61

PROJECT MANAGEMENT PRACTICES IN GAUGE CONVERSION AND NEW LINE PROJECTS

MINISTRY OF RAILWAYS

PUBLIC ACCOUNTS COMMITTEE (2007-2008)

SIXTY-FIRST REPORT

FOURTEENTH LOK SABHA

LOK SABHA SECRETARIAT
NEW DELHI

SIXTY-FIRST REPORT

PUBLIC ACCOUNTS COMMITTEE
(2007-2008)

(FOURTEENTH LOK SABHA)

PROJECT MANAGEMENT PRACTICES IN GAUGE CONVERSION AND NEW LINE PROJECTS

MINISTRY OF RAILWAYS

Presented to Lok Sabha on 01.12.2007

Laid in Rajya Sabha on 01.12.2007

LOK SABHA SECRETARIAT
NEW DELHI

November, 2007/*Agrahayana*, 1929 *(Saka)*

P.A.C. No. 1857

Price: Rs. 55.00

© 2007 By Lok Sabha Secretariat

Published under Rule 382 of the Rules of Procedure and Conduct of Business in Lok Sabha (Eleventh Edition) and Printed by the Manager, Government of India Press, Minto Road, New Delhi – 110 002.

CONTENTS

COMPOSITION OF PUBLIC ACCOUNTS COMMITTEE

(2007 - 2008)

Prof. Vijay Kumar Malhotra — *Chairman*

Lok Sabha

2. Shri Kirip Chaliha
3. Shri Khagen Das
4. Shri P.S. Gadhavi
5. Shri R.L.Jalappa
6. Shri Raghunath Jha
7. Shri Bhartruhari Mahtab
8. Dr. Rajesh Mishra
9. Shri Brajesh Pathak
10. Prof. M. Ramadass
11. Shri K.S. Rao
12. Shri Mohan Singh
13. Shri Rajiv Ranjan 'Lalan' Singh
14. Shri Kharabela Swain
15. Shri Tarit Baran Topdar

Rajya Sabha

16. Shri V. Narayanasamy
17. Prof. P.J. Kurien
18. Shri Janardhana Poojary
19. Shri Suresh Bhardwaj
20. Shri Prasanta Chatterjee
21. Dr. K. Malaisamy
22. Shri Ravula Chandra Sekar Reddy

SECRETARIAT

1. Shri S.K. Sharma	—	*Additional Secretary*
2. Shri A. Mukhopadhyay	—	*Joint Secretary*
3. Shri Brahm Dutt	—	*Director*
4. Shri M.K. Madhusudhan	—	*Deputy Secretary -II*
5. Shri N.K. Jha	—	*Under Secretary*

INTRODUCTION

I, the Chairman, Public Accounts Committee, as authorised by the Committee, do present this 61st Report relating to "Project Management Practices in Gauge Conversion and New Line Projects" on Chapter I of Report of the Comptroller and Auditor General of India for the year ended March, 2005, No. 5 of 2006 (Performance Audit), Union Government (Railways).

2. The Report of the Comptroller and Auditor General of India for the year ended March 2005, No. 5 of 2006 (Performance Audit), Union Government (Railways) was laid on the Table of the House on 19th May, 2006.

3. The Committee took the evidence of the representatives of the Ministry of Railways on the subject at their sitting held on 31st October, 2006. The Committee considered and finalised this Report at their sitting held on 23rd November 2007. Minutes of the sittings form Annexures to the Report.

4. For facility of reference and convenience, the Observation and Recommendations of the Committee have been printed in thick type in the body of the Report.

5. The Committee would like to express their thanks to the Officers of the Ministry of Railways for the cooperation extended by them in furnishing information and tendering evidence before the Committee.

6. The Committee place on record their appreciation of the assistance rendered to them in the matter by the Office of the Comptroller and Auditor General of India.

7. The Committee also place on record their appreciation for the invaluable assistance rendered to them by the officials of Lok Sabha Secretariat attached with the Committee.

NEW DELHI;
23 *November*, 2007
2 *Agrahayana*, 1929 (*Saka*)

PROF. VIJAY KUMAR MALHOTRA,
Chairman,
Public Accounts Committee.

REPORT

PART – I

Background Analysis

I. Introductory

The Indian Railways is the principal mode of transportation for carrying bulk freight and long distance passenger traffic. Since, it started its maiden journey on 16th April, 1853 from Boribunder to Thane covering a short distance of 34 kms. the Railways were having, as on 31.03.2004, rail network of 63,221 route kms. comprising 46,807 kms. of broad gauge, 13,290 kms. of metre gauge and 3,124 kms. of narrow gauge.

