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# **Turnaround of Indian Railways 2004-06 A Case Study**

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## **ABSTRACT**

The railways have played a significant role in catalyzing the rapidity of economic development and continue to be an essential part of the growth engine of the Indian economy. In 2005-06, Indian Railways (IR) carried 15.68 million passengers and 1.83 million tones of freight traffic per day on a network spread over 63, 332 route kilometers. IR experienced financial difficulties in the 1990s, which hampered its growth and there were apprehensions on its capability to make available viable transport services in the future. This can be mainly attributed to the practice of considering railways as an indispensable public service. Under a tariff administration, where freight services repeatedly subsidized passenger services and with IR losing traffic to the roads progressively, a financial crisis always appeared impending within the Railways. IR, which was declared to be routing towards insolvency based on the recommendations put forth by the Expert Group on Indian Railways in 2001, is today the second largest profit making Public Sector Undertaking.

This study makes an attempt to find the factors that determined the growth of Indian Railways, the various strategies adopted to achieve the Turnaround and also suggests the way forward.



# Turnaround of Indian Railways 2004-06 A Case Study

## Section I

### 1.0 Introduction

Indian Railways (IR) is considered as the prime mover of the nation and has the distinct feature of being the largest railway system in Asia and the second largest railway system in the World under single management. The railways have played a significant role in catalyzing the rapidity of economic development and continue to be an essential part of the growth engine of the country. In 2005-06, IR carried 15.68 million passengers and 1.83 million tonnes of freight traffic per day on a network spread over 63, 332 route kilometers<sup>1</sup>.

IR draws up its Development Plans within the framework of National Five Year Plans. Investment in the transport sector, including the railways, was the main concern in the early phase of India's planned development. Plan wise outlays for IR and the transport sector beginning from First to Tenth Plan are given in table below.

In the First Five Year Plan, the emphasis was on rehabilitation and replacement of the over aged assets of railways. The emphasis during the Second Five Year Plan shifted to capacity augmentation to meet the requirements of new steel plants and increased coal production. The main objective of the Third Five Year Plan was to keep the rail transport capacity ahead of demand. Emphasis was on modernization of traction through dieselization and electrification. Improvements in signaling, track and rolling stock were also initiated. In the Fourth Five Year Plan, the emphasis on modernization was on further operational efficiency. Fifth Five Year Plan felt the need for

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<sup>1</sup> Indian Railways Year Book, 2005-06

the concept of rapid transit system in metropolitan towns. For the first time, the importance of financial viability was emphasized and this was to be achieved through improvements in efficiency, reduction in costs, and better utilization of assets. Increased emphasis on rehabilitation, replacement and renewals was continued in the Sixth and the Seventh Five Year Plans<sup>2</sup>.

**Table 1 Plan-Wise Outlays**

(Rs . in crores)

Sectors/ Units	First Plan 1951- 56	Second Plan 1956- 61	Third Plan 1961- 65	Fourth Plan 1969- 74*	Fifth Plan 1974- 78	Sixth Plan 1980- 85	Seventh Plan 1985- 90	Eighth Plan 1992- 97	Ninth Plan 1997- 02	Tenth Plan 2002- 07
Railways	267.07	896.50	890	1050	1523	6585	16549	32306	45725	60600
Transport Sector	571	1345	1486	3238	4078	13962	29548	65713	117563	225977
Total Plan Outlay	2378	4800	7500	15902	28991	109292	218729	485457	813998	1525639
Transport Sector as a % of Total Plan	24.01	28.02	19.81	20.36	14.1	12.8	13.5	13.4	14.4	14.8
Railways as a % of Total Plan	11.23	18.68	11.87	6.60	5.3	6.0	7.6	6.7	5.6	4.0

(Source: Indian Railways - Year Books (various issues) \*Plan holiday 1966-69)

The Eighth Plan objectives concentrated on the gains achieved during the Seventh Plan. It primarily focused on generating adequate capacity and completion of process of rehabilitation/replacement and renewal of over aged assets. An important decision was to adopt Unigauge policy on the IR. It was also planned to phase out Steam locomotives on Broad and Narrow Gauges. (Indian Railways, Year Book 1994-95). Indian Railways decided to meet this challenge with enhanced focus on thrust areas during the Ninth Plan period. It proposed to generate adequate rail transport capacity for managing growing freight and passenger traffic with exceptional emphasis on development of terminals. It continued the emphasis on completion of the process of rehabilitation, substitution and regeneration of over aged assets. Modernization and up gradation of the rail transport

<sup>2</sup> Indian Railway Books – Various Issues

system was given major impetus to decrease costs and improve consistency, safety and superiority of service to the customers. The policy of unigauge was given high importance. The Railways proposed for the introduction of higher Horse Power electric and diesel locomotives. It laid special emphasis on the improvement of man-power productivity, work culture and staff morale. As far as the Tenth Five Year Plan is concerned, the objectives are as follows:

- In order to strengthen high density net work, investment towards building up capacity through National Rail Vikas Yojana for national projects and investment towards completion of sanctioned rail projects
- Technological up gradation of assets to improve efficiency, throughput and also to increase the average speed of trains
- To utilize information technology for better customer interface.
- To mobilize additional resources with the help of private and public participation in railway projects.
- Increase the share of freight and passenger traffic

In terms of revenue performance, the railways enjoyed fairly satisfactory results during the first three plan periods. But, in the twenty years that followed, it defaulted a number of times on payment of dividend to general revenues and resorted to loans from general revenues for the Development Fund which is used for unremunerative but essential works, passenger amenities and staff welfare. The Sixth Plan Period was particularly disappointing for the huge size of the loss that occurred as well as the highest ever-operating ratio of 96.3 percent. In the Seventh Plan Period, freight output in ton-kms increased from 173.6 billion to 229.6 billion, primarily on account of the long haul movement of bulk goods in block rakes. At the same time, there was reasonably balanced increase of tariffs of both passenger and freight traffic. The year 1989-90 was important for the increased level of freight tariff. Indeed, very good financial results were achieved, the outstanding dues to the general revenues in the Deferred Dividend Liability account and the loans taken for the development fund were washed out, and balances in the railway funds increased and the operating ratio came down well below the figures in the Seventh Plan

Period<sup>3</sup>. The Eighth Plan further strengthened the achievements registered in the previous plans, in particular, the Seventh Five Year Plan. Looking at the diminishing budgetary support over the plan periods and complexity in increasing internal generation of resources ahead of a certain limit, primarily owing to ever increasing Indian Railways Finance Corporation (IRFC) lease charges and government control over the tariff structure, the railways have adopted a number of initiatives to finance its activities. Implementation of these initiatives started in the Ninth Five Year Plan.

