1. **Background**

Cement is one of the eight most important bulk commodities carried by the Indian Railways. The other commodities are coal, iron and steel, fertilizers, foodgrains, raw material for steel plants, petroleum products and iron ore for export. Originating loading of these commodities forms about 89 percent of the total freight traffic on the Railways. The Railways carried 46.25 million tonnes of cement during the year 2002-03. This traffic formed about 9 percent of the total revenue earning traffic (518.74 million tonnes) carried by them during the year.

As against 46.25 million tonnes of cement carried by Indian Railways, the total cement despatches, during the year 2002-03 were, however, 111.07 million tonnes. The rest of it was dispatched, mostly, by road and, to some extent, by waterways. In the year 1995-96, the railways carried 45 percent of the cement dispatched. This share came down to 39.7 percent in a span of seven years.

Cement is a high rated commodity and its transportation is profitable for the Railways. The Railways have, therefore, been concerned about the loss in share of this traffic. They have been devising strategies over the past few years to reduce this loss. However, the Railways continue to lose this traffic to roadways.

In this background, it has become necessary to analyse the reasons for the continuing decline in share. This study makes an effort to analyse this situation, keeping the problems, of the cement industry, with the Railways, in view.

2. **Significance and Relevance of this study**

As we know, railways are more suitable for movement of bulk commodities over long leads. Most of the large cement plants, producing 5 lakh tonnes or more of cement per year, are having their private railway sidings which help them to receive the raw materials inside their plants without involving any secondary transportation.

A study of the causes of the decline in the share of railways for cement transportation, therefore, is necessary. This study is significant for the Railways as it comes up with suggestions for changes in the present marketing strategies of the Railways. The cement industry have given their views on these strategies and have suggested what changes they would expect from the Railways so that more cement could be dispatched by rail.
This study makes an attempt to see how far the Railways can accommodate the views and suggestions within the existing framework of their policies and rules. It also examines to what extent the Railways should change in their marketing strategies to provide greater satisfaction to the cement industry.

This study has, therefore, great relevance for the cement industry as well as to the Railways. Any improvements in the marketing strategies or evolution of new marketing strategies will benefit the Railways as transporters of cement and also the cement industry as a major customer of the Railways.

3. Objectives and Limitations of this study

This study critically examines the problems of the cement industry and also of the Indian Railways in the context of finding out the reasons for the fall in the share of the Railways in transportation of cement. The main objectives of the study are:

(i) To study the existing marketing strategies of the Indian Railways with reference to the transportation of cement.

(ii) To determine and analyse the reasons for the fall in the rail share of cement transportation moving by rail over the past few years.

(iii) To suggest the marketing strategies for the Indian Railways to improve their share in cement transportation.

The study has some limitations too. While its focus is the transportation of cement by rail, the suggested marketing strategies are based on the views of the cement industry in the backdrop of their problems in rail transportation. However, the Railways transport a number of other commodities like foodgrains, fertilizers, coal, steel and iron ore etc. for which the railway rules are uniformly applicable. It is difficult for the Railways to discriminate between one group of customers and the other as they are the common carriers and are owned by the Government of India.

Another limitation of this study was the availability of data with the cement industry for the period prior to 1990-91 as some of the cement plants have come up in the last few years only.

The feedback from the cement industry suggests that certain organisational changes in the Railways would be necessary to provide greater satisfaction to their customers. This study did not analyse such suggestions as these require an exclusive in depth study of Railways’ organisational structure.
4. Overview of Literature

A number of studies have been conducted by the Railways, the RITES, and some other private agencies, to go into the marketing strategies of the Indian Railways. Some private agencies were also engaged by the Railways for conducting studies in specific areas. Certain individuals have also studied various aspects of the freight traffic on the Railways. The competitiveness of the Railways has also been studied. Some of the important studies done in the above field are briefly described in the following paragraphs.

Rail India Technical and Economic Services (RITES), published a report on "Decline in the Railways Share of Total Land Traffic" in the year 1997. This study analysed the traffic flows of all commodities, amenable to movement by rail, along with the problems of line capacity on the trunk routes connecting the cities of Delhi, Mumbai, Kolkata and Chennai. The study concluded that the Railways are not able to carry the offered traffic, along the major routes. This limitation of the Railways has pushed the potential customers to use the road transport as an alternative. The study recommended that all the Railways should upgrade the freight terminals to improve the terminal operations. The report does not specifically cover the problems faced by the cement manufacturers or consumers.