2. Expansion and strengthening of the railway network involving investment in new lines, gauge conversion, doublings, railway electrification and metropolitan transport projects is a continuous process. These projects are sanctioned on the basis of their remunerative return and critical operational needs. Railways undertake exercises to identify the needs of their network taking into account the viability, operational requirement and socio-economic developmental needs of the backward areas. Commercially non-viable but socially desirable projects are also taken up by taking into account the considerable public interest usually evoked by public representatives.

3. Indian Railways undertake a large number of construction projects for creation of new assets and upgradation of existing assets for augmentation of services. Over the years, there has been a substantial increase in the capital outlay on gauge conversion projects [conversion of narrow gauge (NG)/ meter gauge (MG) lines to broad gauge (BG)] and construction of new lines projects of Indian Railways. The works programme of the Indian Railways during 2005-06 included 87 new line and 62 gauge conversion projects aimed at adding 9,234 kms. of new lines and converting 13,528 kms. of meter gauge/narrow gauge lines into broad gauge.

4. ‘Project Unigauge’ was launched by Indian Railways on 1 April, 1992 with the objective of selective conversion of meter gauge and narrow gauge to broad gauge for providing additional transport capacity and creating alternate routes to the congested BG trunk lines, in addition to industrial and economic growth of the respective areas. ‘Gauge conversion on the basis of prioritisation’ was aimed at providing alternatives to the existing congested routes and minimising transport bottlenecks and transhipment hazards, thereby enhancing the capacity and capability of the Railways. At the time when the Unigauge policy was adopted, 38 per cent of the total route length of Indian Railways was on meter gauge and 6.5 per cent on NG. The Ministry of Railways (Ministry) decided in 1992 to formulate an action plan for converting more than 11,000 kms. of MG/ NG routes into BG. (6,000 kms. during VIII Five Year Plan 1992-97 and 5,000 kms. during IX Five Year Plan 1997-2002).

5. Construction of new lines, on the other hand, is undertaken for various operational, commercial or social/ strategic reasons. No proposal, whether for gauge conversion or new line, is considered financially justified unless net gain expected out of the proposed outlay, after meeting the working expenses or average annual cost of services, yields a return of not less than ten per cent under Discounted Cash Flow method (14 per cent from July 1992).

6. This Report is based on Chapter –I of Report No.5 of 2006 of C & AG of India for the year ended March 2005 (Performance Audit), Union Government (Railways), relating to "**Project Management Practices in Gauge Conversion and New Line Projects**" (Appendix – I).

II. Audit Appraisal

7. The performance review of project management practices in gauge conversion and new lines was carried out by Audit with a view to assess:—

(a) whether the system for selection of projects ensured most effective use of railways resources by prioritizing projects in terms of objectives, expected returns and availability of funds;

(b) whether the planning and scope of the projects and their sub-projects enabled achievement of their objectives;

(c) whether the projects were executed according to the time schedule and available resources following the best projects management practices; and

(d) whether value for money was realized by achievement of the objectives of the projects as envisaged.

8. Audit examined the position of Gauge Conversion and New Line Projects with a view to see as to how the projects were selected and whether the stated objectives of each were achieved. Audit review had found that:—

(a) Out of 133 projects audited, 107 were financially unviable. Of these, 36 were taken up on commercial considerations.

(b) At the present rate of funding, railways would require another fifteen to thirty eight years to complete pending gauge conversion and new line projects. Despite this, new projects are being introduced every year.

(c) Due to delay in completion, cost of projects which are more than ten years old has increased by Rs. 11,600 crore (Three times); from Rs. 5,700 crore to Rs. 17,300 crore.

(d) A large number of projects were undertaken for augmentation of traffic facilities as well as socio economic development of the backward areas without taking into account the availability of funds. As a result of this the resources were so thinly spread that most of the projects that were commenced as far back as 10 to 25 years were incomplete and no target dates were available for their completion.

(e) The projects were undertaken on the grounds of socio economic development despite being unremunerative. Railways were not able to complete them for want of funds thereby defeating the very purpose of their commencement.

(f) Similarly, the projects undertaken for augmentation of traffic facilities were suffering for want of funds because Railways had not assessed their capacity properly and projects were undertaken without giving due regard to the availability of funds or their capacity to generate sufficient funds.