The Ninth Plan reflects a turbulent phase of finances on Indian Railways. The first year, 1997-98 witnessed the implementation of Fifth Pay Commission recommendations. This has increased the staff costs by a third. In the subsequent year, the freight traffic registered 29 million tons below target, which also happens to be nine million below the previous year's loading. Thus, IR experienced financial difficulties in the 1990s, which hampered its growth and there were apprehensions on its capability to make available viable transport services in the future. This can be mainly attributed to the practice of considering railways as an indispensable public service. Under a tariff administration, where freight services repeatedly subsidized passenger services and with IR losing traffic to the roads progressively, a financial crisis always appeared impending within the Railways. IR, which was declared to be routing towards insolvency based on the recommendations put forth by the Expert Group on Indian Railways in 2001, is today the second largest profit making Public Sector Undertaking<sup>4</sup>.

The increased efficiency of railways otherwise termed as 'Turnaround' by the railway administration has been initiated by uncomplicated entrepreneurial practices, which have induced the appreciation of worldwide prominent institutions and corporations similarly. In a discernible exodus from its inheritance, the focus on capacity utilization, reduction in unit costs, and improvement quality of service has capitulated noteworthy domino effects. The Railways now aim to achieve the declared target of INR 20,000 Crore surplus revenue in the financial year 2006-2007<sup>5</sup>. With

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<sup>3</sup> Indian Railway Books - Various Issues

<sup>4</sup> Raghuram 2007

<sup>5</sup> International Railway Conference, 2007

the increased confidence, the total investment being planned for the period 2007-2015 is around the tune of Rs.350, 000 crore.

The Union Minister for Railways, Sri Lalu Prasad Yadav, while presenting the Railway Budget for 2006-07 said that the above cited increased efficiency of the railways is attributed to the increase in quality of service, reducing unit cost and distributing ensuing gains with customers. In his maiden budget speech, he moved away from the traditional conduit and announced reduction in AC First and Second Class fares along with no increase in passenger and freight rates.

Many of us have no idea about how affluent the Railway system in India is in terms of its assets - land, the permanent way (the tracks), the station infrastructure and station buildings, the rolling stock (locomotives, coaches and wagons). What the Railway Minister did was to chart exploitation of the railway assets to their best possible level and thus successfully use them for the benefit of the society

The 'turnaround' which had its beginning in 2004-05 continued well into 2006-07. The Indian Railways have performed exceptionally well in the first nine months of the financial year 2006-07. The growth in freight loading increased by 10 percent while that of freight revenues increased by 17 per cent. Based on this performance in the freight business, freight-loading target therefore is being increased from 635 million tonnes (MT) to 668 million tonnes and the goods revenue target from Rs.33480 crore to Rs.36490 crore. The Tenth Plan targets of 624 MT loading and 396 Billion tonne kilometers have been surpassed one year in advance. The incremental target of 63 Billion tonne kilometers for freight loading for the Tenth Plan will exceed by over 200 per cent. Further, the Railway Budget 2007-08 projected the freight-loading target as 785 million tones. Likewise, there has been an improvement in the passenger services provided by the railways.

Against this background, the paper is organized as follows: Section II provides the estimates of total earnings and total working expenses of the Indian Railways, net revenue, dividends and the operating ratio. Section III focuses on the freight transportation, earnings and the strategies adopted

by the railways to improve the freight operations. Section IV and V deal with passenger operations and earnings from other services respectively. Section VI suggests the way forward.

## **Section II**

In order to see whether there is 'turnaround' of Indian Railways, it becomes highly essential to look into the total earnings and total working expenses. Turnaround is also established by taking into consideration the operating ratio.

This section focuses on the earnings and expenses incurred by the railways during the period 2004-06 and also look into the trends of net revenue and dividends. Table 2 clearly shows that during the period 2001-2006, the total earnings are more than the total working expenses and this difference is high especially during the period 2005-06, in other words, while the total earnings stood at Rs 54,404 crores, the total working expenses were to the tune of Rs. 45,573 crores. The percentage increase shows that the total earnings increased by around 16% in the year 2005-06 as compared to the previous year while the total working expenses increased by 7% in the same year as compared to the previous year.