Another study in 'Competitiveness of Rail Sector in Movement of Steel" was undertaken by Manoj Singh in 1998. The study recommended changes in the pricing structure of railway freight, reduction in transit time, quick settlement of claims and making commercial rules more flexible and unambiguous.

The Ministry of Railways entrusted another study on the "Factors Impacting the Total Share and Trends in Industry Logistics" to M/s. A.F. Ferguson and Company, who submitted their report in 1999. The report lists out the key transport problems of the customers with the Railways and classifies them into two major heads, namely, operational and commercial. The report, however, does not deal with the specific problems of the Railways and their customers in transportation of cement traffic.

The Government of India had constituted an Expert Group on Railways, under the chairmanship of Dr. Rakesh Mohan. The group submitted its final report in July 2001. It suggested the introduction of a yield management system with variable pricing for customers, based on dynamic demand situation. As a marketing strategy in
the freight area, it suggested a strategy of efficient scheduling of freight trains along with the modernisation of the Indian Railways.

Another Report titled "Indian Railways – An Agenda for Change" was submitted by the Railway Advisory Committee in the year 2001. This report deals, mainly, with the restructuring strategy for commercialization of the Indian Railways.

Parthasarathy and Chakravarty, published a book titled "Cement Industry: The Emerging Scenario", in 1988. The authors state that the rating policy of the road transport is more flexible than that of the rail transport. With the emergence of freeways and heavier multi-axle trucks, road transportation is becoming cheaper besides having the inherent advantage of its ability to provide door-to-door facility. The book highlights the difficulties of the cement industry with respect to railway transportation but does not suggest any marketing strategies for the Railways.

The Ministry of Railways published two “Status Papers on Indian Railways” in May 1998 and May 2002, highlighting the "Issues and Options" before the Railways. These papers focus on the need to sharpen the marketing capability of the Indian Railways through constructive pricing mechanisms and tariff rationalisation and also through customer focus. However, these papers do not give, in detail, the customer focus strategies to be adopted by the Railways.

Another report titled, "The Potential for Rail Freight" was published by the National Economic Research Associates for the office of the Rail Regulator, London (U.K.). This report studied the reasons for fall in share of rail freight traffic in British Railways and identified price, service quality, reliability and flexibility as the factors which are important to the customers of rail freight in Great Britain.


- Railway freight pricing has to be in tune with cost and price of competing transport sectors.
- Cross-subsidisation of passenger traffic services should be reduced to a minimum by reducing freight service rates.
- Preferential Traffic Schedule of the Railways should apply to only10% of their wagon fleet. The rest of the wagon fleet should be committed on
contract to individual customers.

- The Railways should give more concessions to customers having a higher share in rail traffic.
- Demurrage should be an incentive. It should not be punitive.
- Railways should have strategic tie-ups with the warehousing industry.
- Railways should introduce 'e-commerce' for dealing with major freight customers.
- The Railways should move away from rail orientation to transport orientation.

However, these suggestions need to be examined in detail, particularly, with reference to cement transportation.

5. Outline of the Research Methodology

The research methodology used for this study was designed to meet the objectives of this study as stated earlier.

Data Collection Procedure

The universe of study consisted of 489 cement manufacturing units in the country as existing on 31.3.2002. These included 365 "mini" cement plants, which produced only around 4 million tonnes of cement in the year 2002. The remaining 124 large cement plants, having a manufacturing capacity of 135.03 million tonnes, produced 102.4 million tonnes of cement in the year 2002.

The sampling frame, therefore, consisted of only the "large" cement plants with a cement plant taken as the sampling unit.

The sampling size was selected keeping in view the requirements of efficiency, representativeness, reliability and flexibility. A sample size of 20 percent was selected. Thus 29 "large" cement plants were selected out of a total of 124 "large" cement plants for the collection of data.
Sampling Procedure:

Probability sampling method has been employed. Area sampling method was used for the cement manufacturing units in different geographic clusters in the country. The clusters of cement plants taken for the study are present in the states of Andhra Pradesh (21 Plants), Rajasthan (14 Plants), Tamil Nadu (13 Plants), Gujarat (10 Plants) and Madhya Pradesh (10 plants).

An effort has been made to get samples from each State having a sizable number of cement manufacturing units located in it. The necessity of getting samples from the other States was also kept in mind so that the all India character of the study is maintained.

Data Collection

The data used for this study have quantitative as well as qualitative dimensions. To collect the relevant data, both primary as well as secondary sources have been utilised.

