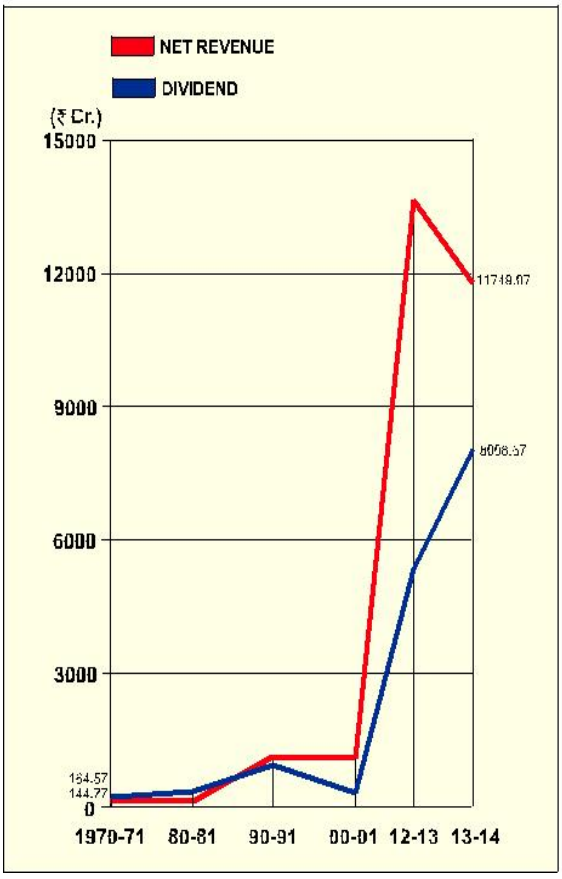
TRACTION

ENERGY CONSUMPTION (IN COAL EQUIVALENT)
GOODS SERVICES
(KGS. OF COAL/1000 GTKMS.)

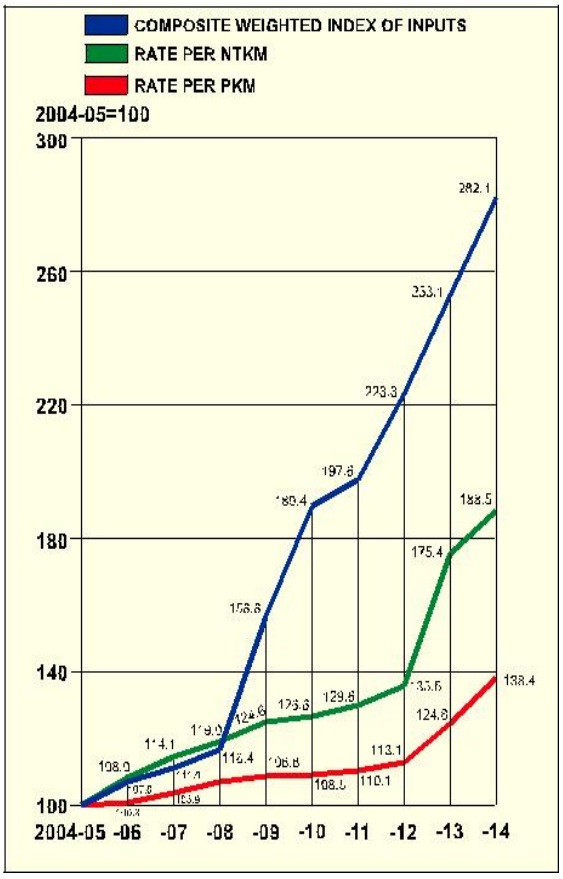


FINANCE

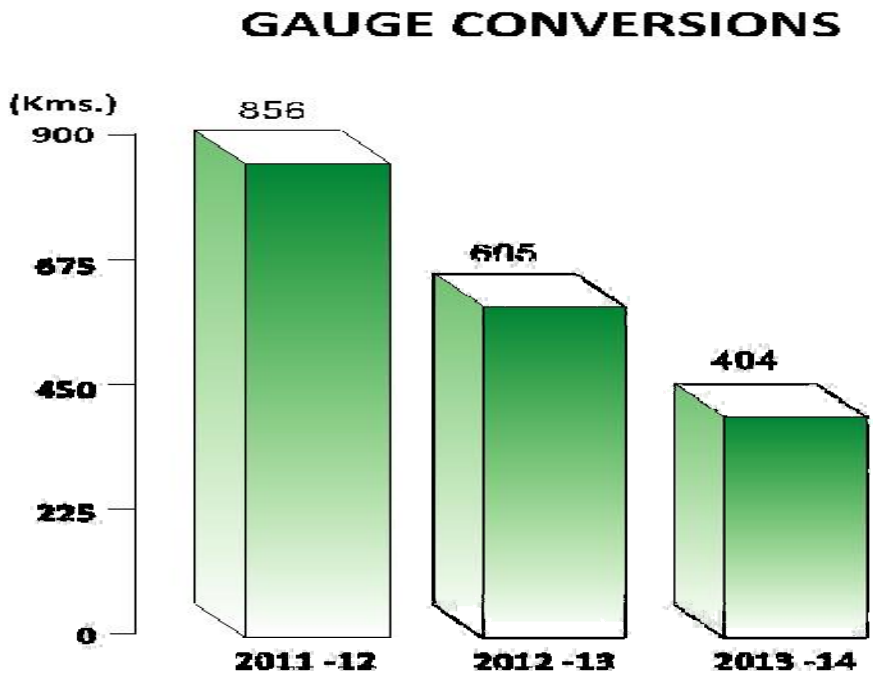
NET REVENUE AND DIVIDEND

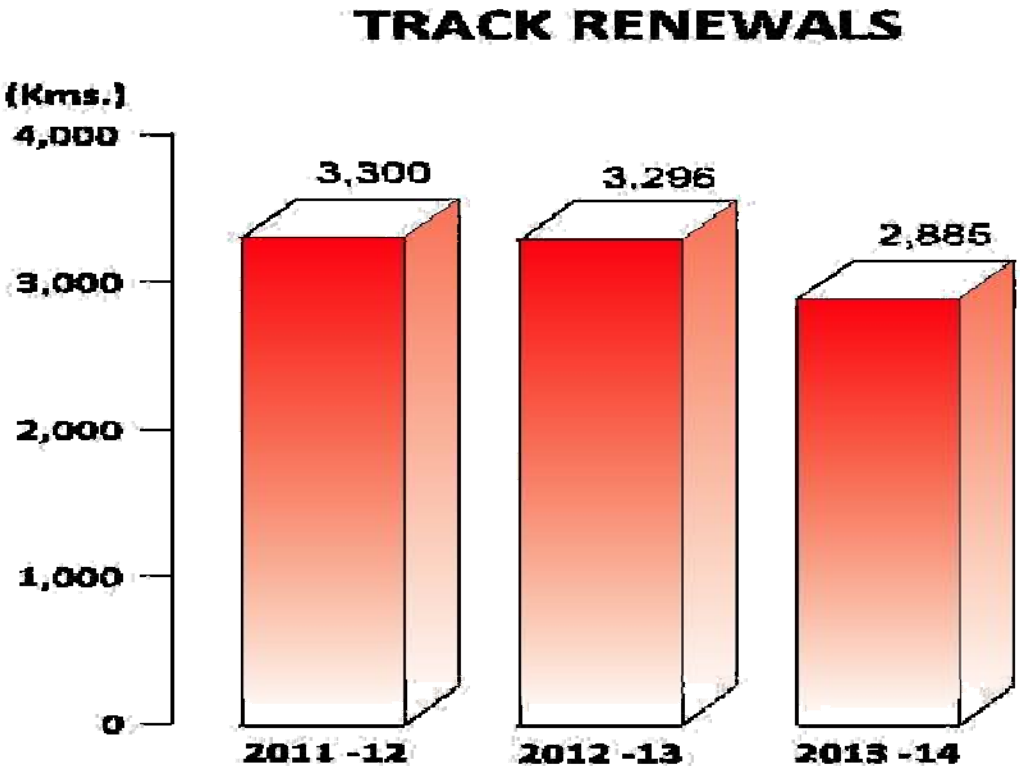


UNIT RECOVERY VS UNIT OF INPUT COST



ENGINEERING





Annexure 3: Global Railway Restructuring Experience

Japan

- Prior to Restructuring, Japan's National Railway (JNR) was organized as a public corporation; a State owned railway. There was constant government intervention at every level. The government approved the matters related to allocation of budgeting, operation plans, fares etc. JNR's unified nationwide management was ineffective to understand respond to the local needs. The labour union failed to see the worsening finances and refused to cooperate with the management.

- JNR's share in passenger transport volume dropped sharply from 55% in 1955 to 23% in 1985. The share of freight transport volume dropped more drastically from 52% to 5% over this same period. Abnormally high personnel expenses (amounting to 78% of total revenues at their peak, compared with about 40% for private railways) and JNR's consistent policy was to continue to cover its deficits by borrowing led to annual loss in 1985.

- The Japanese Railway privatization of 1987 led to t**he Regional subdivision by geographical demand** upon six regional passenger railway companies, and each company would gain control over decisions about which lines to operate and which lines to close**.** The Japanese Railway privatization divided JNR into six private regional passenger companies (JRs) and a nationwide freight carrier; JR Freight.

- **Japanese Restructuring of Railways have following features**

1) **Horizontal separation** (or regional subdivision)**:** Three on the main island of Honshu and one each on the three islands of Hokkaido, Shikoku, and Kyushu.

2) **Functional distinction** (or passenger-freight distinction): functional distinction of freight and passenger market was made. The JR freight was separated from the JR passenger and allowed to borrow tracks from infrastructure-holding passenger JRs, instead of holding the infrastructure itself.

3) **Vertical integration** (or operation and infrastructure integration); Each JR company owns the rolling stock and infrastructure. If a rail operator needs access to another company's tracks for operation is allowed based on negotiation between infrastructures providing company and the operator.

4) **lump-sum subsidies for low-density JRs**: Management Stability Fund (MSF) was established for passenger trains in Hokkaido, Shikoku, and Kyushu islands, where the population was low.

5) **Establishment of an intermediary institution**; Japan National Railway Settlement Corporation (JNRSC), a temporary holding company was set up to repay the debts of the JNR and to find new jobs for its redundant employees. For transfer of employee's special law for reemployment of former JNR workers was enacted.

6) **Allowance of non-rail service;** The JR companies explored various non-rail services such as housing, tourism etc.

7) **Yardstick competition:** The Ministry has applied a yardstick competition scheme for the assessment of fare revision. In this scheme, the performance of the operator is compared with other operators and if it is assessed as low performer, then the fare revision is not approved.

China

- Until 2000 the Ministry of Railways (MoR) controlled most of the country's railway manufacturing and supply industries via five corporations. The MoR controls 18 geographically – based railway bureaux and railway group companies. The 14 railway bureaux are centred on Beijing. Chengdu, Harbin, Hohhot, Lanzhou, Jinan, Kunming, Nanchang, Nanning, Shanghai, Shenyang, Taiyuan, Urumqi, Wuhan, Xi'an and Zhengzhou. The two group companies are the Guangzhou Railway Group Company and the Qinghai-Tibet Railway Group Company. These bureaux and companies control and oversee the national railway network forming the major part of China's public railway system.

- As part of this restructuring, the single locomotive and rolling stock industry corporation was spilt into two autonomous organizations, now known as the China North Locomotive and Rolling Stock Corp Ltd (CNR) and the China South Locomotive and Rolling Stock Corp Ltd (CSR). The reforms undertaken since 2001 have included the splitting of the freight business, passenger business and network management into independent divisions. A number of passenger and freight transport companies have been created including three specialist freight companies dealing respectively with container, express cargo and special cargo.

- Since 1990s many railways reforms have been initiated. The Ministry of Railways has organised three large-scale campaigns to increase train speeds on trunk railway lines in1997 and 1998, and October 21, 2000 respectively. Much has been done to improve service, streamline business operation and optimise train dispatch timetables. An effort for Managerial decentralisation in China has been made. The introduction of Assets Operation Liability Systems (AOLS) in 1999 was a key step in managerial decentralization by making Regional Railway Administration (RRA)

management responsible for managing and increasing the value of the assets assigned to them.

- The Chinese Railway has done away with below cost provision of passenger services. It has separated non-core activities such as enterprises dealing with construction, manufacture, telecom, design, education and social activities. Many of these enterprises now provide services to China Railways on competitively tendered basis. In the area of rolling stock, this has resulted in rapid modernization of products as a result of several JVs with foreign firms that became possible due to separation of product units.

- Management was consolidated at the level of the 18 regional administrations and some 60,000 staff positions were removed. All stations and depots now report directly to RRAs and train control centres were also consolidated at RRA level. This change brought together management responsibility and accountability at the regional level.

- China's railway construction industry was part of MOR which was separated in year 2000 as part of railway reforms. Construction activities were transferred to two large holding companies: China Railway Construction Co. (CRCC) and China Railway Engineering Corporation (CREC). Each controls 15 to 20 subsidiaries that specialise in particular aspects of railway construction. In 2004 China adopted the Mid and Long-Term Plan (MLTP). It currently aims by 2020 to increase the total rail network from 75,000 to 120,000 route-km. It includes construction of 16,000 km of high-speed routes, three new regional inter-city networks, new dedicated coal lines and substantial double tracking and electrification.