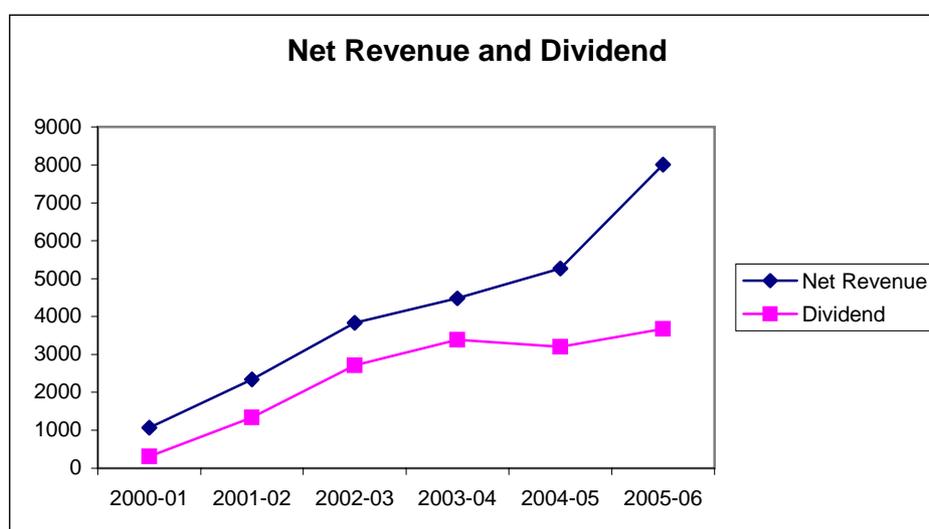
The increase in total earnings resulted in an increase in net revenues during the period under study. The gap between net revenue and dividend is large during 2004-06 (Figure 1).

**Table 2 Total Earnings and Total Working Expenses**

Year	Total Earnings	Percentage increase	Total Working Expenses	Percentage increase
2000-01	35287.58		34667.34	
2001-02	37858.54	7.3	36293.21	4.7
2002-03	41147.73	8.7	38025.75	4.8
2003-04	42842.16	4.1	39482.21	3.8
2004-05	47038.25	9.8	42758.88	8.3
2005-06	54404.56	15.7	45573.53	6.6

Source: Annual Report and Accounts; Year Books (Various Issues)

**Figure 1**

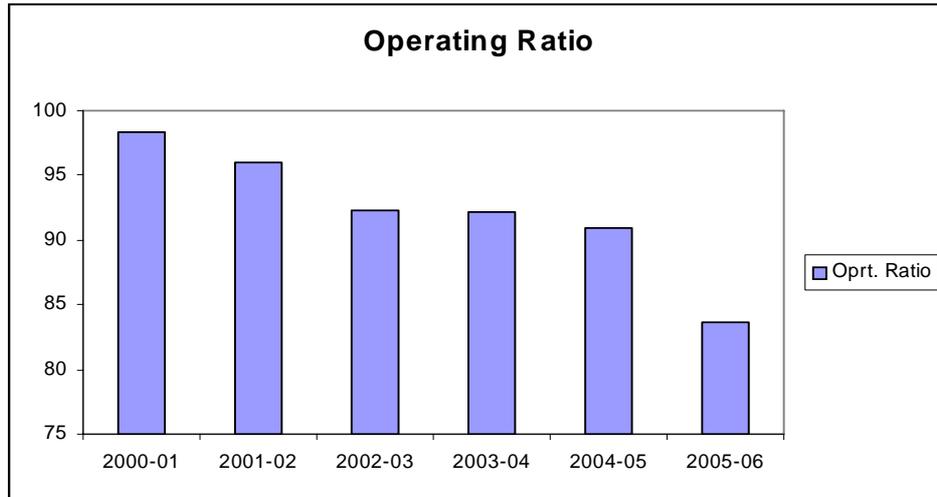


Having looked into the earnings and expenses of IR, we will now look into the 'Operating Ratio'<sup>6</sup> which is another indicator reflecting the efficiency of IR. This ratio, which was as high as 98% in 2000-01, declined to 84% in 2005-06, reflecting the growth of IR<sup>7</sup>. The decline in operating ratio was more during the period 2004-06; it was around 91% in 2004-05 and nearly 84% in 2005-06 (Figure 2). The provisional estimates of operating ratio in 2006-07 stand at 78.7%.

<sup>6</sup> Ratio of total working expenses to net revenue

<sup>7</sup> Sudhir 2005

**Figure 2**



From the above discussion it can be concluded that increased performance of Indian Railways can be basically attributed to (i) increase in total earnings (ii) increase in net revenues and (iii) decline in the operating ratio.

Against this background the study makes an attempt to explore the factors that contributed to the growing performance of Indian Railways and the various strategies adopted. The increase in earnings is due to increase in the earnings of freight operations, passenger movements and other earnings which includes parcel services, advertisements and catering activities. Freight earnings recorded an increase of 17% during 2005-06, while that of passenger earnings by 7%. Other services including catering, parcel and advertising recorded an increase of 24%. In the ensuing sections, an attempt is made to discuss each of the above determining factors that contributed to the growth of Indian Railways.

### **Section III**

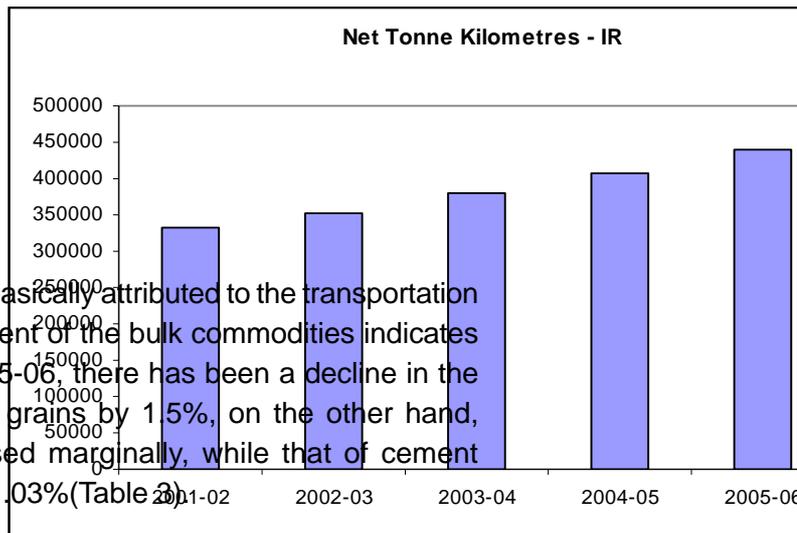
#### **3.0 Freight Operations**

The provisional estimates of total earnings for the year 2006-07 show that freight earnings increased by 18%. By the end of the financial year 2006-07, the freight loading achieved the target of 726 million tonnes and Railway

Minister is very much convinced that the target of 785 million tonnes he set for loading in the Railway Budget for 2007-08 would be satisfied<sup>8</sup>.