Primary Sources

The sources of primary data are the cement plants, the cement customers and other members of the trade and industry.

Research Instruments for Collection of Primary Data

The research instruments, used for the collection of primary data, are:

- Structured Questionnaire
- Interviews / Schedules
- Seminars
Structured Questionnaire

The questionnaire for the study was divided into two parts. The first part dealt with the qualitative dimensions while the second part attempted to deal with the quantitative dimensions of the data obtained from the cement manufacturers. Five questions were designed to obtain data on qualitative dimensions.

(i) Relative importance of the various parameters of the transport mode:
(ii) Comparative attitudes of consumers towards various facets of rail and road transport:
(iii) Preference of consumers towards mode of transport with their reasons;
(iv) Problem areas in rail transport; and
(v) Relative importance and priorities of the measures to improve the railway freight services.

The second part of the questionnaire consists of seven questions, designed to obtain data on quantitative dimensions.

(i) Production/dispatches of cement for the period 1990-91 to 2001-02;
(ii) Distribution channels used by the cement companies;
(iii) Classification of customers on the basis of monthly dispatches;
(iv) Relative use of distribution channels for cement dispatches;
(v) Zonewise pattern of cement dispatches;
(vi) Comparison of road and rail dispatches of cement for the period 1991-92 to 2000-01; and
(vii) Components of the landed price for three important destinations in each zone.

Personal Interviews / Schedules

The structured questionnaire provided the data of the cement industry on qualitative as well as quantitative dimensions for the purpose of the study. These data were given by the cement manufacturing units. However, it was also necessary to have the views of the marketing officers and transport advisers of some of the cement companies. The views of some of the retired and serving railway officers were also obtained. The views highlighted some of the reasons why the cement traffic is getting diverted to other modes of transport.
Seminars

These seminars were held with a view to discuss the existing marketing strategies of the Indian Railways and also to have suggestions for evolving new strategies to improve the share of the Railways. In these seminars, members of the trade, industry, road transporters, marketing managers of the Container Corporation of India, the railway operating and commercial officers, and the road transporters were present.

Secondary Data Collection

Secondary data have been collected from a large number of sources. These include:

(i) Publications of the Ministry of Railways regarding data on Railways and their share in the transportation of cement over the years.
(iii) Articles and Papers on relevant topics published in management journals and magazines.
(v) Reports on the Railways published by RITES and other consultants appointed by Railways.
(vi) Reports of committees appointed by the Central Government and the Ministry of Railways for studying the working and management of the Indian Railways.
(vii) Proceedings of seminars and discussions held at various fora on the issues related to transportation of cement by the cement industry.
(viii) Research work of scholars on the rail transportation of similar commodities.

Data Analysis

The qualitative dimensions of the study were rated on a 5 point scale. The mean ratings and rankings, from the scores given by the respondents in reply to each of the five questions, were worked out and tabulated. Bar charts were also drawn to represent the mean ratings and rankings of the various criteria.
The data on quantitative dimensions were available in response to the seven questions on these dimensions. An analysis of the data led us to the trend of growth of cement dispatches by road and rail over a period of ten years, the number and type of distribution channels used by the cement companies, the classification of customers on the basis of monthly dispatches, relative use of the distribution channels, zonewise patterns of cement dispatches, comparison of road and rail dispatches of cement for the period 1991-92 to 2000-2001 and the components of the landed price of cement, for three important destinations in each zone.

Findings and Conclusions

The findings of the study are based on the two types of dimensions stated above. These dimensions concern the following broad strategic areas in cement transportation.

- Freight Charges
- Flexibility
- Transit Time
- Reliability including loss/damage enroute
- Settlement of Claims
- Customer Satisfaction
- Wide Reach

These areas have been analysed and linked to the present marketing mix of the Indian Railways.

Pricing of Rail Transport

Railway freight is higher than the road freight by twenty to thirty percent. Rail movement involves additional handling charges as well as incurring of expenditure on secondary freight, from the unloading station to the dealers’ premises, because the Railways do not provide any storage/stacking facilities. Demurrage and wharfage charges are levied for movement by rail only. The delay in settlement of claims adds to the cost of cement companies. The Railways have increased the size of the rakes and the cement companies have to incur extra costs to handle such rakes in their
private sidings for cement loading. The cost of gauge conversion and electrification of sidings is heavy for the cement companies if the Railways do not share it.