- In 2005 China adopted Joint Venture (JV) model which is funded 50:50 by debt from local banks and equity from MOR and third parties (typically provinces and potential customers).

- In China, the Ministry of Railways (MOR) was abolished in March 2013. Thus separated railway policy and regulation from commercial operation. The State Railway Administration (SRA) to oversee the railway administration functions under the Ministry of Transport (MOT) was established. Meanwhile, a new China Railway Corporation (CRC) is being established to take over the commercial functions previously performed by the MOR. As a result, MoRs planning and policy making functions have been assigned to the MoT. CRC is fully owned by Ministry of Finance.

- The new state reforms mainly aim to separate government from enterprise, shift from control to regulation and supervision, reduce red tape and boost administrative

efficiency, strengthen supervision of rail transport safety and tackle rampant corruption.

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Russia

- The Russian passenger railway sector has experienced crucial reforms since 2001 which transformed the vertically and horizontally integrated structure to commercial, corporatized structure focused on specific business activities and private sector participation in train operations.

- The **Pre 2001 reform** period primarily looked at establishing legal basis for reforms, transfer of social services to appropriate ministries and encouraged private sector participation in supply industry. In 1995 the Federal Railway Law was ratified which meant non-transport-related facilities will be privatised; the operating railway was not liable to denationalization. Some ancillary enterprises like equipment supply works and train and station catering services were privatized.

- **In 2003,** the 'Federal Law on Railway Transport in the Russian Federation,' came into effect. This law separated the Ministry of Railways into the Federal Railway Transport Agency (FRTA) and Russian Railways (RZhD). The FRTA is a Ministry of Transport agency that regulates rail transport, and RZhD is a state owned company in charge of railway infrastructure, and train operations for freight and passengers.

- The 2003 Federal law created a legal basis for railway operators (managers of wagons) and railway carriers (managers of wagons and locomotives), and required RZhD to provide open access to railway infrastructure for carriers and operators. As the services got separated, RZhD tariffs separated infrastructure charges from wagon and locomotive charges. The 2003 Federal Charter of Railway Transport specified business models and legal responsibilities for rail infrastructure service providers.

- Under the new legal structure, independent cargo companies could manage their own cargo. However, RZhD remained the sole carrier. 177 Rail operators and rolling stock leasing companies emerged as private businesses; rail operators functioned as freight forwarders that either owned or rented wagons and handled all customer rail logistics; and rolling stock leasing companies purchased and leased wagons. The RZhD made separated management functions from accounting in each business line within RZhD; thus creating transparent operations in each division.
- **In 2003 the law further enabled the establishment of RZhD as a joint stock holding company** and separated many institutional activities. RZhD created 63

subsidiary companies such as JSC TransContainer, RailTranAuto, Rail Passenger Directorate, Russian Troika, TransGroup, and Refservis.

- **Since 2006,** reforms have included passenger transportation. **The Rail Passenger Directorate was formed** to focus on managing long distance passenger services as a business entity. Subsidiaries jointly owned by RZhD and local governments are being formed for local passenger service, which allows RZhD access to local government financial support for loss-making suburban passenger services. Private companies have emerged to offer specialized passenger services, mostly on the St. Petersburg-Moscow line. The companies own and operate passenger coaches, set prices, sell tickets, and provide on-board and on-station staffing. RZhD locomotives and drivers haul these coaches. CJSC TC Grand Service Express and LLC Tverskoy Express are the most prominent private companies.

- **Between 2006-2010**, the reforms focused on developing competition and increase private sector participation. RZhD formed First Freight Company (FFC) and capitalized it with 200,000 wagons, and formed Second Freight Company (SFC), capitalized with 217,000 wagons. Both companies intend to sell shares to the public; both face competition from independent operators such as GlobalTrans, and operating companies set up by major natural resources companies such as Gazprotrans. By end-2009, independent private owners had 42.3 percent of the Russian railway fleet.

- **Since 2010**, the RZhD transferred staff and assets to the newly formed Federal Passenger Company, which is responsible for long distance rail passenger.

United Kingdom

- In 1947, under the Transport Act, the British Railways was formed through nationalization of four big British railways companies. The period of 1950s, known as era of modernization and rationalization of British railways took off to eliminate financial deficit. Electrification of many lines, dieselization to replace steam locomotives, re-signalling and track renewals was initiated. The 1960s period is known as era of rationalization; the Beechings report put forth the plan for reshaping the railways to reflect the declining use of many lines, stations, and freight facilities and also led to a closure and shrinkage of railways.

- The Britain's railways have been operated as a single, vertically integrated business, including track maintenance as well as train operations, passenger and freight services. The passenger infrastructure (the bulk of the railway network) was assigned to the passenger business which was its principal user, while freight-

specific infrastructure was the responsibility of Trainload Freight. Freightliner services operated mainly over passenger lines. The board also operated two parcel businesses.

- The Privatization of the railways was rolled out with the **Railway Act of 1993** which enabled broad reforms:

1. Horizontal separation; the railways was separated into 25 train operation unit which was called as train operating companies (TOC) and were privatised via a franchising process conducted by the office of Passenger Rail Franchising (OPRF). By far the majority of services are franchises. The rights and obligations are specified in a Franchise Agreement between the franchising authority (in practice the Department for Transport) and the TOC
2. Vertical separation between the ownership of infrastructure and of operations; Railtrack company took over ownership of all track, signalling and stations. All though in 2001, the Railtrack was replaced by Networkrail.
3. The rail regulator was appointed with powers to grant operating licenses and to enforce compliance with those licenses and authority to regulate access to track, stations and depot.
4. Rights of access were made available to private freight operators without a franchise.
5. Additional creation and privatisation of over 50 ancillary businesses.

- Three rolling stock leasing companies ROSCOs and six freight operating companies (FOCs) were created. Other companies were created to carry out specific functions. The European passenger service; the Eurostar International formed in 1990 as the division of British Railways, its ownership was transferred to London and Continental Railways in 1996. It was renamed as Eurostar UK limited.

- With the **Transport Act 2000**, the Director of Passenger Rail Franchising and the British Railways Board were abolished and instead the Strategic Railway Authority (SRA) was established. In addition, in 2001 Railtrack was replaced by Networkrail. Network Rail is now responsible for the operation, maintenance and improvement of railway infrastructure (i.e. the track, signals, bridges and stations).

- However, the **Railway Act 2005** (a) dissolved SRA and (b) some of its functions (such as Franchise) were transferred to Department for Transport and vesting others in Network Rail, the national rail infrastructure company, (c) responsibility for rail safety was to move from the Health & Safety Executive to the Office of Rail Regulation, the industry's regulatory body.

Germany

- In 1949, the German constitution stated that railways had to be part of the federal administration which means it doesn't have any legal basis. The Deutsche Bundesbahn(DB), German Federal Railway was state-owned and highly centralized governance structure. The states could exercise controlling functions in an administrative board. The DB could not be prevented from losing market shares and from financial decline. Since the middle of the 1950s, Deutsche Bundesbahn lost a substantial part of its market share, 'from 1960 to 1990 it decreased from 36 % in passenger transport to 6.1 % and from 56 % in freight transport to 20.5%'.

- In 1989, the German Government initiated Regierungskomission Bahn (RegB) to pursue reforms for German Railways. With the German reunification the Government was under pressure to reform DB. In 1992 the RegB's suggestions were drafted as laws for which the German constitution had to be changed after a tedious negotiation process between the federal and the states and between all political parties and their supporters. The states demanded a compensation for giving up their influence on the DB. Subsequently, the states received massive transfers to finance public transport. Additionally, the states enforced the codification of public ownership of the rail infrastructure (at least 50.1 %) in the constitution.

- **The Eisenbahnneuordnungsgesetz (law on the restructuring of the railways) was enacted at the end of 1993.** It contains (i) the Allgemeine Eisenbahngesetz (general railway law) which was subsequently changed and amended and (ii) the Deutsche Bahn Gründungsgesetz (Deutsche Bahn foundation law). The federal rail network extension law (Bundesschienenwegeausbaugesetz - BSchwAG) was enacted in 1993. It stipulates the responsibility of the public hand for construction, upgrading and replacement investments of the rail network.

- Deutsche Bundesbahn and Deutsche Reichsbahn merged and were transformed into Deutsche Bahn AG (DB AG), a public limited company in public ownership. The federal state was still the owner, the DG Bahn would be less dependent on the government, because of the new management consisting of a management board, supervisory board and shareholders.

- **The reform stipulated an enterprise restructuring i.e.:**
  (1) DB AG was subdivided into four divisions; Local and regional passenger transport; Long distance passenger transport; Freight transport and Infrastructure.
  (2) In 1999, the four divisions were turned into five companies under **DB AG;** Local and regional passenger transport: **DB Regio AG;** Long distance passenger transport: **DB Reise und Touristik AG**; Freight transport: **DB Cargo AG**; Rail

network: **DB Netz AG**; For passenger train stations, DB Station and Service AG was newly created additionally to the legal requirements. All rolling stock, track, personnel, and real assets were divided among the holding company.

- **In December 2007 DB was reorganised**. **It brought all passenger services into its DB Bahn arm, logistics under DB Schenker and infrastructure and operations under DB Netze**. The DB is owned by the Federal Republic. By the Constitution, the Federal Republic is required to retain (directly or indirectly) a majority of the infrastructure (the present DB Netze) stocks.
- The DB group (Deutsche Bahn AG) is divided into five main operations groups: Arriva, DB Bahn, DB Dienstleistungen, DB Netze, and DB Schenker. These subsidiaries are companies in their own right, although most of them are 100% owned by DBAG.

- Germany's 2 State owned passenger trains DB Long-distance and DB Regional, both benefit from government financial support. DB and its subsidiary passenger and infrastructure companies are responsible for financing their operations, management and maintenance expenses entirely from revenues

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South Korea

- In 1963 Railroad Administration Board of the Ministry of Transportation was replaced by Korean National Rail road (KNR) in South Korea. The KNR, the operator of the railways was responsible for the infrastructure and passenger/freight operation. As a result, there was no clear division of responsibility between the Ministry of Construction and Transportation (MOCT) and the KNR. The railway system had been losing market share in competition with automobiles and airlines, and the return on investment in the railway industry has been declining. The KNR was suffering a chronic deficit and is incurring an enormous debt.

- **In 2005 KNR was split into Korea Railroad Corporation and Korea Rail Network Authority, which succeeded maintaining tracks**.The **Korea Railroad Corporation,** promoted as Korail. It is the national railroad operator in South Korea. Korail operates metros, passenger and freight trains throughout South Korea. Before the 2005 reforms, the nation-wide railway network had been operated by state-owned railways, including the infrastructure management component. **Reforms in 2005 transformed the railways into a public corporation, and the infrastructure was transferred to the Korea Rail Network Authority (KRNA).**

- Korean rail reforms have been executed since 1998 and the Korean Congress passed three rail reform Acts, The Basic Act of Rail Industry Development, The Public

Entity Act of Korean Rail Facility, and The Public Corporation Act of Korean Rail Operation, in 2003. Since 1998-2003, the government chose privatization as a way to reform the monopoly Korean National Railroad (KNR). However, the new Government in 2003 instead **changed the rail reform policy from privatization to a public corporation system**. Its aim was to transform the government monopoly system to a public corporation system in which the government owned rail facilities and a public corporation newly created operated them.

- **In January 2005, the industry underwent a structural reform.** Under the Korail Act of 2005, Korail was established as a public corporation, owned by the government and mandated by MOCT to operate both conventional and high-speed railways. At the same time, the Korea Rail Network Authority (KRNA) was established to construct railway facilities. Korea implemented railway reform in 2005 through vertical separation. At present, a state-owned railway, Korail, operates trains by accessing the nation-wide railway network owned by Korea Rail Network Authority (KRNA).

- Korail was established under the Framework Act on Rail Industry Development and Korail Act. It is governed by the Railroad Business Act, Railroad Safety Act and the Railroad Construction Act. Under these Acts, Korail carries out national railroad policies and is responsible for establishing a sustainable and efficient railroad operation system under direct supervision of the MOCT. The Framework Act on Rail Industry Development calls for cooperation between Korail and KRNA as both is inter-dependent and complementary to each other. According to the Korea Railroad Corporation Act, the government offers financial support and provides guidance on policies and operations. Korail operates all the long distance lines in South Korea as well as local lines.

United States of America

- **Rail transportation in the United States** today consists primarily of freight shipments. Passenger service, once a large and vital part of the nation's passenger transportation network, now plays a limited role. Federal regulation of railroads is mainly through the United States Department of Transportation, especially the Federal Railroad Administration which regulates safety, and the Surface Transportation Board which regulates rates, service, the construction, acquisition and abandonment of rail lines, carrier mergers and interchange of traffic among carriers. Railroads are also regulated by the individual states. There are about 650 railroads which operate common carrier freight service in the United States.