In 2005-06, IR loaded a record tonnage of 666.51 million tones of revenue earning traffic, out of which 439.60 is billion net tonne kilometers (NTKM)<sup>9</sup> of the freight output. In 2006-07, IR loaded a record tonnage of 728.41 million tonnes of revenue earning traffic, out of which 475.05 are billion NTKM (Provisional Estimates). Figure 3 demonstrates how NTKM grew over the years.

**Figure 3**



The growth in net tonne kilometres is basically attributed to the transportation of goods by Indian Railways. Movement of the bulk commodities indicates that during the years 2004-05 to 2005-06, there has been a decline in the movement of coal by 0.9%, in food grains by 1.5%, on the other hand, movement of iron and steel increased marginally, while that of cement increased by 0.25% and iron ore by 1.03% (Table 3).

<sup>8</sup> Rail Budget 2006-07

<sup>9</sup> NTKM is defined as the number of tones of freight carried multiplied by the average distance over which it is transported

**Table 3 - Movement of Bulk Commodities (Percentages)**

Commodity	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Coal	47.24	46.67	45.47	45.16	45.07	44.15
Food grains	5.63	6.66	8.79	7.95	7.73	6.25
Iron & Steel	2.95	2.94	3.10	3.47	3.05	3.27
Iron ore	12.94	13.09	13.65	15.26	15.99	17.02
Cement	9.06	8.94	8.92	8.83	8.93	9.18
POL	7.64	7.23	6.56	5.65	5.31	5.02
Fertilisers	5.71	5.52	5.10	4.26	4.78	4.90
Limestone, Dolomite	1.94	1.88	1.75	1.96	1.66	1.79
Stones	1.27	1.06	1.17	1.31	1.70	1.92
Salt	1.03	1.06	0.61	0.68	0.69	0.70
Sugar	0.54	0.47	0.45	0.50	0.35	0.42
Other Commodities	4.05	4.48	4.43	4.97	4.74	5.38

Source: Annual Report and Accounts; Year Books (Various Issues)

Though the movement of the bulk commodities does not present an encouraging picture, the loading of some of the bulk commodities registered an increase (Table 3) leading to increase in the earnings (figure 4). From table 4, it is clear that coal loading increased by nearly 8% from 271.40 million tonnes in 2004-05 to 294.25 million tonnes in 2005-06. Iron and steel by 16%, iron ore by 13% and cement by nearly 14%.

**Table 4 - Commodity wise Loading (Million Tonnes)**

Commodities	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Variation (%) (2004-05, 2005-06)
Coal	223.69	229.82	235.85	251.75	271.4	294.25	8.42
Foodgrains	26.65	32.82	45.6	44.32	46.52	41.64	-10.49
Cement	42.9	44.04	46.25	49.25	53.77	61.19	13.80
Iron ore	14.56	15.72	16.66	26.64	36.41	41.24	13.27
Iron & Steel	11.91	12.36	13.63	14.66	15.24	17.74	16.40

Source: Annual Report and Accounts; Year Books (Various Issues)

Figure 4 provides the commodity wise earnings. From the figure, it is clear that all the commodities except food grains registered an increase in earnings. The variation over previous year (2005-06 vs. 2004-05) shows that earnings of iron and steel increased by Rs. 1863 crores and that of coal by Rs 1299 crores during the study period. The increase in earnings is largely due to the increase in loading of the bulk commodities.

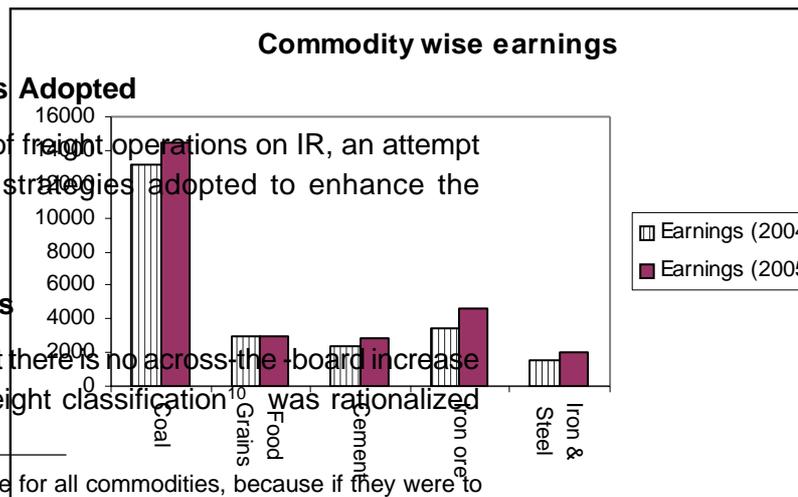
**Figure 4**

### 3.1 Freight Operations - Strategies Adopted

Having looked into the performance of freight operations on IR, an attempt is now made to study the various strategies adopted to enhance the performance of freight operations.

#### 3.1.1 Classification of Commodities

The case of freight services shows that there is no across-the-board increase in freight rates. Nevertheless, the freight classification was rationalized



<sup>10</sup> The railways do not charge the same rate for all commodities, because if they were to charge the same rate from all the commodities only highly valued commodities will be able to move over longer distances and commodities with very low intrinsic value will not be able to move by rail. Accordingly, all these commodities have been divided into being charged at different rates. This grouping of commodities is known as classification of goods. The rate for all the classes is derived from one common base scale. Class 100 is the base scale and all the classes from Class 80 to class 300 are percentages of the base scale i.e. class 100

and the classes in 'fives' like 95, 105, 135, 145, 155, 165, 175 and 185 were abolished. The highest class was reduced from 'Class 250' to 'Class 240'. Further, freight classification was accorded a uniform interval of 'Tens' between the successive classes from Class 90 to Class 240. Commodities that cannot be categorized into any one of the major commodity heads, and the dangerous/hazardous commodities were to be charged at the highest Class-240.