Distribution – Reach of the Railways

The cement companies are not getting the required flexibility in despatching smaller lots of cement to individual destinations. They would like to have more two/three point rakes. To move rakes having higher pay loads, the cement companies would require that the Railways should permit clubbing of demands more freely. Higher transit time in rail movement and non-provision of warehousing at the terminals is causing dissatisfaction among the cement companies. They would like the Railways to permit changing of destinations of the rakes more freely.

Process

The cement industry finds little flexibility in the application of railway rules to them as these are rigid and allow very little discretion to the frontline staff. The rules regarding demurrage and wharfage should take into account the genuine difficulties of the customers. The maintenance of railway goods sheds and their circulating areas is unsatisfactory causing inconvenience in loading and removal of consignments by the customers.

The Railways should introduce the system of credit/debit of demurrage hours on the same lines as they have done for the steel plants. There are long delays on the part of the Railways to decide on concessional schemes like Station to Station Rates, Volume Discount Scheme and Own your Wagon Scheme. The Own Your Wagon Scheme should be made more customer friendly.

The Railways should be more transparent in the application of rules to their customers. The rules are complicated and inflexible. The Railways do not issue the railway receipts on Sundays and holidays. They also demand bank guarantees for payments made by cheque. The procedure of allotment of wagons by the Railways is complicated and the frontline staff do not explain the procedure to the customers.
The Railways also do not provide an accurate forecast about the supply of rakes for loading. Information about rakes in transit can be provided through the Freight Operations Information System terminals. This should be provided to the major cement customers by the Railways. Delivery of consignments on Indemnity Bond should be made easier by reducing the formalities involved.

The settlement of claims is, invariably, delayed. Sometimes, even genuine cases are rejected. Movement by rail involves multiple handling as door to door service is not provided by the Railways. Multiple handling also results in damage to or the loss of consignments.

Product

The Railways do not guarantee supply of rakes as per the demand of the cement companies. For customers having a demand level of more than 1000 tonnes/month, the rake size should be reduced till, as per an agreed time frame, adequate facilities for loading/storage are developed by the cement companies at the two ends. More 2/3 point combinations, with the benefit of "train-load" freight should be given upto the last point of the destination of the rake. The maximum distance for mini rakes should be increased from 300 to 400 kilometers irrespective of the zonal railway on which the movement takes place. The Railways should provide warehousing facilities at the unloading points to reduce multiple handling of cement consignments. The long lead cement traffic should be segmented and targetted for 100 percent of its movement by rail so that traffic can be diverted from road to rail. The Railways should supply fit, clean and watertight wagons for loading.

To attract more traffic to rail, movement of cement in bulk should be planned to large consumption centres like Delhi, Kolkata, Chennai, Bangalore etc. by providing specially designed wagons for the purpose.
**Physical Evidence**

Physical evidence of rail transport includes:

a) The wagons/rakes supplied for transportation of cement.

b) The railway receipts issued after booking of consignments.

c) The goods sheds and offices at cement handling points on the Railways.

d) The stations/yards sidings at the originating points of cement traffic.

e) The railway locomotives used for hauling the rakes.

f) Railway staff, in uniform, at the cement handling points.

**People**

The provision of railway transport service for cement involves the railway employees who render this service. The behaviour of the railway employees towards their customers and the accessibility of railway officers to the representatives of the cement industry together determine the quality of service rendered by the Railways to their customers. Thus recruitment, training and motivation of the railway staff and officers are important dimensions for determining the type of interaction between the Railways and the cement industry.

**Productivity and Quality of Service**

These two elements, often treated separately, are strategically interrelated because neither of the two elements can be addressed in isolation. The Railways have been trying to keep their costs on passenger traffic under control by subsidising the same from the revenues earned from freight traffic. This has resulted in an increase in the freight rates for most of the commodities. The cement industry feels that, over the past few years, the railway freight rates for cement have become uncompetitive with road rates, mainly, because of this reason.

Service quality refers to the degree to which the rail transport service for cement satisfies the customers. Service quality is essential for the Railways to have product differentiation and build customer loyalty.
Reliability of rail transport and loss/damage to consignments enroute are the two major factors affecting the quality of service rendered by the Railways to the industry.