- U.S. railroads are separated into three classes based on annual revenues:
  a) Class I for freight railroads with annual operating revenues above $346.8 million (2006 dollars)
  b) Class II for freight railroads with revenues between $27.8 million and $346.7 million in 2000 dollars
  c) Class III for all other freight revenues.

- Under the **Rail Passenger Service Act of 1970, Congress created the National Railroad Passenger Corporation (NRPC)** to subsidize and oversee the operation of intercity passenger trains. **In 1971 the Amtrak (National Railroad Passenger Corporation) federal organization, began its operation as a publicly funded railroad service** operated and managed as a for-profit corporation, to provide intercity passenger train service in the United States.Amtrak is organised as a corporation, but its board members are appointed by the president of the United States and almost all its stock is owned by the federal government.

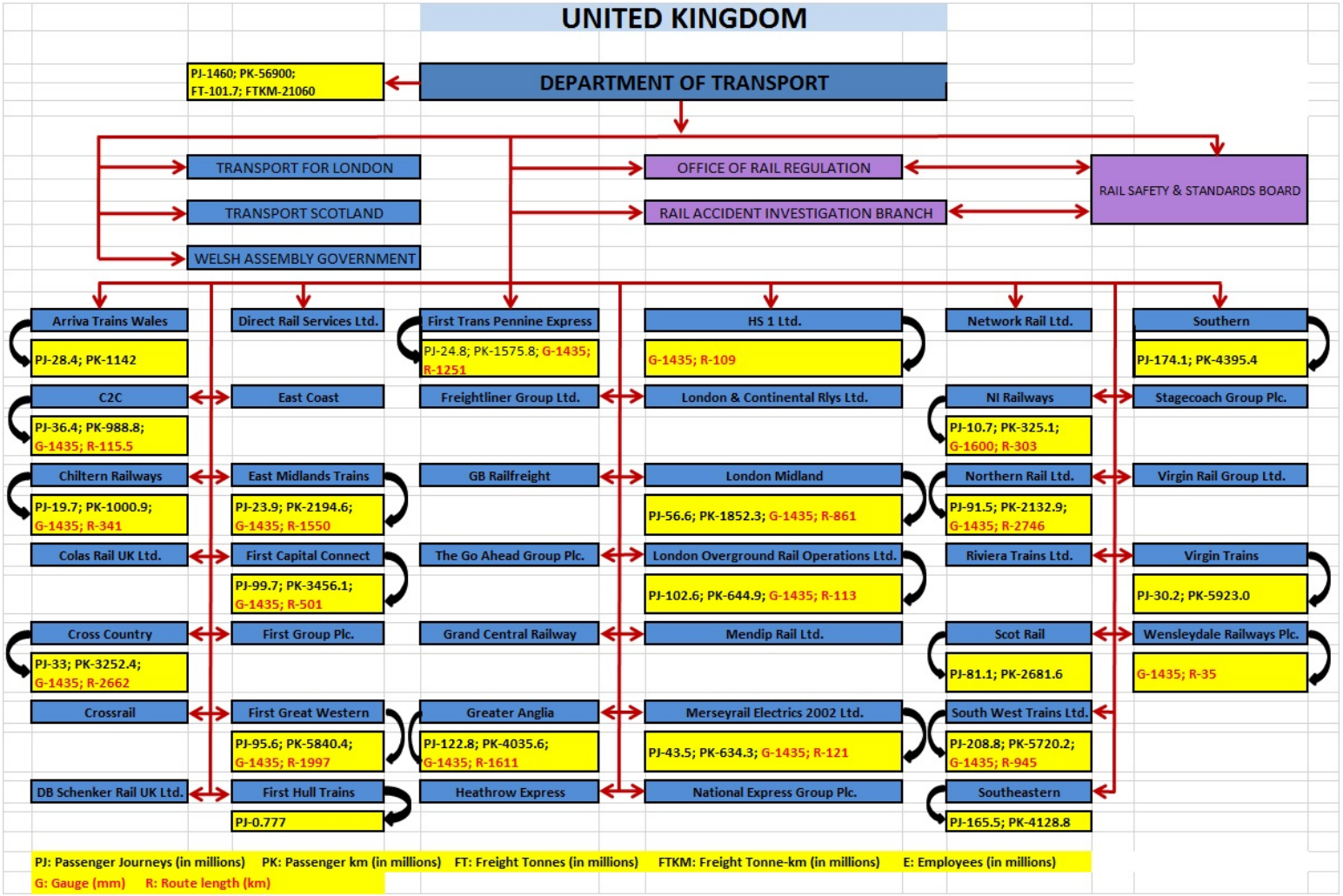
- To preserve a declining freight rail industry, Congress passed the **Regional Rail Reorganization Act of 1973,** sometimes called the "3R Act". The act was an attempt to save viable freight operations from the bankrupt Penn Central and other lines. **The law created the Consolidated Rail Corporation (Conrail), a government-owned corporation,** which began operations in 1976. Another law, **the Railroad Revitalization and Regulatory Reform Act of 1976 (the "4R Act"),** provided more specifics for the Conrail acquisitions and set the stage for more comprehensive deregulation of the railroad industry. Portions of the Penn Central, Erie Lackawanna, Reading Railroad, Ann Arbor Railroad, Central Railroad of New Jersey, Lehigh Valley, and Lehigh and Hudson River were merged into Conrail.

- **The Carter administration in 1980 enacted the Staggers Rail Act** following the bankruptcy of Pen Central and other lines. The law deregulated the rail industry which helped immensely in allowing all railroads to more easily abandon unprofitable rail lines and set its own freight rate. Since then, U.S. freight railroads have reorganized, discontinued their lightly used routes and returned to profitability. In 1986 the Conrail Privatization Act of 1986 was enacted as a law and by 1987 its stock was sold out to jointly owned private investors, the CSX Transportation and Norfolk Southern Railway.

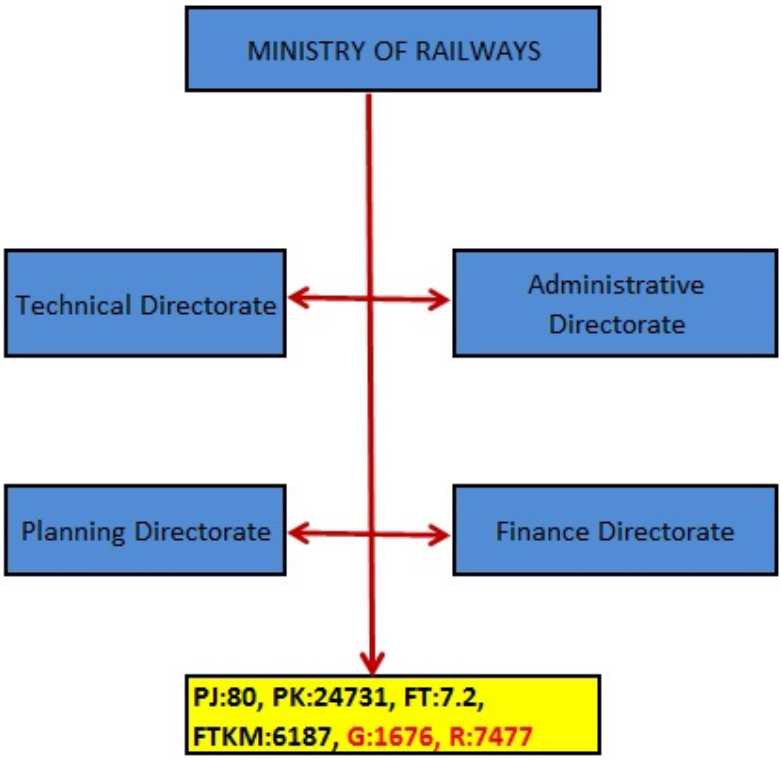
- **In 1997 the Amtrak Reform and Accountability Act of 1997 was enacted**. This Act provided that Amtrak (a) would no longer be a government corporation or hold a rail passenger monopoly; (b) would be allowed to add new routes and close money-losing routes; (c) would receive approximately $2.2 billion in Taxpayer Relief Act funds; and (d) would have to achieve operational self-sufficiency (i.e., no longer receive federal operating grants) five years after the enactment of the Act.

- **The Act created Amtrak Reform Council, an independent oversight commission** was formed with a goal to (a) make recommendations to Amtrak to help it reach operational self-sufficiency; (b) report annually to Congress on Amtrak's performance in several areas; (c) if the Council were to find that Amtrak would be unable to achieve its goal of operational self-sufficiency by December 2, 2002, then submit to Congress a plan for a rationalized and restructured national rail passenger system; and (d) if such a finding were made by the Council, Amtrak would submit a plan for Amtrak's liquidation to the Congress. After 2 reports and several rounds of suggestions and hearings, **in 2002 the Action Plan for the Restructuring and Rationalization of the National Intercity Rail Passenger System was drawn.**

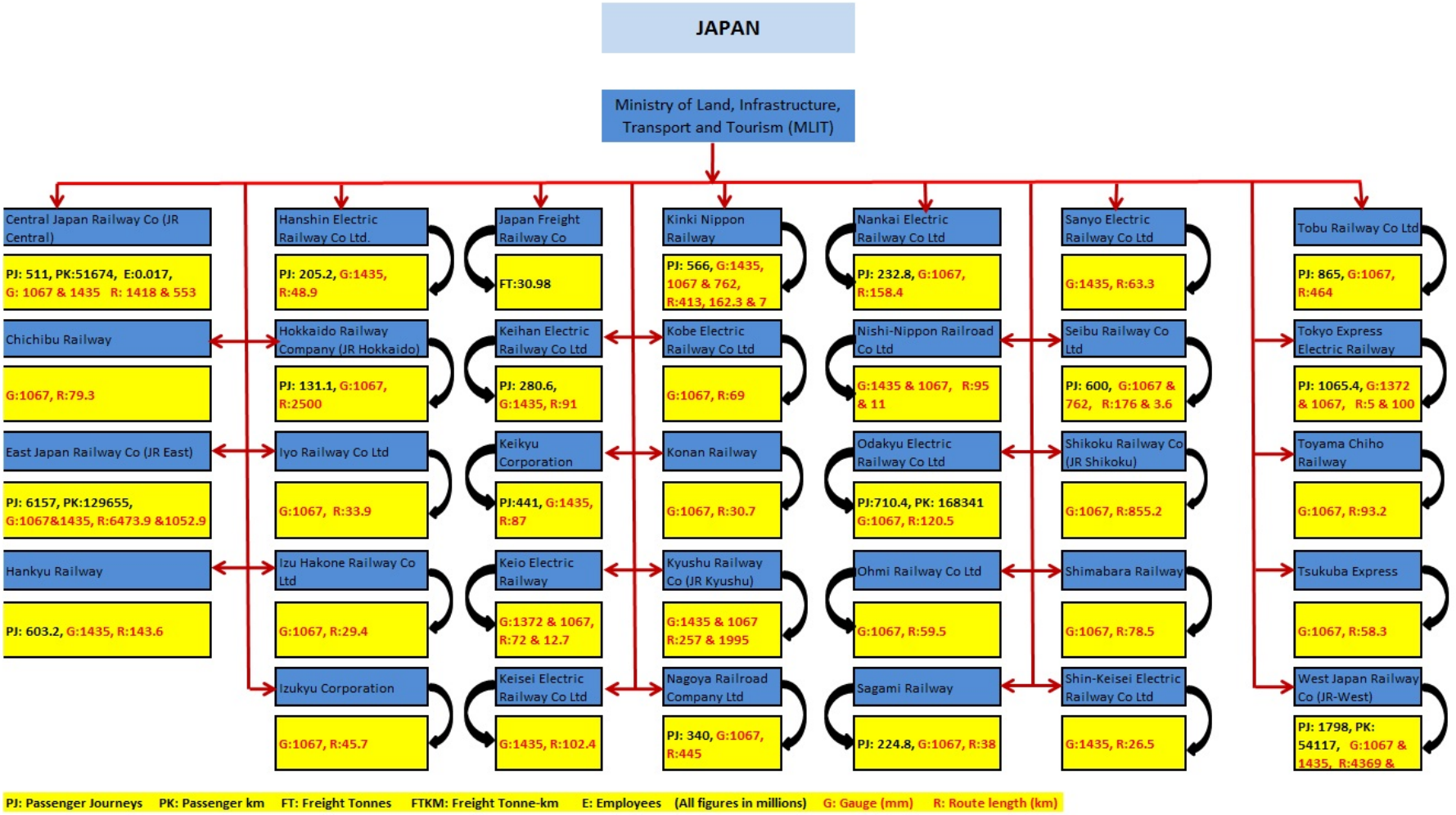
- Access by private contract is predominant feature in the freight market in the USA. All the Class I railways and around 90% of the rest are privately owned. US law does not give any legal rights of access of one freight railway company over the tracks of another freight railway company. But, under US Competition Law, railways have 'common carrier' obligations t freight customers. They must provide to customer routes and tariffs to move traffic from any origin to any destination on the railway network. And if it necessary for more than one railway to participate to complete the traffic movement the railway to must interchange he traffic and establish tariff for the total movement. Also, a railway can complete the movement with its own trains by entering into track agreement with one or more other railways.