No commodity was charged for a weight that is less than the carrying capacity of the wagon (Year Book 2005-06). As far as certain selected light-weight commodities are concerned three new special classes were introduced below Class 90 (Class 90W<sub>1</sub>, Class 90W<sub>2</sub>, Class 90W<sub>3</sub>)

Railway's fare policy is generally based on "what the traffic can bear". In other words, the transport cost should not be more than the production cost of a commodity. The transport cost must be reasonable enough, so that the produced goods can be distributed in a widely spread market. Railways shoulders responsibility of keeping the price of essential commodities at a reasonable rate, be it a liquid or a solid good, for the benefit of both consumers and producers. Thus, the rationalized fare and freight structure of Indian Railways framed during the year 2005-06 attracted millions of passengers to use "this mode of transport".

### **3.1.2 Wagon Loading, Average Freight Train Speed, Average Loading**

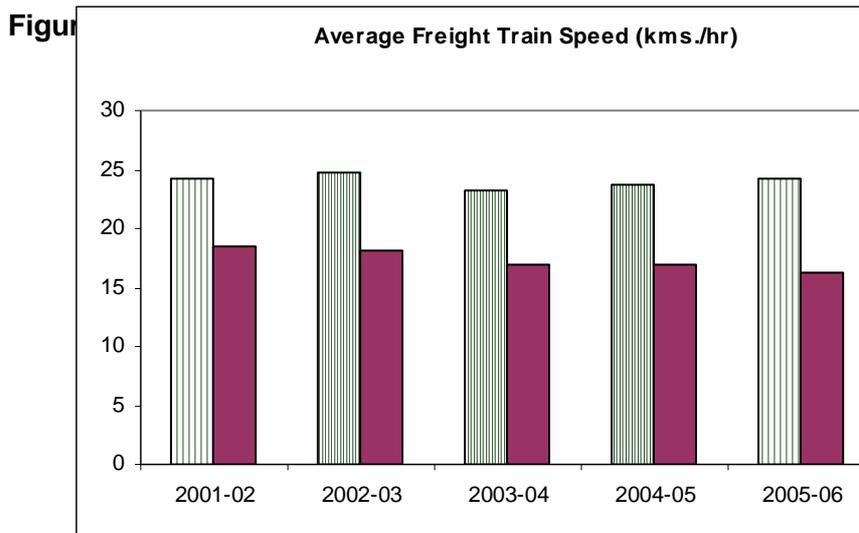
The railways aimed at productivity enhancement by increasing the wagon loading capacity and by reducing the wagon turn round time. In 2005-06, on an average, a wagon moved 211.2 kms. per day on Broad Gauge (BG) as against 204.4 kms per day on BG in 2004-05. NTKMs per wagon per day on BG stood at 2872. NTKMs per annum per tonne of wagon capacity on BG and Metre Gauge (MG) were 46,834 and 7,107 in 2005-06 when compared to 43718 NTKM in BG and 6620 NTKM in MG (Table 5). On the other hand, wagon kms per wagon per day on MG registered a decline from 36.5 km in 2004-05 to 32 in 2005-06. Similar trends are observed in the case of NTKM per wagon per day on BG and MG tracks (Table 5).

**Table 5 Net Tonne Kilometres, Wagon Kilometres (In terms of 4-Wheelers)**

Year	NTKM per ton of wagon capacity per annum BG	NTKM per ton of wagon cap.p a MG	Wagon Kms. per wagon per day BG	Wagon Kms. per wagon per day MG	NTKM per wagon per day BG	NTKM per wagon per day MG
2000-01	33289	7981	179.0	43.8	2042	394
2001-02	36239	8933	191.6	51.7	2223	441
2002-03	40341	7790	204.6	52.6	2468	369
2003-04	42322	7103	187.8	45.0	2574	321
2004-05	43718	6620	204.4	36.5	2677	300
2005-06	46384	7107	211.2	32.0	2872	324

Source: Year Books, Various Issues

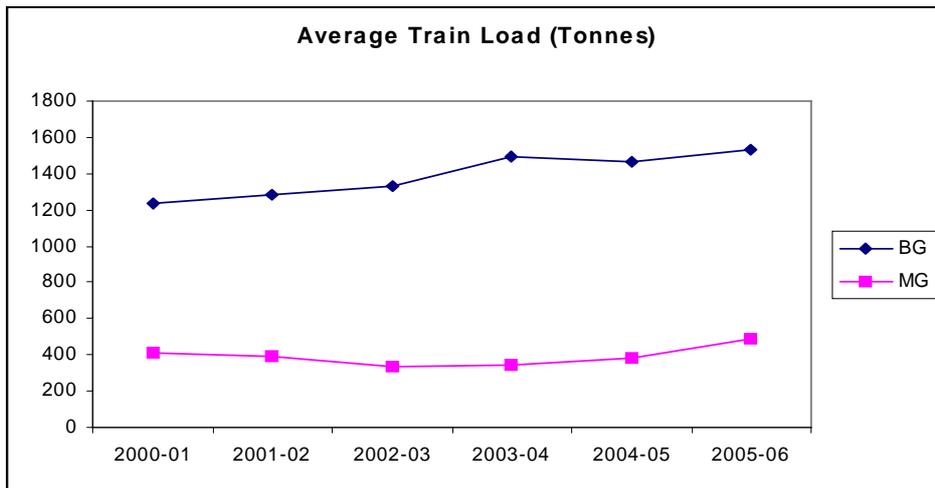
The turn round time of wagons, which represents average time lag between two successive loadings decreased from 6.4 days in 2004-05 to 6.1 days in 2005-06 on BG<sup>11</sup>. Likewise, in 2005-06, the average speed of goods trains was 24.2 kmph on BG as against 23.8 in 2004-05 and 16.3 kmph on MG in 2005-06 when compared to 16.9 kmph in 2004-05 (Figure 5).