(g) In some cases, the execution was not planned in proper manner as a result even the completed portions of the projects were not utilized or the works were executed in such a manner that the assets created were not likely to be utilized till the entire project was completed. This has resulted in blocking of funds.

9. The Committee's examination of the subject as also the various issues arising out of the aforestated Audit Paragraph are dealt with in the succeeding paragraphs:—

III. Policy for Taking up New Line and Gauge Conversion Projects

10. According to Ministry of Railways (Railway Board), the policy followed for selection of routes to be taken up for Gauge conversion under Project Uni-Gauge and New Line Project has been as under:—

(i) Gauge Conversion—

(a) To take up conversion of lines to develop alternative BG routes obviating the need for doubling existing BG lines on these routes.

(b) To establish new BG links between stations connected by other BG lines.

(c) To establish BG connection to ports, industrial centers and locations having potential for growth.

(d) To take up conversion of lines required on strategic considerations.

(e) To minimize transhipment and to improve wagon turn around by avoiding delays at transhipment points.

(f) To carry out the conversion of lines as per the above policy at least cost yet providing a standard of service not lower than what the rail users were getting on the MG.

(ii) New Lines – The policy for taking up New Line projects was enunciated by the National Transport Policy Committee in 1980. This policy states that New Lines would be taken up based on the following criteria:—

(a) Project-oriented lines to serve new industries for tapping mineral and other resources.

(b) Missing links for completing alternative routes to relieve congestion on existing saturated routes;

(c) Lines required for strategic reasons; and

(d) Lines for establishment of new growth centers or giving access to remote areas.

11. However, besides the above criteria, a number of projects have been taken up under New Line and Gauge Conversion on socio-economic considerations to provide connectivity to backward, under-developed and remote areas to connect them with the mainstream.

IV. System of Selection and Funding of Gauge Conversion and new line projects of Indian Railways

12. Proposals for taking up new projects, usually on the basis of Engineering and Traffic Survey results, are forwarded by zonal railway administration to the Railway Board. These proposals are expected to include financial justification, abstract estimates and techno-economic feasibility reports in support. The Railway Board has powers to approve projects estimated to cost upto Rs.100 crore. Projects estimated to cost Rs.100 crore and above are required to be put up for approval of the Cabinet Committee on Economic Affairs, duly recommended by the Expanded Board for Railways. This Board has been set up to consider investment proposals of Railways of Rs. 100 crore and above. This Board, in addition to Chairman and Members of the Railway Board includes Financial Commissioner (Railways), Secretary (Expenditure), Ministry of Finance, Secretary (Programme Implementations) and Secretary (Planning Commission) as members. Once the projects are approved, they are included in the Works Programme accompanying the Railway Budget for seeking approval of the Parliament. In case of new line projects, a Final Location Survey is carried out for preparation of detailed estimates and zonal railways take up the work only after the approval of the detailed estimates by the Railway Board.

13. Audit observed that the system of selection and funding of gauge conversion and new line projects in Indian Railways had the following deficiencies:

A. A large number of projects were taken up by the Railways without prioritization and sometimes even without projecting firm dates of commissioning. As a result, available resources were spread thinly and the projects are likely to drag on for several years.

B. A large proportion of projects were introduced despite uneconomical rate of returns.

V. Lack of Prioritization in Selection and Funding of Projects

14. According to Audit, the Works Programme for the year 2005-06 included works for gauge conversion, new line, track doubling, electrification, signaling & telecom, road safety, traffic facilities, track renewal, bridge works etc. Audit analysed

the data regarding 149 ongoing gauge conversion and new line projects included in the Works Programme 2005-06 to assess the time taken on these projects and the extent of funding over the years. The details of the study are as under:—

Age-wise Profile of Projects

Age profile	Number of Gauge Conversion projects	Actual expenditure upto 2004-05 (Rs. in crore)	Throw forward (Rs. in crore)	Number of New Line projects	Actual expenditure upto 2004-05 (Rs. in crore)	Throw forward (Rs. in crore)
More than 20 years	0	0	0	10	3254.86	382.54
More than 10 years but less than 20 years	20	4445.29	1407.42	16	3936.53	6934.05
More than 5 years but less than 10 years	36	4563.44	6540.38	47	2713.66	13338.44
Less than 5 years	6	24.15	2469.38	14	339.70	4366.81
Total	62	9032.88	10417.18	87	10244.75	25021.84