UNITED KINGDOM
DEPARTMENT OF TRANSPORT
PJ-1460; PK-56900; FT-101.7; FTKM-21060
TRANSPORT FOR LONDON
TRANSPORT SCOTLAND
WELSH ASSEMBLY GOVERNMENT
OFFICE OF RAIL REGULATION
RAIL ACCIDENT INVESTIGATION BRANCH
RAIL SAFETY & STANDARDS BOARD
Arriva Trains Wales
PJ-28.4; PK-1142
C2C
PJ-36.4; PK-988.8; G-1435; R-115.5
Chiltern Railways
PJ-19.7; PK-1000.9; G-1435; R-341
Colas Rail UK Ltd.
Cross Country
PJ-33; PK-3252.4; G-1435; R-2662
Crossrail
DB Schenker Rail UK Ltd.
Direct Rail Services Ltd.
East Coast
East Midlands Trains
PJ-23.9; PK-2194.6; G-1435; R-1550
First Capital Connect
PJ-99.7; PK-3456.1; G-1435; R-501
First Group Plc.
First Great Western
PJ-95.6; PK-5840.4; G-1435; R-1997
First Hull Trains
PJ-0.777
First Trans Pennine Express
PJ-24.8; PK-1575.8; G-1435; R-1251
Freightliner Group Ltd.
GB Railfreight
The Go Ahead Group Plc.
Grand Central Railway
Greater Anglia
PJ-122.8; PK-4035.6; G-1435; R-1611
Heathrow Express
HS 1 Ltd.
G-1435; R-109
London & Continental Rlys Ltd.
London Midland
PJ-56.6; PK-1852.3; G-1435; R-861
London Overground Rail Operations Ltd.
PJ-102.6; PK-644.9; G-1435; R-113
Mendip Rail Ltd.
Merseyrail Electrics 2002 Ltd.
PJ-43.5; PK-634.3; G-1435; R-121
National Express Group Plc.
Network Rail Ltd.
NI Railways
PJ-10.7; PK-325.1; G-1600; R-303
Northern Rail Ltd.
PJ-91.5; PK-2132.9; G-1435; R-2746
Riviera Trains Ltd.
Scot Rail
PJ-81.1; PK-2681.6
South West Trains Ltd.
PJ-208.8; PK-5720.2; G-1435; R-945
Southeastern
PJ-165.5; PK-4128.8
Southern
PJ-174.1; PK-4395.4
Stagecoach Group Plc.
Virgin Rail Group Ltd.
Virgin Trains
PJ-30.2; PK-5923.0
Wensleydale Railways Plc.
G-1435; R-35
PJ: Passenger Journeys (in millions) PK: Passenger km (in millions) FT: Freight Tonnes (in millions) FTKM: Freight Tonne-km (in millions) E: Employees (in millions)
G: Gauge (mm) R: Route length (km)

PAKISTAN



PJ: Passenger Journeys PK: Passenger km FT: Freight Tonnes FTKM: Freight Tonne-km
G: Gauge (mm) R: Route length (km)