<sup>11</sup> Annual Statistical Statements 2004-05, 2005-06

Average net load per train increased from 1466 tonnes in 2004-05 to 1529 tonnes in 2005-06 on Broad Gauge and from 386 tonnes to 489 tonnes on Metre Gauge (Figure 6).

**Figure 6**



All the above strategies translated into excess freight carrying capacity of the Indian Railways.

### 3.1.3 Asset Utilization

Another reason for increase in the freight earnings is due to the proper utilization of assets by the railways, in other words, there is an increase in the number of diesel and electric engines on the Broad Gauge track facilitating high and fast movement of bulk commodities. For example, the number of diesel engines on BG increased from 368 in 2004-05 to 376 in 2005-06, while the number of electric engines increased from 430 to 449 on BG track. Likewise, proper utilization of track resulted in the increase in the density of traffic on BG in terms of NTKM as reflected in the following table.

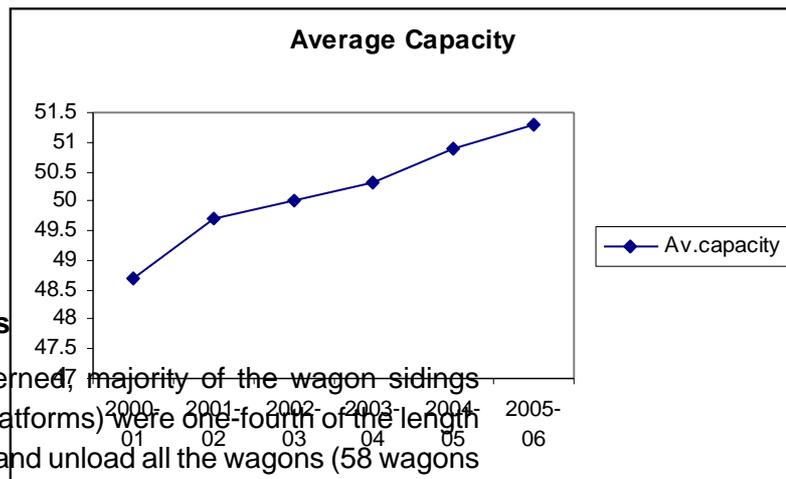
**Table 6 Net Tonne Kilometres Per Route Kilometre**

Year	BG	MG
2002-03	7.74	0.19
2003-04	8.14	0.23
2004-05	8.57	0.17
2005-06	9.05	0.16

Source: Annual Report and Accounts; Year Books (Various Issues)

The asset utilization also resulted in the increase in the carrying capacity per wagon on broad gauge (Figure 7). The average capacity on BG increased from 50.0 tonnes in 2004-05 to 51.3 tonnes in 2005-06.

**Figure 7**



### 3.1.4 Easing away the Siding Rules

As far as the wagon siding is concerned, majority of the wagon sidings (which are equivalent to passenger platforms) were one-fourth of the length of the trains, making it difficult to load and unload all the wagons (58 wagons per train). To cope with the above difficulty of simultaneously loading and unloading of the wagons, IR extended all its sidings to a length of 650 m, which is incidentally the length of the train with 58 wagons. In addition, IR liberalized the siding rules, like, reviving the concept of assisted siding. Under this concept, IR will share the cost of a new siding in case any industry is ready to have a long-term assurance of traffic for 10 years or more, matching

with the investment by IR. If the siding premises belong to the private customer, the entire expenditure is to be borne by him. With respect to the portion between the railway stations to the gate of the customer's premises, the cost of sub-structures, which can be dismantled, will be borne by the IR<sup>12</sup>.

Before, loading and unloading was carried out only during daytime forcing the trains to lie idle during night time. In order to avoid this idle time, IR provided incentives to clients who undertake loading/unloading through out the day. As a consequence of this, the average time taken for loading came down from 30 hrs to 16 hrs and for unloading from 34 hrs to 18 hrs decreasing the Turnaround time by almost a day.

Another strategy adopted by the Indian Railways was to do away with the system of train examination. Earlier, the practice was to examine each train the moment it came back to the base station irrespective of the distance it traveled. Now, the IR undertakes examination of the train after the train travels for 4500 kms. or after 15 days of travel whichever comes first. IR also introduced wagon investment scheme on Public Private Partnership (PPP) model to cater to the increasing demand for wagons.

Other freight strategies adopted by railways include tariff rationalization, non-peak season incremental freight discount scheme, empty flow direction freight discount scheme, loyalty scheme, long-term freight discount scheme, mini rake and two point mini rake scheme etc.

## **Section IV**

### **4.0 Passenger Operations**

The contribution of passenger operations to 'Turnaround' is discussed at length in this section.

Indian Railways play a major role in passenger transportation. The Provisional Estimates in the year 2006-07, stood at 616 billion Passenger kilometres<sup>13</sup>

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<sup>12</sup> Year Book 2005-06

<sup>13</sup> PKM is defined as the number of passengers multiplied by the average distance over which they travel

(PKM), while that of earnings accounted for Rs. 17230.53 crore. During 2005-06, it carried 5725 million passengers compared to 5378 million passengers in 2004-05, accounting for an increase of 6.5%. PKM for both suburban and non-suburban classes increased by 6.9% (from 576 billion in 2004-05 to 616 billion in 2005-06) (Table 7). The increase in the passenger kilometres is more during the period 2004-06 (399 billions) when compared to the period 2003-05 (345 billions).