As is evident from the above table, Railways have a large number of projects, which have been going on for decades. According to Audit, the cost of these projects, originally estimated at Rs. 39,287.13 crore has been revised time and again, primarily due to delays in completion, and is now estimated at Rs. 54,716.65 crore. Out of the 149 on-going projects shown in the Works Programme 2005-06, in 105 projects, the physical progress was below 50 per cent, in 12 projects the progress was between 50 and 75 per cent and in 8 projects the progress was between 75 and 90 per cent. Only 24 projects were more than 90 per cent complete. In respect of 25 gauge conversion and 46 new line projects, the target dates of completion had not been fixed as of March 2005. Railway outlay on gauge conversion and new line projects during 2005-06 was only Rs.690 crore and Rs.652 crore respectively. At this rate of funding it will take the railways another 15 years from now to complete the pending gauge conversion projects and another 38 years from now to complete the pending new line projects. It was also seen even a large number of earlier projects remained incomplete, Railways introduced 42 Gauge Conversion and 61 New Line Projects over the last 10 years. Audit pointed out that lack of prioritization results in over stretching and unsystematic allocation of funds which impacts not only the macro management of Railway Projects but also adversely affects the efficient management of individual projects and deprives the public of the benefits from the investments already made on these incomplete projects.

15. The Committee enquired about the prevalent system of planning and execution of various gauge conversion and new line projects in the Railways. The Ministry of Railways (Railway Board), in their written reply, stated as under:—

> "The project is initially formulated based on a survey which includes Engineering and Traffic Surveys. The standards of construction and facilities to be provided on the line are studied and provided in the survey report. The work is thereafter taken up after requisite approvals and inclusion in the Budget. Since, a large number of works are in progress, the new line and gauge conversion works are normally planned to be done in phases. The phase length is decided considering the various parameters like connecting an important township, pilgrimage center/ any other important place, providing alternative route etc."

16. To a query regarding lack of planning as well as non-fixing of target dates in respect of 25 gauge conversions and 46 new lines projects, the Ministry in a written reply, stated as under:—

> "There is a huge shelf of New Line and Gauge Conversion Projects requiring Rs. 40,661 crore without matching availability of resources. In such a scenario, it is not feasible to fix target of all the projects. The works had been introduced subject to availability of resources. Since, funds are limited, required progress is not feasible to be achieved."

17. Elaborating on the matter, the Ministry stated as under:—

> "The completion of project in time and within the estimated cost is feasible only when timely funding is assured. In present scenario, this is not possible. Adequate planning has been done before introduction of new works. However, based on public demands, a large number of new line and gauge conversion projections have been taken up having a huge throwforward for completion. Still, large number of demands are being raised for taking up new lines and gauge conversions which would be primarily on socio-economic considerations. Gauge Conversion are sometimes getting justified on operational reasons also due to section becoming isolated and difficult to maintain from safety and traffic point of view. It is not possible to reject such proposals altogether on the plea of poor resources in the wake of persistent public demands raised in various fora including Parliament. Railway is not only a Commercial Organization but has to sub-serve its objective of providing rail connectivity to backward and under-developed areas for their socio-economic development and connecting them to the mainstream. Railway has bigger role of providing National Integration through its vast network. If only commercially viable projects are taken up, the poor and the backward areas of the country will never develop."

18. The Committee have desired that Railway Board should indicate the time-frame for completion of the work and in particular for those works which were undertaken more than five years ago. In response, the Ministry in a written reply stated as under:—

> "As on 01.04.06, Railways had a throwforward of projects requiring over Rs. 54000 crore for completion. The allocation of funds for projects have

increased considerably during 2006-07 but is not adequate to complete all the projects in a reasonable time-frame of five years. The growth of traffic is unprecedented in last 2 years and considering the similar trend in further years, Railways need to invest heavily on through put enhancement works which primarily include doublings, traffic facilities, Railway Electrification and other terminal improvement works. In such a scenario, it may not be feasible to indicate time schedule for all works which have been undertaken more than five years back."