JAPAN
Ministry of Land, Infrastructure, Transport and Tourism (MLIT)
Central Japan Railway Co (JR Central)
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Chichibu Railway
G:1067, R:79.3
East Japan Railway Co (JR East)
PJ: 6157, PK:129655, G:1067&1435, R:6473.9 &1052.9
Hankyu Railway
PJ: 603.2, G:1435, R:143.6
Hanshin Electric Railway Co Ltd.
PJ: 205.2, G:1435, R:48.9
Hokkaido Railway Company (JR Hokkaido)
PJ: 131.1, G:1067, R:2500
Iyo Railway Co Ltd
G:1067, R:33.9
Izu Hakone Railway Co Ltd
G:1067, R:29.4
Izukyu Corporation
G:1067, R:45.7
Japan Freight Railway Co
FT:30.98
Keihan Electric Railway Co Ltd
PJ: 280.6, G:1435, R:91
Keikyu Corporation
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Keio Electric Railway
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Keisei Electric Railway Co Ltd
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Kinki Nippon Railway
PJ: 566, G:1435, 1067 & 762, R:413, 162.3 & 7
Kobe Electric Railway Co Ltd
G:1067, R:69
Konan Railway
G:1067, R:30.7
Kyushu Railway Co (JR Kyushu)
G:1435 & 1067 R:257 & 1995
Nagoya Railroad Company Ltd
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Nankai Electric Railway Co Ltd
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Nishi-Nippon Railroad Co Ltd
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Odakyu Electric Railway Co Ltd
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Ohmi Railway Co Ltd
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Sagami Railway
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Sanyo Electric Railway Co Ltd
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Seibu Railway Co Ltd
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Shikoku Railway Co (JR Shikoku)
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Shimabara Railway
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Shin-Keisei Electric Railway Co Ltd
G:1435, R:26.5
Tobu Railway Co Ltd
PJ: 865, G:1067, R:464
Tokyo Express Electric Railway
PJ: 1065.4, G:1372 & 1067, R:5 & 100
Toyama Chiho Railway
G:1067, R:93.2
Tsukuba Express
G:1067, R:58.3
West Japan Railway Co (JR-West)
PJ: 1798, PK: 54117, G:1067 & 1435, R:4369 &
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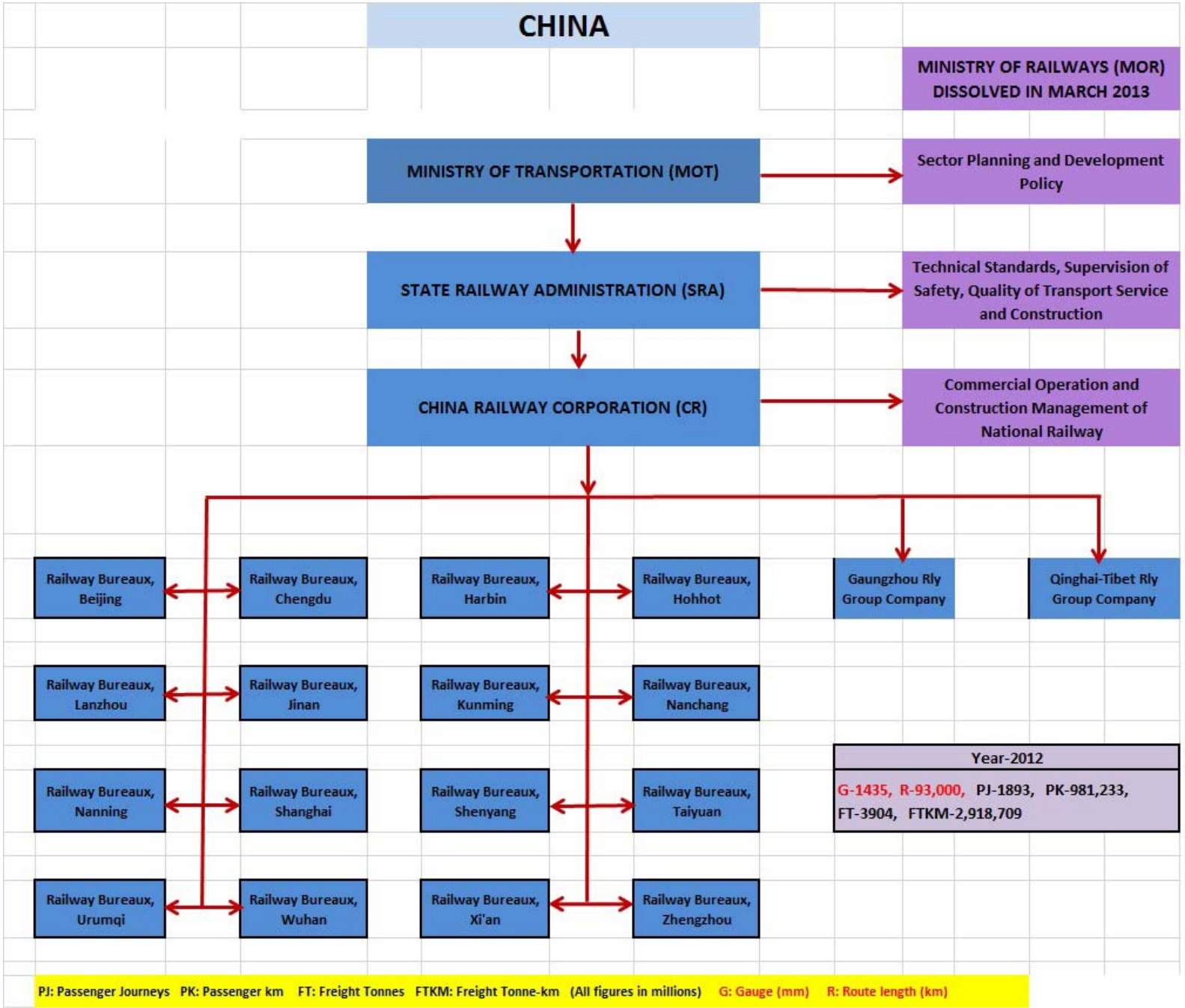
CHINA
MINISTRY OF RAILWAYS (MOR)
DISSOLVED IN MARCH 2013
MINISTRY OF TRANSPORTATION (MOT)
Sector Planning and Development Policy
STATE RAILWAY ADMINISTRATION (SRA)
Technical Standards, Supervision of Safety, Quality of Transport Service and Construction
CHINA RAILWAY CORPORATION (CR)
Commercial Operation and Construction Management of National Railway
Railway Bureaux, Beijing
Railway Bureaux, Chengdu
Railway Bureaux, Harbin
Railway Bureaux, Hohhot
Gaungzhou Rly Group Company
Qinghai-Tibet Rly Group Company
Railway Bureaux, Lanzhou
Railway Bureaux, Jinan
Railway Bureaux, Kunming
Railway Bureaux, Nanchang
Railway Bureaux, Nanning
Railway Bureaux, Shanghai
Railway Bureaux, Shenyang
Railway Bureaux, Taiyuan
Railway Bureaux, Urumqi
Railway Bureaux, Wuhan
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Railway Bureaux, Zhengzhou
Year-2012
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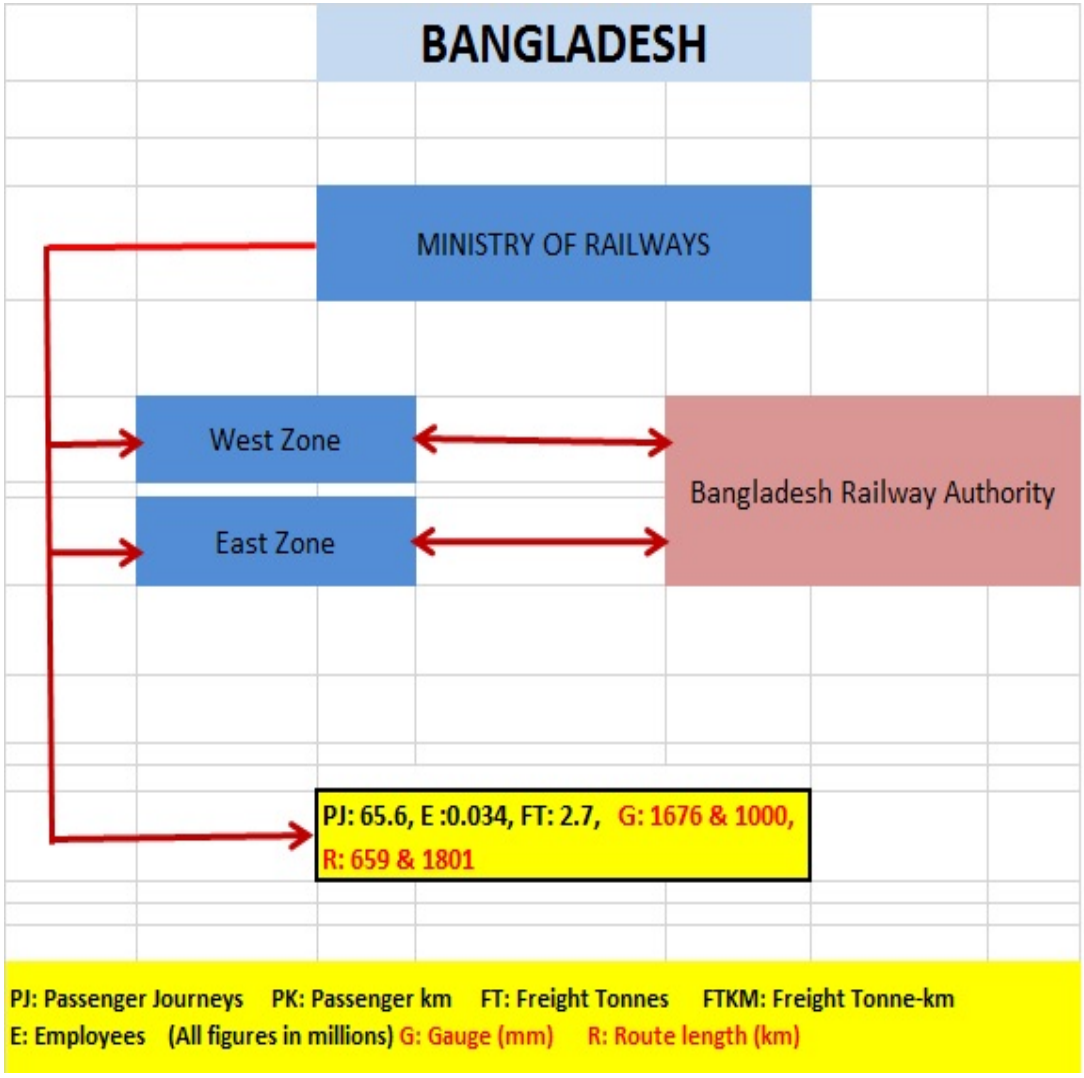
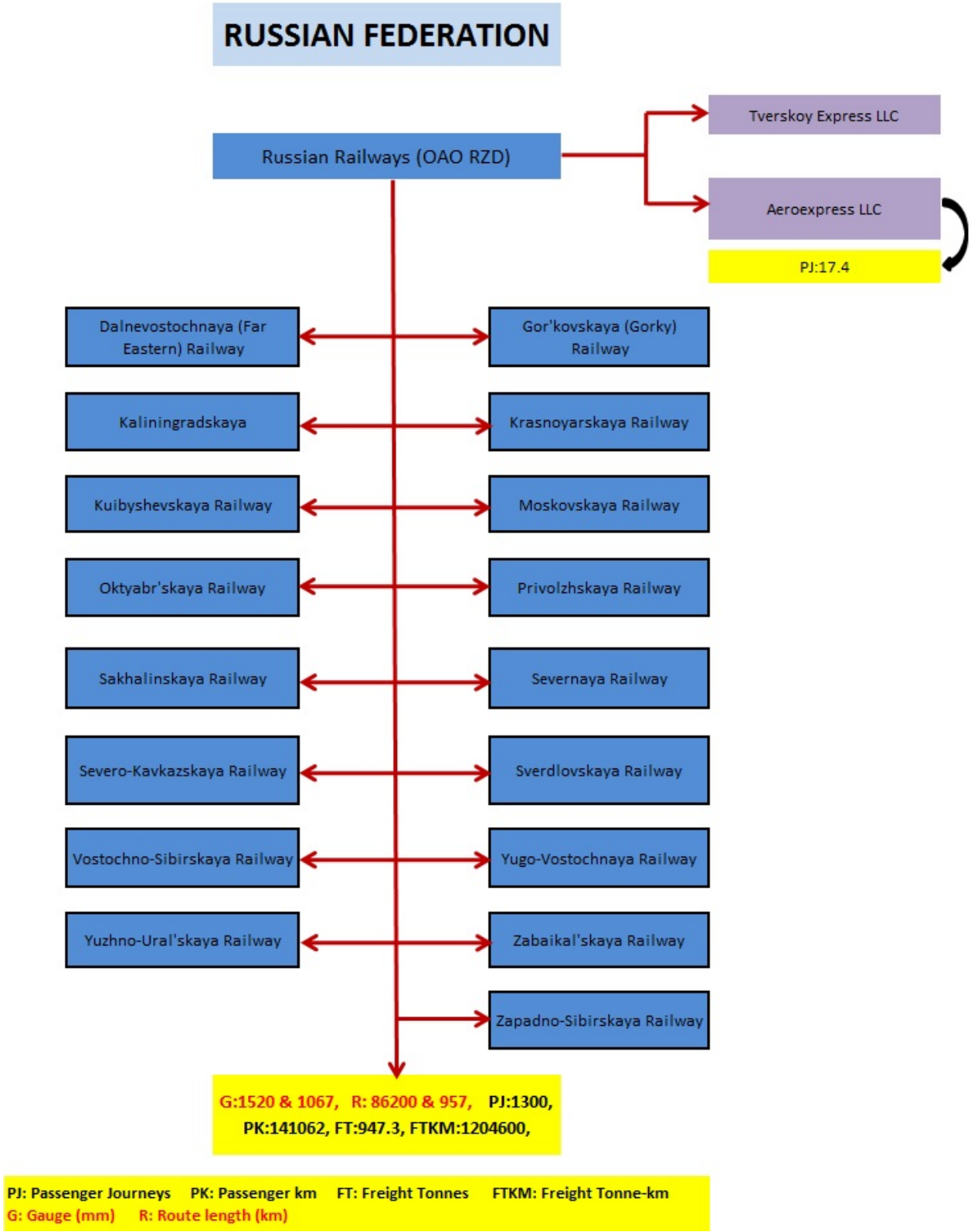
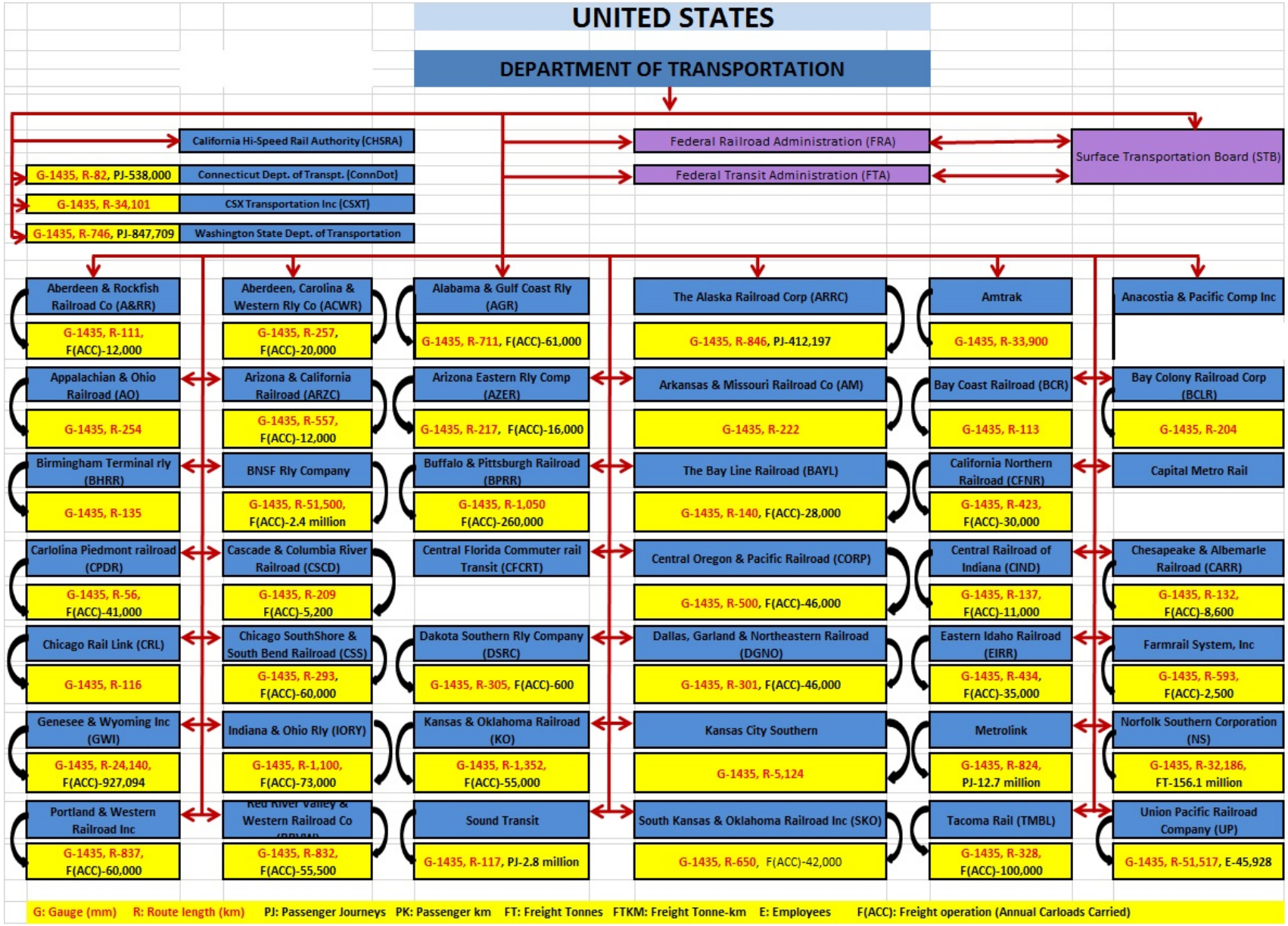
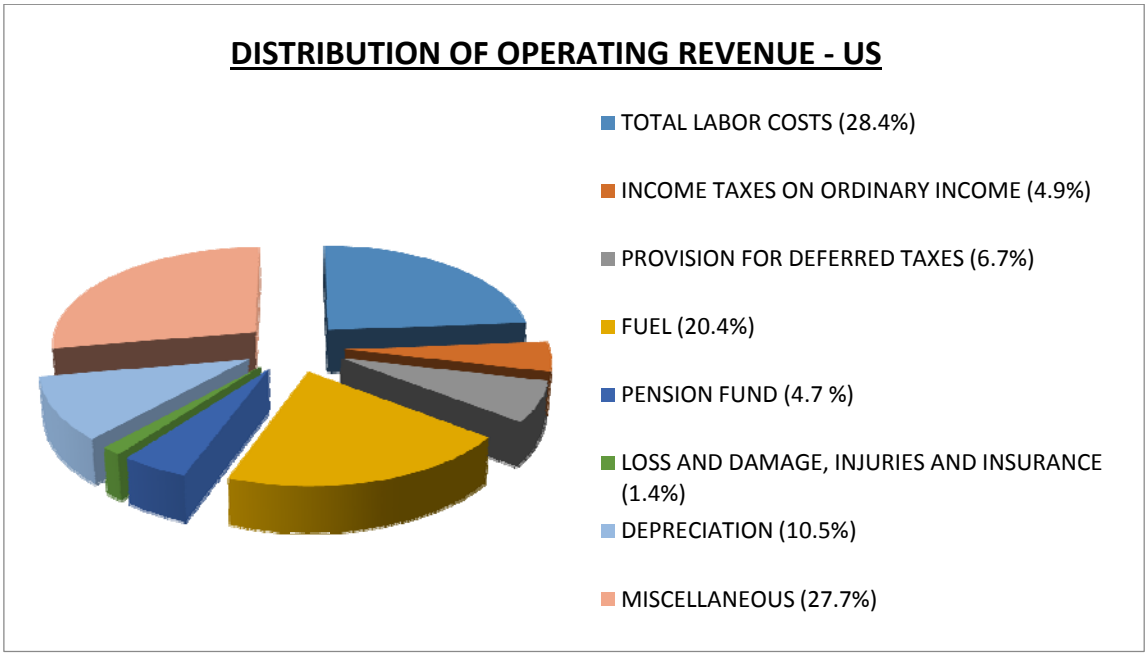
FT-3904, FTKM-2,918,709
PJ: Passenger Journeys PK: Passenger km FT: Freight Tonnes FTKM: Freight Tonne-km (All figures in millions) G: Gauge (mm) R: Route length (km)

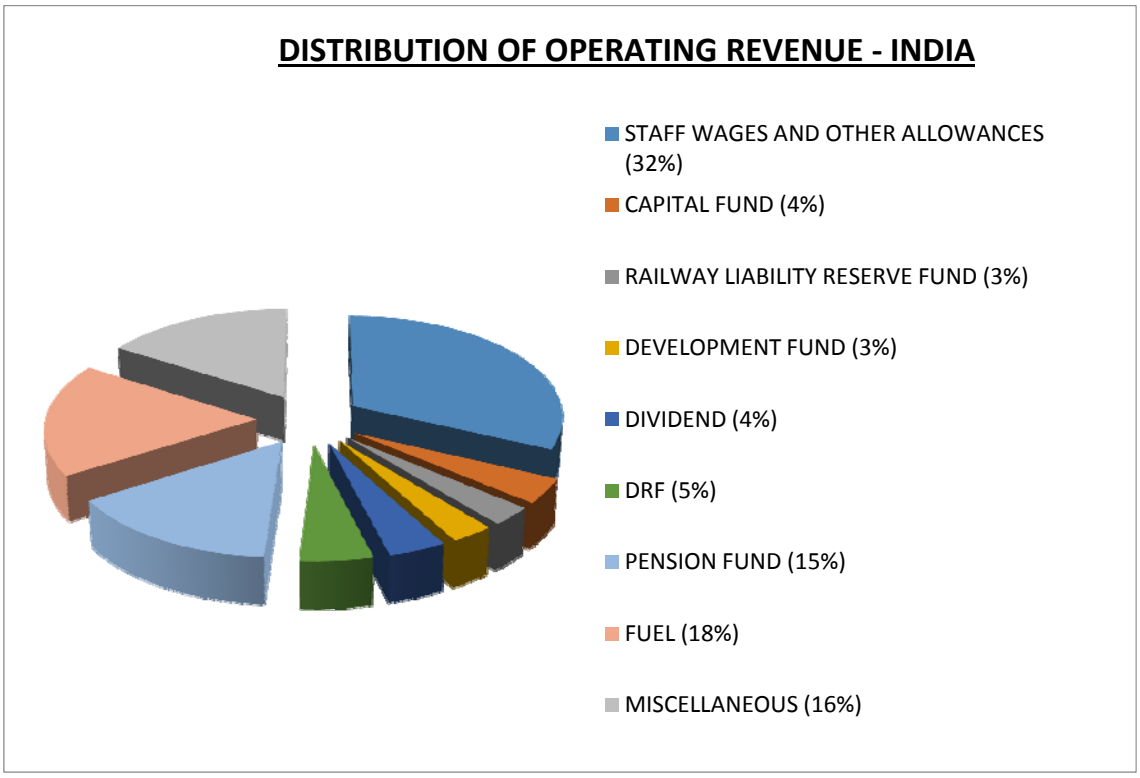

BANGLADESH
MINISTRY OF RAILWAYS
West Zone
East Zone
Bangladesh Railway Authority
PJ: 65.6, E :0.034, FT: 2.7, G: 1676 & 1000,
R: 659 & 1801
PJ: Passenger Journeys PK: Passenger km FT: Freight Tonnes FTKM: Freight Tonne-km
E: Employees (All figures in millions) G: Gauge (mm) R: Route length (km)