*Promotion*

The problems of communication between the Railways and the cement industry are:-

a) Lack of adequate information about availability and movement of rakes till these reach their destination.

b) Change of policies by the Railways to have bigger size of rakes for movement of cement traffic without giving adequate opportunity and information to the cement industry to remodel their sidings to suit the bigger size of rakes.

c) Changes made in the demurrage/wharfage rules without consulting and taking into account the problems of cement industry have made the cement customers unhappy.

d) Non-involvement of the cement industry in implementing the 'Engine-On-Load' concept for loading and unloading of cement.

e) Non-involvement of private parties including the cement industry in designing or improving warehousing and terminal facilities for handling of cement traffic.

f) Own Your Wagon Scheme should be made user friendly and acceptable by having detailed discussions with the cement industry.

g) Availability of railway rules and procedures, freely to the cement industry, is not being ensured by the Railways.

*Recommendations*

Based on the conclusions of the study, specific marketing strategies for each element of the marketing mix for the Indian Railways have been recommended.
Pricing

The Railway Board should grant full powers to the General Managers to grant station-to-station rate (STS) freight rebate beyond the limit of 10/12 percent. The strategy of granting rebate, under STS scheme, after examination of individual cases should be continued. In cases of idling of railway’s rolling stock, the marginal cost, at least, must be recovered under the STS scheme. However, the time taken, in deciding such cases, must be substantially reduced.

The Railways’ policy of granting 2 percent concession to its premier customers must be continued. At the same time, the new strategy of providing warehousing at the unloading terminals should be, vigorously, pursued by the Railways. The private parties must be encouraged to set up unloading terminals, exclusively, managed by them.

The Railways have decided to give relief to the siding holders by giving them the benefit of telescopic freight rates based on the through distance upto the dead end of siding. This policy should be continued by them.

To encourage loading of cement by rail, the Railways should share the costs of remodelling of the sidings, gauge conversion and electrification of sidings with the cement siding holders on mutually agreed terms on a case to case basis. The cost of train examination and commercial staff posted in the sidings should be borne by the Railways. The Railways should encourage development of loading and unloading facilities by giving incentive to the siding holders to accept the “Engine-on-Load” system.

The condition of unloading terminals needs to be improved by providing better lighting arrangements and proper circulating areas. Pending these improvements, the Railways should be more liberal in waiving off demurrage and wharfage charges on consignments handled at such terminals.

The claims on damaged/lost consignments must be paid promptly without waiting for inter-railways liability to be fixed.

Finally, the cross-subsidisation of passenger and low rated freight traffic by charging higher rates for other freight traffic should be stopped. In the mean time, it should be substantially reduced.
Distribution – The Reach of the Railways

The Railways need to improve their reach by having a better distribution system. The instructions regarding change of destination of indents should be reiterated and widely circulated.

'Mini' Rakes should be permitted for loading, round the year, upto leads of 400 kilometers. The Railways should permit more 2/3 point combination rakes in cases where the traffic can be diverted from road to rail.

The facility of clubbing 12 consignments in a broad gauge wagon should be continued.

The Container Corporation of India should provide inter-modal transportation to help the Railways become total logistic providers.

Process

- The authority to waive off demurrage/wharfage should be delegated to the field level to dispose of, at least, 50 percent of such cases.
- Free time for loading and unloading should be reviewed, keeping in view the facilities being developed by the customers, to reduce the same over an agreed timeframe.
- Railway staff should inform their customers, sufficiently in advance, about the expected arrival of railway rakes.
- Credit/Debit system of demurrage hours should be introduced.
- Rules regarding levy/waival of demurrage/wharfage should be made easily available to the customers.
- Punitive charges for overloading of coal wagons from certain collieries to the cement plants should be reduced.
- Railways should improve the maintenance of goods sheds and the circulating areas and privatize their maintenance.
- The security of these areas should be given to private security agencies.
- These contracts should be awarded by the commercial department of the Railways.
• Adequate funds should be earmarked for the above purposes.
• More covered space/sheds should be provided at terminals.
• The process of granting Station to Station rates should be completed within 30 days.
• The newly announced scheme, granting 2 percent rebate to Railway's premier customers, should be continued.
• Own Your Wagon Scheme should be made more user friendly.
• The procedure of allotment of wagons should be simplified.
• Planning for provision of wagon fleet should be reviewed to avoid situations of shortages of wagons, particularly, during the busy season.
• Railways should organise a system of giving advance intimation about supply of rakes to their customers.
• Freight Operations Information System should be provided at important sidings.
• The formality of asking for a surety for giving delivery on Indemnity Bond, should be dispensed with.
• Reputed cement companies should be permitted to make payment of freight by local cheques.