**Table 7 Passenger Kilometres and Average Lead**

Year	PKM (billions)	Average Lead (kms.)
2000-01	457	94.6
2001-02	491	96.4
2002-03	515	103.6
2003-04	541	105.9
2004-05	576	107.0
2005-06	616	107.5

Source: Annual Report and Accounts; Year Books (Various Issues)

The trends of passenger traffic indicate that the passenger traffic increased from 5378 millions in 2004-05 to 5,725 millions in 2005-06. As compared to non-suburban upper class, the passenger traffic on mail/express and ordinary second class showed an increasing trend (Table 8).

**Table 8 Trends in Passenger Traffic**

Year	Suburban (All classes)	Non-Suburban				Total Non-SU	Grand Total
		Upper Class	Second class				
			Mail/exp	Ordinary	Total		
2000-01	2861	40	472	1460	1932	1972	4833
2001-02	2999	41	496	1557	2053	2094	5093
2002-03	2934	42	513	1482	1995	2037	4971
2003-04	2986	42	571	1513	2084	2126	5112
2004-05	3178	44	609	1547	2156	2200	5378
2005-06	3329	50	668	1678	2346	2396	5725

Source: Annual Report and Accounts; Year Books (Various Issues)

The case of passenger trains shows that the number of passenger trains run daily increased from 7640 in 2004-05 to 7910 in 2005-06 on BG and decreased from 735 in 2004-05 to 652 in 2005-06. This clearly indicates that gauge conversion is taking place on a massive scale on Indian Railways facilitating more transportation of passenger traffic.

Passenger earnings, too, registered an increase of 7.2% in the year 2005-06 as against 2004-05. In 2005-06, these earnings were to the tune of Rs. 15080.76 crore and this excludes Rs. 45.23 crore earned by the Metro Railway, Kolkata). On the other hand, passenger earnings amounted to Rs. 1008.24 crore in 2004-05. Passenger revenue in different classes in 2005-06 as given below illustrates that sub-urban traffic contributed 9.09% of the total earnings, while 90.91% came from non-suburban passengers. Earnings from second and sleeper class mail/express long distance passengers consist of 53% of the complete passenger earnings (Table 9).

**Table 9: Passenger Operations: Earnings**

Segment	Revenue (Rs. In crore)	Percentage
Non-sub urban: Upper class	2831.64	18.78
Second-class (Mail/Express*)	7999.04	53.04
Second Class (Ordinary)	2878.56	19.09
Total	13709.24	90.91
Suburban (All Classes)	1371.52	9.09
Grand Total	15080.76**	100

\*Also includes sleeper class, \*\* Excludes Rs. 45.23 crore earned by Metro Railway, Kolkata; Source: Annual Report of Accounts & Statistics (Various Issues)

Thus, it can be said that during the study period, there is an almost steady increase in passenger traffic output in terms of number of passengers and PKMs. Suburban as well as mail/express traffic accounted for a higher rate of growth during the period under study.

As proper utilization of assets resulted in increase in freight earnings, it also resulted in the increase in passenger earnings. The increase in the number of diesel and electric engines on BG track during the study period resulted

in the increase in passenger kilometres per route kilometre on BG track (Table 10).

**Table 10 - Engines and Passenger Kilometres per Route Kilometre on Broad Gauge**

Year	Diesel Engine	Electric Engine	PKM per route Km
2000-01	577	542	9.49
2001-02	565	558	10.13
2002-03	570	567	10.52
2003-04	589	584	10.76
2004-05	543	600	11.51
2005-06	566	587	12.16

Source: Annual Report and Accounts; Year Books (Various Issues)

Railways are the foremost mode of transport both for long distance and suburban commuter traffic. In spite of having severe operational and resource constraints, in 2005-06, IR introduced 178 trains (single), extended the run of the existing 105 trains (single). Further, IR increased the frequencies of 28 trains (single) for non-suburban passengers. For the convenience of the suburban and local passengers, Railways introduced 46 trains (single) and extended the run of 35 trains (single). During the same year, around 119 lakh cases of ticket less travel were perceived realizing a whopping amount of Rs 233.11 crore.

#### **4.1 Passenger Operations - Strategies Adopted**

Some of the strategies adopted on the passenger front include additional coaches to the existing trains, introduction of new passenger trains in those segments where there is demand, converting some of the existing trains into super fast trains etc.

##### **4.1.1 Coaching Vehicles**

During the year 2004-05, the Passenger Carrying Vehicle (PCV) fleet has not grown corresponding to the increase in traffic demand as a result of financial constraints. The railways resorted to improve the design of coaches to meet this increasing traffic demand. Railways procured state-of-art

coaches with a speed potential of 160 kmph from M/s ALSTOM, LHB, Germany with transfer of technology to facilitate manufacture of new design coaches at Rail Coach Factory, Kapurthala and Integral Coach Factory, Chennai. These coaches are characterized by high passenger carrying capacity, are light in weight, possess high riding comforts and are maintenance friendly. They are mainly air-conditioned chair cars. These have been flourished in the year 2005-06 and all rakes of Howrah-New Delhi Rajdhani Express, Mumbai-Hazrat Nizamuddin August Kranthi Rajdhani Express are running with these LHB coaches. During the same period, New Delhi-Bhopal Shatabdi Express with the above said coaches became the first train to run at a maximum speed of 150 kmph<sup>14</sup>.

#### **4.1.2 Model Stations**

In order to provide improved passenger services at stations, 319 stations have been identified for development as Model Stations till 2005-06, out of which 110 stations have been developed already. To improve the quality of cleanliness at stations, a large number of initiatives like mechanized cleaning, provision of washable aprons, pay and use toilets etc. have been introduced. To bring out a quantum jump in en route cleaning of the trains a new scheme, 'Clean Train Stations' has been introduced in which mechanized cleaning facilities are provided at selected stations en route on the entire IR network to ensure effective cleaning of coaches and toilets.