RUSSIAN FEDERATION
Russian Railways (OAO RZD)
Tverskoy Express LLC
Aeroexpress LLC
PJ:17.4
Dalnevostochnaya (Far Eastern) Railway
Gor'kovskaya (Gorky) Railway
Kaliningradskaya
Krasnoyarskaya Railway
Kuibyshevskaya Railway
Moskovskaya Railway
Oktyabr'skaya Railway
Privolzhskaya Railway
Sakhalinskaya Railway
Severnaya Railway
Severo-Kavkazskaya Railway
Sverdlovskaya Railway
Vostochno-Sibirskaya Railway
Yugo-Vostochnaya Railway
Yuzhno-Ural'skaya Railway
Zabaikal'skaya Railway
Zapadno-Sibirskaya Railway
G:1520 & 1067, R: 86200 & 957, PJ:1300,
PK:141062, FT:947.3, FTKM:1204600,
PJ: Passenger Journeys PK: Passenger km FT: Freight Tonnes FTKM: Freight Tonne-km
G: Gauge (mm) R: Route length (km)

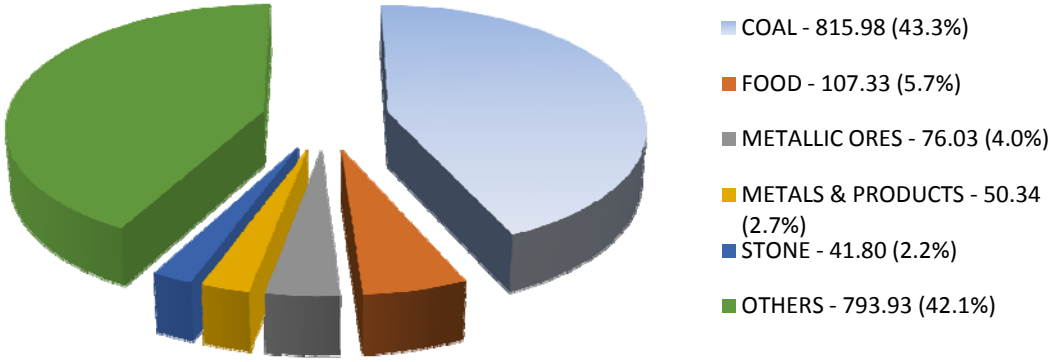

UNITED STATES
DEPARTMENT OF TRANSPORTATION
California Hi-Speed Rail Authority (CHSRA)
G-1435, R-82, PJ-538,000
Connecticut Dept. of Transpt. (ConnDot)
G-1435, R-34,101
CSX Transportation Inc (CSXT)
G-1435, R-746, PJ-847,709
Washington State Dept. of Transportation
Federal Railroad Administration (FRA)
Federal Transit Administration (FTA)
Surface Transportation Board (STB)
Aberdeen & Rockfish Railroad Co (A&RR)
G-1435, R-111, F(ACC)-12,000
Aberdeen, Carolina & Western Rly Co (ACWR)
G-1435, R-257, F(ACC)-20,000
Alabama & Gulf Coast Rly (AGR)
G-1435, R-711, F(ACC)-61,000
The Alaska Railroad Corp (ARRC)
G-1435, R-846, PJ-412,197
Amtrak
G-1435, R-33,900
Anacostia & Pacific Comp Inc
Appalachian & Ohio Railroad (AO)
G-1435, R-254
Arizona & California Railroad (ARZC)
G-1435, R-557, F(ACC)-12,000
Arizona Eastern Rly Comp (AZER)
G-1435, R-217, F(ACC)-16,000
Arkansas & Missouri Railroad Co (AM)
G-1435, R-222
Bay Coast Railroad (BCR)
G-1435, R-113
Bay Colony Railroad Corp (BCLR)
G-1435, R-204
Birmingham Terminal rly (BHRR)
G-1435, R-135
BNSF Rly Company
G-1435, R-51,500, F(ACC)-2.4 million
Buffalo & Pittsburgh Railroad (BPRR)
G-1435, R-1,050 F(ACC)-260,000
The Bay Line Railroad (BAYL)
G-1435, R-140, F(ACC)-28,000
California Northern Railroad (CFNR)
G-1435, R-423, F(ACC)-30,000
Capital Metro Rail
Carlolina Piedmont railroad (CPDR)
G-1435, R-56, F(ACC)-41,000
Cascade & Columbia River Railroad (CSCD)
G-1435, R-209 F(ACC)-5,200
Central Florida Commuter rail Transit (CFCRT)
Central Oregon & Pacific Railroad (CORP)
G-1435, R-500, F(ACC)-46,000
Central Railroad of Indiana (CIND)
G-1435, R-137, F(ACC)-11,000
Chesapeake & Albemarle Railroad (CARR)
G-1435, R-132, F(ACC)-8,600
Chicago Rail Link (CRL)
G-1435, R-116
Chicago SouthShore & South Bend Railroad (CSS)
G-1435, R-293, F(ACC)-60,000
Dakota Southern Rly Company (DSRC)
G-1435, R-305, F(ACC)-600
Dallas, Garland & Northeastern Railroad (DGNO)
G-1435, R-301, F(ACC)-46,000
Eastern Idaho Railroad (EIRR)
G-1435, R-434, F(ACC)-35,000
Farmrail System, Inc
G-1435, R-593, F(ACC)-2,500
Genesee & Wyoming Inc (GWI)
G-1435, R-24,140, F(ACC)-927,094
Indiana & Ohio Rly (IORY)
G-1435, R-1,100, F(ACC)-73,000
Kansas & Oklahoma Railroad (KO)
G-1435, R-1,352, F(ACC)-55,000
Kansas City Southern
G-1435, R-5,124
Metrolink
G-1435, R-824, PJ-12.7 million
Norfolk Southern Corporation (NS)
G-1435, R-32,186, FT-156.1 million
Portland & Western Railroad Inc
G-1435, R-837, F(ACC)-60,000
Red River Valley & Western Railroad Co
G-1435, R-832, F(ACC)-55,500
Sound Transit
G-1435, R-117, PJ-2.8 million
South Kansas & Oklahoma Railroad Inc (SKO)
G-1435, R-650, F(ACC)-42,000
Tacoma Rail (TMBL)
G-1435, R-328, F(ACC)-100,000
Union Pacific Railroad Company (UP)
G-1435, R-51,517, E-45,928
G: Gauge (mm) R: Route length (km) PJ: Passenger Journeys PK: Passenger km FT: Freight Tonnes FTKM: Freight Tonne-km E: Employees F(ACC): Freight operation (Annual Carloads Carried)