Product

• The Railways should change the Preferential Traffic Schedule to supply wagons on demand.
• The rated carrying capacity of railway wagons should be fixed keeping in view the actual quantity of coal carried.
• The cost of railway sidings for handling cement in bulk at the terminals should be shared by the Railways.
• The minimum rake size should be reduced to 35 covered eight wheeler wagons as an interim measure, for customers having at least 1000 tonnes/month rail movement.
• The entire quantity of cement traffic moving over leads of 1000 kilometers or more should be planned for movement only by rail. Station to Station Rates, should be granted, if necessary, to meet the competition.
• Railways should become total transporters of long lead cement traffic and arrange to provide door-to-door delivery to cement customers.
• Half-an-hour extra 'free time' should be given by Railways to clean the wagons supplied for loading.
• Water tight wagons should be supplied.

Physical Evidence
➤ Railways should improve:
  • Landscaping.
  • Circulating areas.
  • Approach roads.
  • Unloading space.
  • Design and layout of offices at the terminals where cement is handled.
➤ The Railway Receipts should be issued through computerisation.
➤ The Railways should close provider GAP4 by improving service delivery as well as communication with their customers.

People
• The Railways should close provider GAP 3 by reviewing recruitment and training procedures of the frontline staff so that they are responsive to the needs of customers.
• The Railways should increase the percentage of well qualified, directly recruited, frontline staff in group 'C' categories to improve the quality of staff in this category.
• Greater delegation of powers to the frontline staff, in day to day matters, must be ensured to serve the customers better.

Productivity and Quality of Service
• Railways should provide a guaranteed supply of wagons for loading a minimum agreed quantity with speedy transit.
• Rules should be made more transparent, simple and flexible.
• Real time information should be provided to customers through the FOIS.
• Change of destination should be allowed. The Railways should reiterate the instructions on the subject and ensure that the frontline staff follow the same.
• Settlement of claims should be done expeditiously.

Promotion

• Computer terminals, of Railways' Freight Operations Information System, should be provided in the sidings of all major cement manufacturers at major cement unloading terminals.
• Minimum size of rake should be reduced to 35 eight-wheeler wagons for an agreed, but a limited period.
• The facility of two point rakes and mini rakes should be provided round the year.
• Demurrage and wharfage rules should be reviewed periodically.
• Incentives, including sharing the cost of remodelling of sidings should be given to the cement companies.
• The condition of existing railway terminals should be improved.
• Warehousing should be provided at major terminals.
• Own Your Wagon Scheme should be made customer friendly.
• To improve transparency in railway working, the rules and procedures should be made easily available.
• Railway rule books must be updated, published and widely circulated every year.

Directions for Future Research

The research on the present topic has brought out a number of areas, which need further investigation. These concern the various marketing strategies of the Indian Railways in transportation of cement. At the same time, these areas are also vital for the marketing of other commodities including those commodities which have got diverted to other modes of transport, particularly, the roadways, for movement by rail.
The marketing strategies of the Railways for the following commodities also need to be studied in detail:

- Petroleum Products
- Steel
- Coal
- Fertilizers
- Iron Ore for Export
- Raw Materials (like gypsum & limestone) for steel plants

The organisation set up of the Indian Railways also needs a detailed study. The areas which need study are:

- The change from the present organisational setup to a customer-focused one
- Simplification of rules & procedures to make them customer-friendly.
- Ensuring availability of rakes to the customers.
- Improvements in the internal marketing of the Railways.
- Recruitment standards and processes.
- Training modules and methods
- Strategies for improving employee productivity

At present, the Railways are facing a conflict between their social responsibility and the commercial nature of the organisation. The Railways subsidize passenger traffic by increasing the freight rates. They carry a number of commodities like salt, fodder etc. which do not even pay for the cost of transport. There are a large number of uneconomic branch lines, which the Railways have to operate as a part of their social responsibility. The losses on account of all the above services have already been quantified. The following aspects of this problem can be taken up for future research:
• How to make the uneconomic branchlines viable.

• The imperatives of subsidizing passenger traffic in the present socio-political set up.

• The management of change for the Indian Railways.

• Tariff rebalancing and quality enhancement strategies for improving the share of transportation of non-bulk commodities for the Indian Railways.

• Marketing strategies of Railways for integration of rail, road and sea movement in order to have a seamless chain of movement of freight traffic.

• Strategies for improving speeds of freight trains.

Thus a number of studies are required in the above areas if we want to take comprehensive steps to arrest the decline in the share of Railways as transporters of freight traffic.