The 2005-10 'Integrated Railway Modernization Plan' proposed to extend mechanized cleaning at 250 'A' and 'B' category stations by 2007-08. Apart from the above facilities, Integrated Term Enquiry System (ITES) has been set up in few stations to enhance the telephone enquiry system. Tatkal reservation has been extended from three days to five days with differential pricing scheme to almost all mail/express trains and in all classes except I class and AC I class. So as to optimize the use of available accommodation in trains, railways have introduced a system to upgrade full fare paying passenger to the higher class against the available vacant accommodation in all the mail/express trains<sup>15</sup>.

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<sup>14</sup> Year Books 2004-05, 2005-06

<sup>15</sup> Year Book 2005-06

Passenger Reservation System (PRS) has been increased to 1315 locations in 2005-06 as against 1180 in 2004-05. Mass Rapid Transit System in some of the metropolitan cities has been extended length wise.

## **Section V**

### **5.0 Other Service Earnings**

This section explains how other services like catering; parcel and advertisements have contributed to the 'Turnaround'.

The increase in other earnings of Rs 599 crore (24.2% over 2004-05) are as a consequence of the earnings from parcel, catering, advertising, and dividends from the public sector units under the ministry. Despite registering a marginal growth in other earnings in the previous years (2001 - 2004), during 2004-06, other earnings grew by nearly 24%. As this source of revenue did not receive much significance as in the past two years, a slide of schemes on these areas had been implemented, making it feasible for private parties to benefit out of the market opportunity that IR had put forward.

### **5.1 Other Services - Strategies Adopted**

#### **5.1.1 Catering Services**

During 2005-06, catering facilities were provided through 257 pairs of trains and 11319 base kitchens. On the whole, there are, at present, 52 departmental catering units under zonal railways and 1621 under Indian Railways Catering and Tourism Corporation (IRCTC). In order to meet the imperative requirements of passengers for good quality of food and concurrently improving the revenue of railways, the concept of 'food plazas' has been introduced and by the end of 2005-06, 36 food plazas have become operational. Income from catering services during 2005-06 amounted to Rs. 118.93 crores as against Rs. 50.91 crores in 2004-05.

With respect to the privately operated catering units, it is observed that there are 3671 units under zonal railways and 5975 under Indian Railways. The departmental catering units sales turnover stood at Rs 176.11 crore in 2005-06. Licence fee realized from catering/vending contractors was to the tune of Rs. 84.16 crore in 2005-06 while it was Rs. 58.50 crore in 2004-05.

### **5.1.2 Parcel Services**

The scheme for leasing of parcel space in brake vans of mail express trains is provided to the operators by decreasing the price in a graded manner. The third compartment of brake vans and the cabin belonging to guard of the trains is allowed for leasing facility. This resulted in the enhancement of parcel earnings and utilization of existing capacity. Earlier, for round trip parcel van, two times of actual freight was being charged. Now the reserve price has been fixed at 1.25 times the single journey freight for all destinations, except Northeast Frontier Railway, and 1.65 times the single journey freight for Northeast Frontier Railway. The railways' tariff rates for booking of parcel have been linked with the demand and supply principle.

### **5.1.3 Advertising**

The railways have undertaken easy dispensation of novel ideas for advertising activities. This permitted the zonal railways to be more down to business on this facade. The increase in earning from advertising had been more considerable in the Central Railway, Northern Railway and Western Railway. On the whole, IR earnings from advertisements increased from Rs 50.2 crore in 2004-05 to Rs 78.1 crore in 2005-06.

## **Section VI**

### **6.0 Way Forward**

Having discussed the various strategies adopted by the railways that resulted in 'Turnaround', we now conclude by suggesting the "Way Forward". The success of Indian Railways' recent enterprises has raised new self-reliance and fervor to put into practice better ideas and proposals on a war footing. The existing state of affairs is one of stocktaking and preparation for the future. Some of the significant vicinities that necessitate attention have been identified as follows:

(i) In order to complement the highway Golden Quadrilateral for inter-modal integration, planning and implementation of freight and high-speed corridors in South India to balance the planned northern rail freight corridors is to be implemented. (ii) The railways, so as to lessen their financial and operational

burden, should allow private sector investment to create confined and common rail links to main rail corridors. (iii) Providing both fiscal and commercial investment enticements to exert a pull on Foreign Direct Investment (FDI) in rail infrastructure. The consequence of this would be the access to advanced technology in this area from foreign participants (CII 2007). (iv) The railways should also endeavor to develop Public Private Partnership (PPP) frameworks for manufacture of state-of-the-art rolling stock, locomotives, passenger coaches, track equipment, and signaling infrastructure coupled with technology transfer arrangements to facilitate future indigenous development. (v) IR should undertake development of infrastructure for inter-modal connectivity, which includes creation of warehouses, logistic parks, and Special Economic Zones (SEZs) among others. (vi) Another viable option is gradual rationalization of freight tariffs to further simplify freight tariff slabs as well as reduce cross-subsidy for the passenger operations. (vii) Further, the railways should resort to progressive separation of railway infrastructure and Operation & Maintenance (O&M) so as to stimulate private sector initiatives and participation. (viii) It is also recommended that railways should create an independent and transparent Rail Tariff Authority, such that increased private sector participation is made certain.

In conclusion, it can be said that the "Turnaround" in IR during the last few years can be attributed to incredible hastening in growth of freight traffic through enhanced leverage of existing assets and quick decrease in unit costs. The railways are, now, in a position to undo the unrelenting loss in market share vis-à-vis road transport (SK Poddar 2006). This improved performance of the Indian Railways has also been recognized globally and based on this 'Turnaround'; the Railways have announced an investment of Rs. 350,000 crore for the Eleventh Five Year Plan. This huge investment will not only have a huge multiplier effect but will also increase the Gross Domestic Product of the Indian economy.

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