Annexure 4: Comparative Indicators – India and the United States

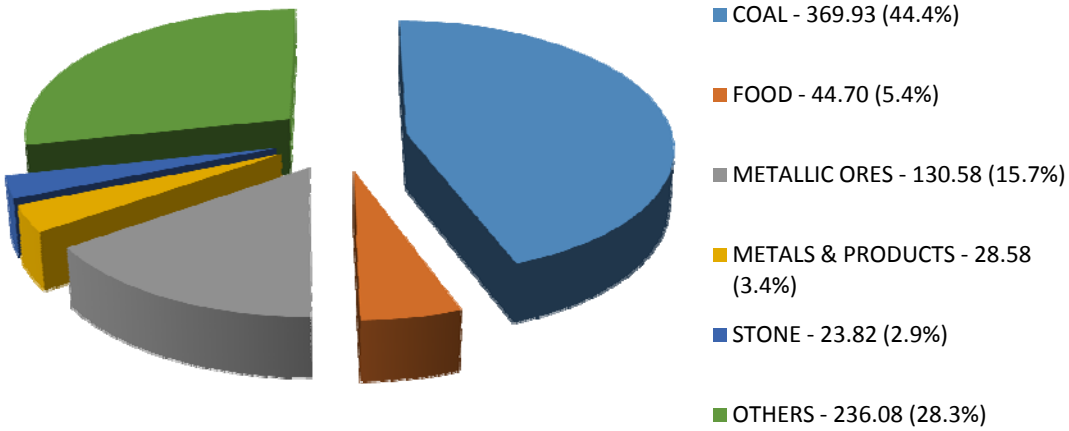


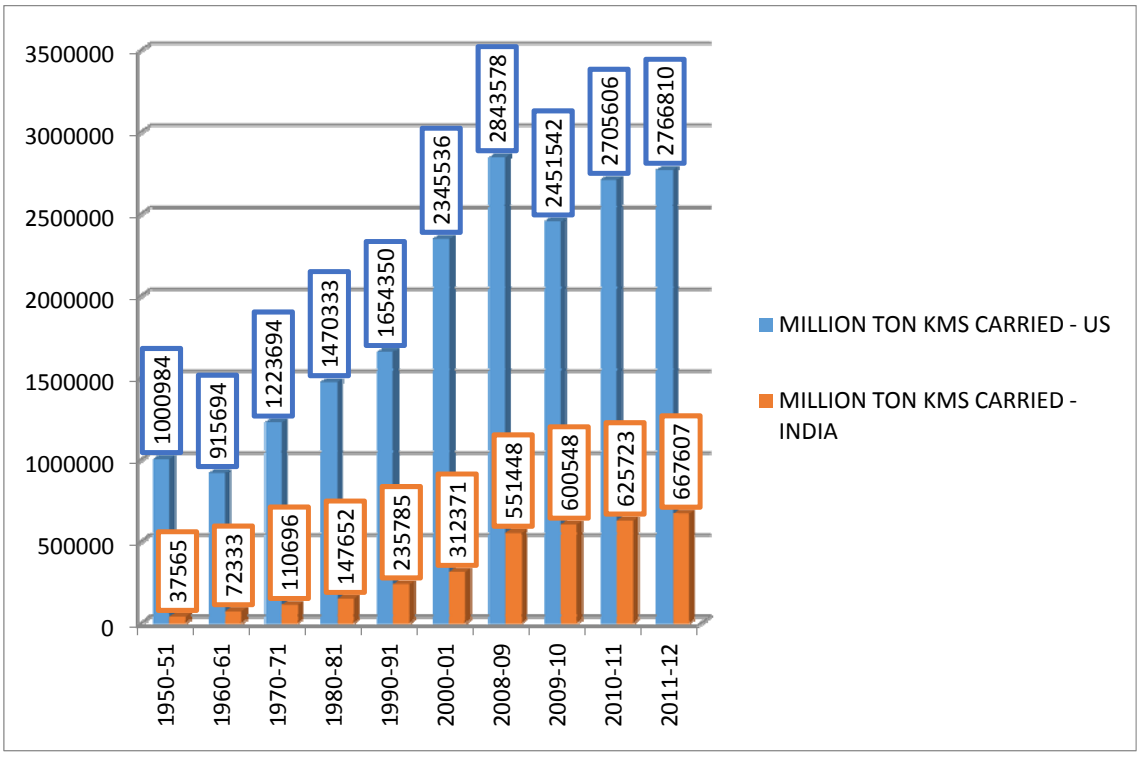


REVENUE EARNING COMMODITY WISE (MILLION TONNES) - US



REVENUE EARNING COMMODITY WISE (MILLION TONNES) - INDIA

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110696
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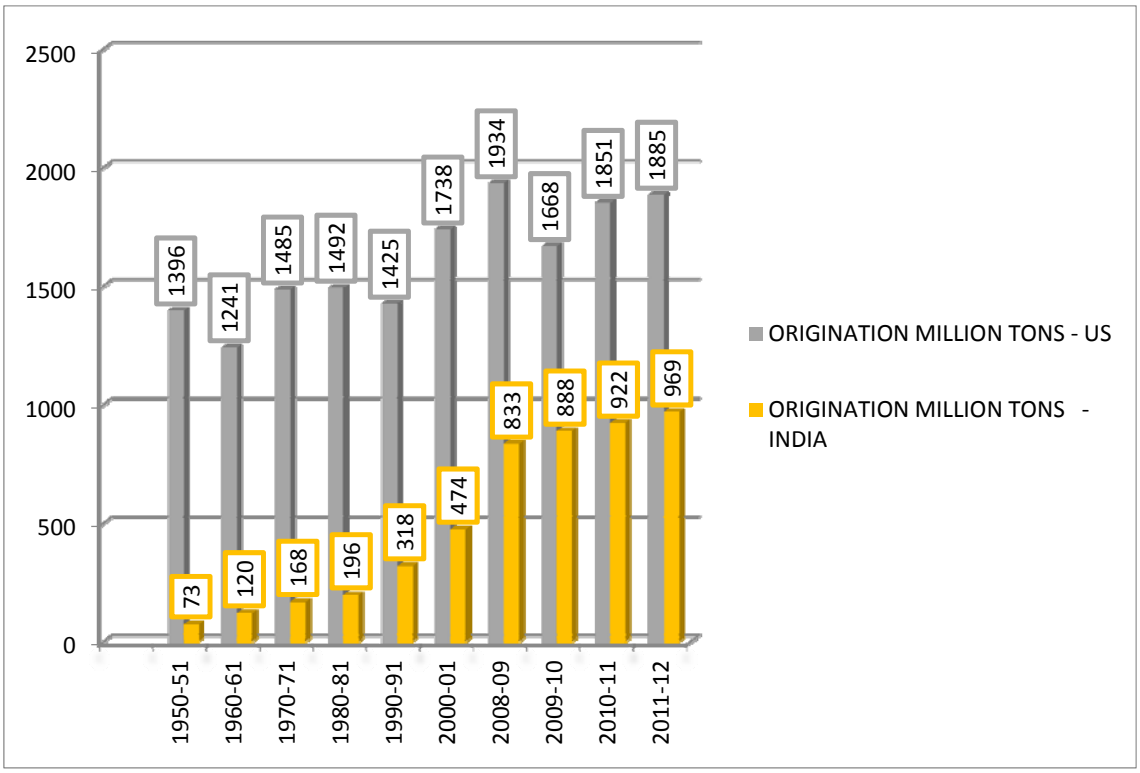
235785
312371
551448
600548
625723
667607
1950-51
1960-61
1970-71
1980-81
1990-91
2000-01
2008-09
2009-10
2010-11
2011-12
MILLION TON KMS CARRIED - US
MILLION TON KMS CARRIED - INDIA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1241
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1492
1425
1738
1934
1668
1851
1885
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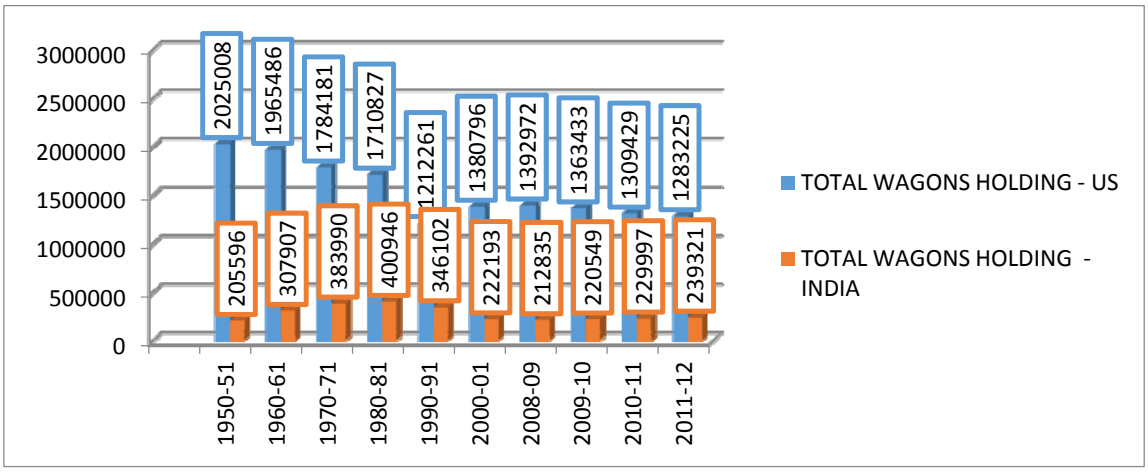
196
318
474
833
888
922
969
1950-51
1960-61
1970-71
1980-81
1990-91
2000-01
2008-09
2009-10
2010-11
2011-12
ORIGINATION MILLION TONS - US
ORIGINATION MILLION TONS - INDIA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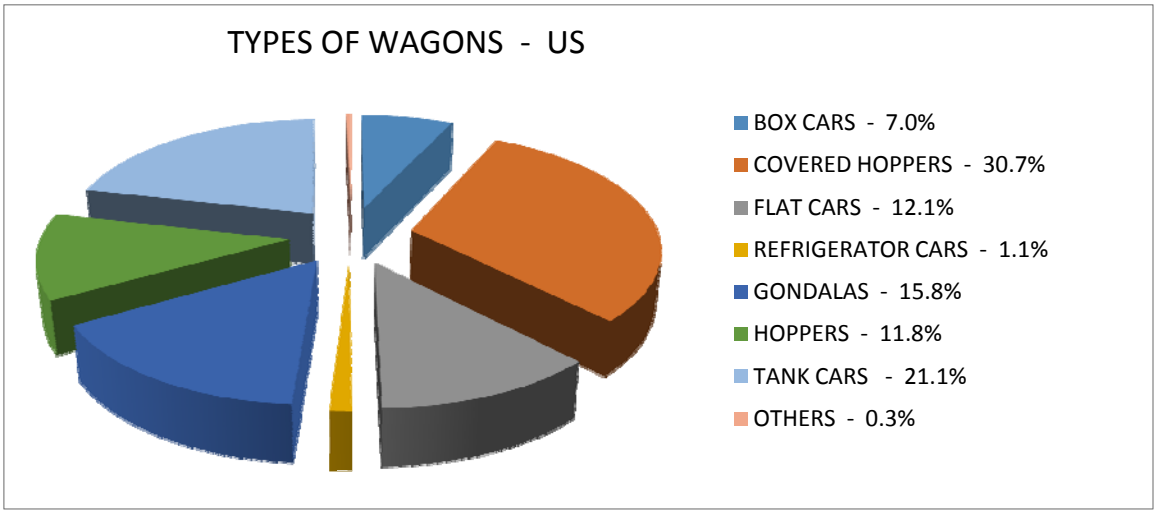
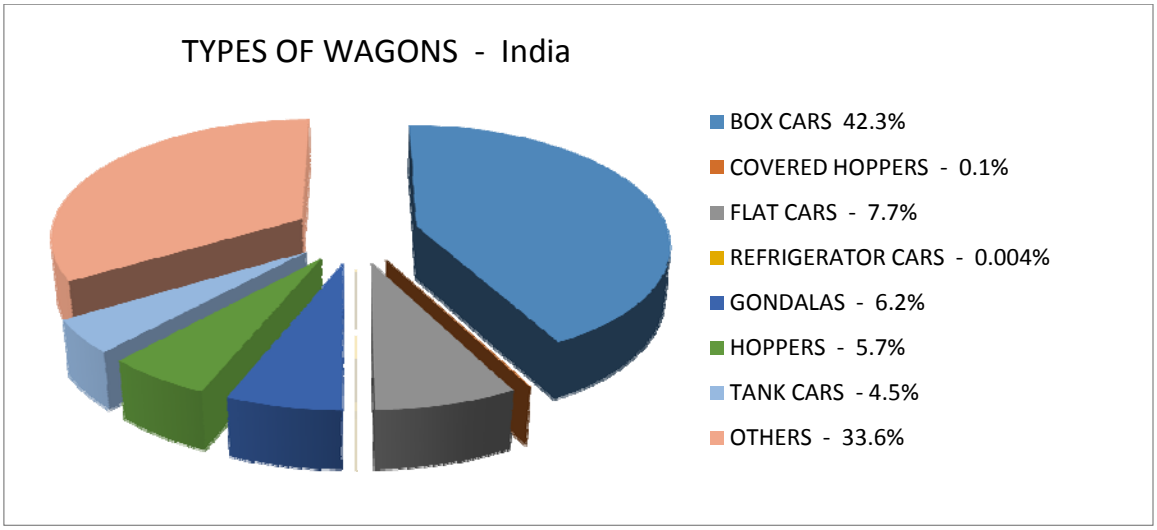
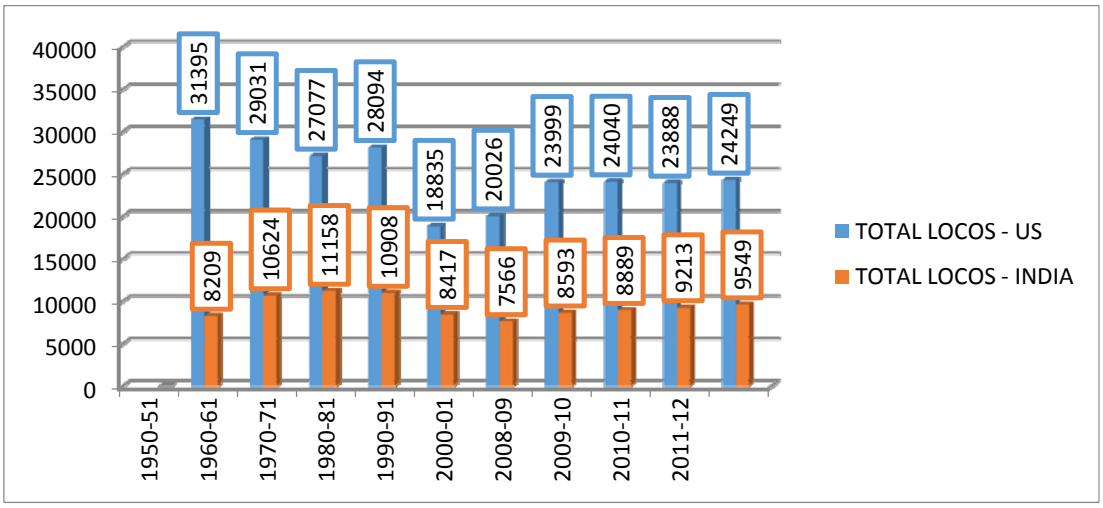
307907
383990
400946
346102
222193
212835
220549
229997
239321
1950-51
1960-61
1970-71
1980-81
1990-91
2000-01
2008-09
2009-10
2010-11
2011-12
TOTAL WAGONS HOLDING - US
TOTAL WAGONS HOLDING - INDIA


TYPES OF WAGONS - US
BOX CARS - 7.0%
COVERED HOPPERS - 30.7%
FLAT CARS - 12.1%
REFRIGERATOR CARS - 1.1%
GONDALAS - 15.8%
HOPPERS - 11.8%
TANK CARS - 21.1%
OTHERS - 0.3%


TYPES OF WAGONS - India
BOX CARS 42.3%
COVERED HOPPERS - 0.1%
FLAT CARS - 7.7%
REFRIGERATOR CARS - 0.004%
GONDALAS - 6.2%
HOPPERS - 5.7%
TANK CARS - 4.5%
OTHERS - 33.6%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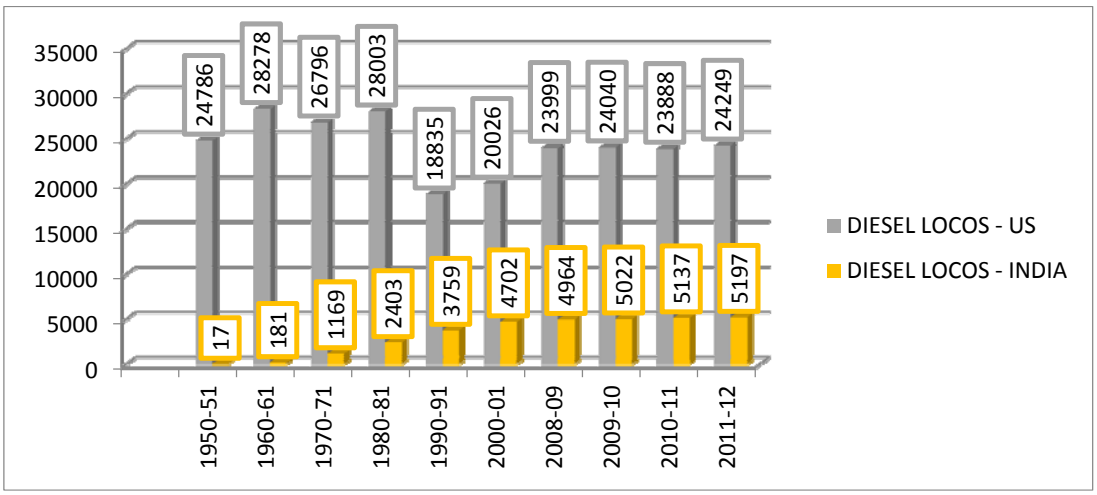
24249
8209
10624
11158
10908
8417
7566
8593
8889
9213
9549
1950-51
1960-61
1970-71
1980-81
1990-91
2000-01
2008-09
2009-10
2010-11
2011-12
TOTAL LOCOS - US
TOTAL LOCOS - INDIA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2403
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1950-51
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1970-71
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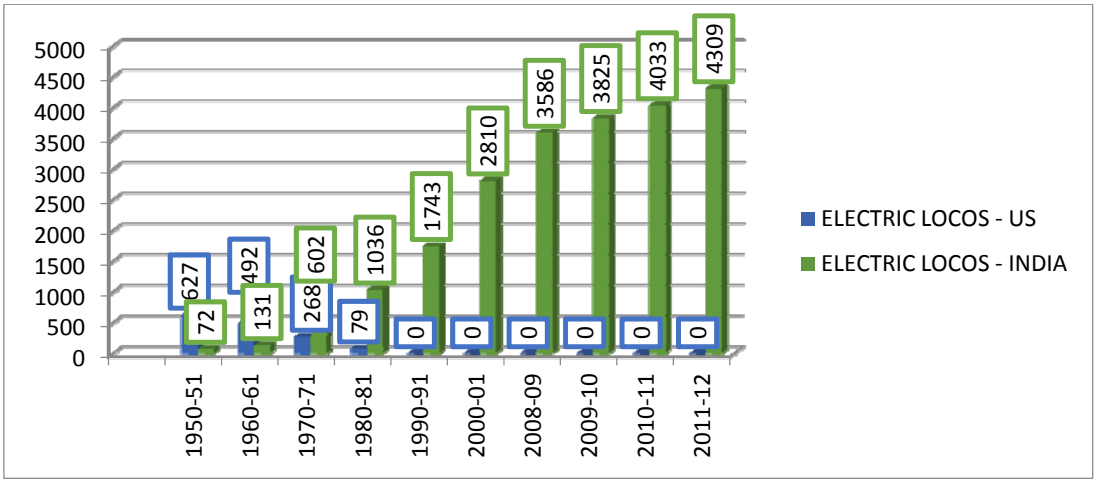
1990-91
2000-01
2008-09
2009-10
2010-11
2011-12
DIESEL LOCOS - US
DIESEL LOCOS - INDIA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131
602
79
0
0
0
0
0
0
1950-51
1960-61
1970-71
1980-81
1990-91
2000-01
2008-09
2009-10
2010-11
2011-12
ELECTRIC LOCOS - US
ELECTRIC LOCOS - INDIA

The Committee held meetings with the following Stakeholders:

S.No.	Officers/stakeholders	Date
1. 2. 3.	Shri Arunendra Kumar, Chairman, Railway Board Shri P.C. Gajbhiye, Secretary, Railway Board Shri P.S. Mishra, Executive Director/Corporate Coordination	17.10.14
4. 5.	Shri A. Madhu Kumar Reddy, EDPM/Rly. Board Smt. Achla Sinha, ED(S&E)/Rly. Board	27.10.14
6. 7. 8. 9. 10. 11. 12. 13. 14. 15.	Shri Rakhal Das Gupta, President, All India Railwaymen's Federation, AIRF Shri Shiva Gopal Mishra, Gen. Secretary, All India Railway men's Federation /AIRF Shri Guman Singh, President, National Federation of Indian Railway men, NFIR Dr. M. Raghavaiah, Gen. Secretary/National Federation of Indian Railwaymen, NFIR Shri Deepak Shelly, President, Indian Railway Promotee Officers Federation, IRPOF Shri Raman Kumar Sharma, Secy. Genl, IRPOF Shri R.K. Bhatnagar, Adv.(Elect.)/RB, President, Federation of Railway Officers Associaiton, FROA Sh. R.N.Singh, ED/Track(M)-Vice President/FROA Shri R.R. Prasad, ED/T(MPP), Secretary General, FROA Shri A.K. Panda, GM(Mech)/RVNL, Secretary, FROA	29.10.14
16. 17. 18. 19. 20.	Shri Amitabh Kant, Secretary, Department of Industrial Policy and Promotion Shri V.K. Agarwal, retired Chairman, Railway Board Shri R.C. Acharya, retired Member Mechanical, Railway Board Shri K.B. Verma, Retired Railway Officer Shri Yash Pal Kedia, Retired Railway Officer	30.10.14
21.	Shri Dinesh Trivedi, MP & Chairman, Standing Committee on Railways	1.11.14
22. 23. 24.	Visit to Mumbai and meeting with Shri Hemant Kumar, General Manager, Western Railway, along with PHoDs of Western Railway in Mumbai (PHoDs: AGM, SDGM, FA&CAO, CSO, CSC, CMD, CPO, CEE, CME, COM, CCM, CSTE, CPRO) Meeting with Mr Vivek Sahai former Chairman Railway Board Shri Shailendra Kumar, Divisional Railway Manager, Western Railway, along with divisional officers of Mumbai Division, followed by meeting with stakeholders like, ZRUCC/DRUCC/Railway Users, etc. (Divisional Officers: ADRM, Sr. DME, Sr. DEE, Sr. DFM, Sr. DAuO, Sr. DMM, Sr.	7.11.14

	DCM, Sr. DEN, Sr. DOM, Sr. DPO, Sr. DSC/RPF, Sr. DSO, Sr. DSTE, CMS)	
25. 26.	Visit to Mumbai and meeting with Shri Sunil Kumar Sood, General Manager, Central Railway, along with PHoDs of Central Railway in Mumbai (PHoDs: AGM, SDGM, FA&CAO, CSO, CSC, CMD, CPO, CEE, CME, COM, CCM, CSTE, CPRO) Divisional Railway Manager, Central Railway, Mumbai along with Divisional Officers of Mumbai Division Central Railways) (Divisional Officers: ADRM, Sr. DME, Sr. DEE, Sr. DFM, Sr. DMM, Sr. DCM, Sr. DEN, Sr. DOM, Sr. DPO, Sr. DSC/RPF, Sr. DSO, Sr. DSTE, CMS)	8.11.14
27. 28.	Shri Girish Pillai, Adviser(Infra), Railway Board, along with EDs Committee on FDI. (ED/Traffic/PPP, ED/Civil (Infra), ED(Finance)/PPP, ED/ME(Projects), ED/Signal(Development), ED/Elect. Engg.(Development), Representatives of NFIR and AIRF	10.11.14
29. 30.	Mrs R. Ravi Kumar, Financial Commissioner, Railways. NITTMAN, an Organisation for the differently abled.	14.11.14
31. 32.	Visit to Kolkata and meeting with Shri Radhey Shyam, General Manager, South Eastern Railway, along with PHoDs of South Eastern Railway in Kolkata (PHoDs: AGM, SDGM, FA&CAO, CSO, CSC, CMD, CPO, CEE, CME, COM, CCM, CSTE, CPRO) Presentation by Shri Radhey Shyam, looking after as GM/Metro Railway along with PHoDs of Metro Railway.	16.11.14
33. 34.	Visit to Kolkata and meeting with Shri R.K. Gupta, General Manager, Eastern Railway, along with PhoDs of Eastern Railway in Kolkata (PHoDs: AGM, SDGM, FA&CAO, CSO, CSC, CMD, CPO, CEE, CME, COM, CCM, CSTE, CPRO) Presentation by Divisional Railway Managers, Howrah and Sealdah Divisions along with their divisional Officers (Divisional Officers: ADRM, Sr. DME, Sr. DEE, Sr. DFM, Sr. DMM, Sr. DCM, Sr. DEN, Sr. DOM, Sr. DPO, Sr. DSC/RPF, Sr. DSO, Sr. DSTE, CMS)	17.11.14
35.	Visit to New Delhi PRS Centre and meeting with Chief Commercial Manager/Northern Railway, CCM(PM)NR and General Manager (PRS)/Centre for Railway Information System	18.11.14

<table>
<tr><td>36.</td><td>Visit to DLW, Varanasi and General Manager, Diesel Locomotive Works along with HODs in Varanasi

Shop Floor visit of the Factory

Representatives of Union of DLW workers.</td><td>25.11.14</td></tr>
<tr><td>37.</td><td>Committee of EDs on FDI, consisting of EDEE(Dev.), EDME(Proj.), EDF(PPP) and AM(PU), AME(Proj.)</td><td>27.11.14</td></tr>
<tr><td>38.

39.</td><td>S.P. Mahi & Team (CEO, I.R. Stations Development Corporation Ltd.

Mrs Ravi Kumar, F.C., Railways, Mrs Saroj Rajwade, Additional Member (Budget) & Mrs Dakshita Das, Executive Director (Budget)</td><td>3.12.14</td></tr>
<tr><td>40.

41.</td><td>Visit to Delhi Cantt. Railway Station for cleanliness drive under Swachh Bharat Abhiyan and meeting with Shri A K Sachan, DRM and Branch Officers of Delhi Division.

The Committee held discussions with Hon’ble MR, Shri Suresh K Prabhu, in Committee Room at 1430 hrs. in Committee Room, Rail Bhavan</td><td>8.12.14</td></tr>
<tr><td>42.

43.

44.</td><td>Director General /Railway Health Services

Director General/Railway Protection Force

Industry Representatives- CII, FICCI, PHD & ASSOCHAM

<u>CONFEDERATION OF INDIAN INDUSTRY (CII):</u>
<table>
<tr><td>1.</td><td>Shri Tilakraj Seth</td><td>Vice Chairman, Rail Transportation & Equipment Division, CII and Executive Vice President, Infrastructure & Cities, Siemens Limited</td></tr>
<tr><td>2.</td><td>Shri C P Sharma</td><td>Chairman & Managing Director, Daulatram Engineering Services Pvt. Ltd</td></tr>
<tr><td>3.</td><td>Shri Vishwas Moktali</td><td>Regional Director (Sub-Saharan Africa & India), EMD Locomotives</td></tr>
<tr><td>4.</td><td>Shri Nalin Jain</td><td>President & CEO, GE Transportation</td></tr>
<tr><td>5.</td><td>Shri Babu Khan</td><td>Senior Director, CII</td></tr>
<tr><td>6.</td><td>Shri Tuhin Chatterji</td><td>Director, CII</td></tr>
</table></td><td>9.12.14</td></tr>
</table>

FEDERATION OF INDIAN CHAMBERS OF COMMERCE & INDUSTRY (FICCI):

1.	Shri Sanjiv Rai	Managing Director and Chief Executive Officer, IL&FS Rail Limited
2.	Shri Manjeet Narwan	Vice President, Texmaco Rail & Engineering Limited
3.	Shri Sachin Bhanushali	President, Gateway Rail & Freight Ltd.
4.	Shri Saurabh Sood	Managing Director & Country Head, GATX India Private Limited
5.	Shri Harsh Dhingra	Chief Country Representative, Bombardier Transportation
6.	Dr. L.R. Thapar	Managing Director - Rail Operations, Hind Terminals Pvt. Ltd.
7.	Shri Abdul Salam	Deputy Director, FICCI

PHD CHAMBER OF COMMERCE & INDUSTRY (PHD):

1.	Shri Sandeep Aggarwal	Chairman, PHD Railways Committee
2.	Shri Yogesh Sriastav	Director, PHD Chamber

THE ASSOCIATED CHAMBERS OF COMMERCE & INDUSTRY OF INDIA (ASSOCHAM):

1.	Dr. A.K. Agarwal	Chairman, ASSOCHAM Rail Transport Committee
2.	Shri Ajay Sinha	Co-Chairman, ASSOCHAM Rail Transport Committee
3.	Shri Sajal Gupta	Sr. Member, ASSOCHAM Rail Transport Committee
4.	Shri Ashwani Kumar	Sr. Member, ASSOCHAM Rail Transport Committee
5.	Shri Tushar Pandey	Sr. Member, ASSOCHAM Rail Transport Committee

45. Shri Sandeep Silas, CCM (Ctg.), Northern Railway

46. Shri Arvind Gupta, Adviser IT (MoR)

47.	Adviser(Staff) , ED(T&MPP) & ED(E&R), Rly. Board	10.12.14
48.	Visit to Bangalore - Meeting with Mr Aggarwal DRM & divisional Officers of Bangalore Division (Divisional Officers: ADRM, Sr. DME, Sr. DEE, Sr. DFM, Sr. DMM, Sr. DCM, Sr. DEN, Sr. DOM, Sr. DPO, Sr. DSC/RPF, Sr. DSO, Sr. DSTE, CMS) Meeting With all HoDs (Chief Engineers, CSTE CEE and FA&CAO) of Construction Organisation Bangalore Visit to Bangalore Railway Station anfd meeting with Station Managers and supervisors Visit to Rail Wheel Factory, Yelahanka shop Floor	18.12.204
49.	Meeting with the Industry representatives: Shri Kunal Behl, CEO, Snapdeal Shri Saurabh Sood, CMD GATX India Dr. L.R. Thapar, MD Rail Operations Hind Terminals Shri Sachin Bhanushali, President, Gateway Rail & Freight Ltd. Shri Ajay S. Mittal, CMD Arshiya Ltd. Shri K K Agarwal, CMD, Darcl Logistics Ltd. Shri Ramakrishna Nagabhirava, GM, Container Rail Road Service Pvt. Ltd. Shri Vivek Sharma, COO, Adani Logistics Ltd.	23.12.14
50.	Audio-tele conferencing with Mr. John Swift, London, Britain's first Rail Regulator	3.1.15
51.	Meeting with A K Kathpal DRM and Divisional Officers of Ambala Division; And with Private Railway Tour Operators.	6 & 7.1.15
52.	Meeting with Mr. Masafumi Shukuri, Chairman of International High Speed Rail Association, Japan	3.2.15
53.	Meeting in SEBI with Institutional Financing Institutions	10.3.15