19. When asked about the justification for the introduction of new works particularly when there are scarcity of funds and the progress of ongoing works is tardy, the Ministry of Railways in a reply stated as under:—

"Generally new projects are introduced as per laid down policy but apart from this, many projects are taken up on socio-economic considerations based on demands from elected representatives and the State Government to meet aspiration of the people of the area. Railways are expected to not only function as commercial organization but is also asked to discharge its social obligation for providing easy and economical mode of transport to the general public at large, helping in overall development of economy of area and bringing about National Integration. Railways are conscious of their responsibility towards socio-economic and industrial development of backward areas not connected by reliable transport network. To fulfill this responsibility, the Railways are often required to take up projects, where the returns are much below the level of prescribed bench mark of 14%. Further, the large shelf of projects, particularly under "New Line" and "Gauge Conversion" plan heads, have been as a result of inclusion of many new projects in the past few years without obtaining requisite clearances. However, in order to streamline the procedure of inclusion of works in the budget, Government decided in September, 2001 that no new work is to be included in the budget without obtaining requisite clearances. Accordingly, since then, the projects are being included only after requisite clearances."

20. On being asked whether any change in the criteria for selection of projects is being contemplated so that the project once selected may not suffer due to lack of funding, the Ministry in their reply stated as under:—

"A Working Group had been recently set up consisting of representatives of Ministry of Railways, Ministry of Finance and Planning Commission to evolve out criteria for taking up such socio-economic project. But the fact remains that it is not possible to reject such proposals altogether on the plea of poor resources in wake of persistent public demands raised in various fora including Parliament. The Government is seized with the problems and various ways and means are being explored to tackle the issues of resources."

Generation of Additional Funds

21. As regards the initiatives taken to generate additional resources to complete the Projects on time, the Ministry, in a written reply, informed as under:—

"A number of initiatives have been taken to generate additional resources other than normal Railway's funds to expedite completion of the projects. These include

State sharing, Private partnership, Defence funding, National Projects and Launching of National Rail Vikas Yojana. The surplus internal generation is also being utilized for doubling, Railway Electrification and some of the gauge conversion projects. Minister of Railways has written to the State Chief Minister to share atleast 50% cost of the ongoing projects in their States so as to expedite their completion. Ministry of Railway's endeavour is to complete the ongoing projects in next five years."

22. Elaborating on the subject, one of the representatives of the Ministry of Railways (Railway Board), during evidence deposed as under:—

"The total cost of the projects which were pending as of last year when we did a review before the Cabined was about Rs. 47,000 crore. The total shelf of the projects which were required to be completed and the money which was available to us through budgetary resources was amounting to about Rs. 13,000 crore. Another Rs. 17,000 crore was raised through other sources, like raising money from the market, PPP projects as well as funding from the Defence, and the State Governments chipping in. That left a gap of about Rs. 17,000 crore. The Government at that time and, in fact, our hon. Minister announced in the Budget that we were mooting scheme to meet this gap of about Rs. 17,000 crore to Rs. 18,000 crore by introducing the Remote Area Connectivity Plan. But this could not take off because it required that other States Governments should also participate. But a beginning was made. In fact, the dialogue is still continuing. The Hon'ble Minister of Railways has written to all the State Governments because remote area connectivity is also the requirement put forward by some of the State Governments."

23. The Committee desired to know about the response of the States with regard to sharing the cost of projects undertaken in their territory. In response, the Ministry stated as under:—

"Following State Governments have agreed to share cost of certain projects to be undertaken in their territory on cost sharing basis:

(i) Jharkhand-5 new lines and 1 gauge conversion

(ii) Tamil Nadu-1 gauge conversion

(iii) Haryana-1 new line

(iv) Karnataka-2 new line, 1 gauge conversion and 2 doublings

The matter is being pursued with the State Government in various forums and meetings to share atleast 50% of the cost of projects in their state to expedite completion."

24. The Ministry have informed the Committee that the response of the States however, has not been encouraging.

System of Allocation of Funds to the Prioritized Projects

25. The Ministry have informed the Committee that the system of allotment of funds to the various Projects has been rationalized in March 2005 by prioritizing them into the following four categories:—

(a) Category (I)-Ongoing New Lines and Gauge Conversion projects where progress is more than 60% and throwforward is less than Rs.100 crore (8 projects) Funds required to complete the remaining portion of works : Rs. 286.04 crore.

(b) Category (II)-Viable/operationally required projects (4 projects) Funds required to complete the remaining portion of works: Rs. 426.64 crore.

(c) Category (III)-National Projects, projects in Assam & North East region, cost sharing with State Governments, Defence funded projects and projects covered under Public Private Partnership (24 projects) Funds required to complete the remaining portion of works : Rs. 13,965.46 crore.

(d) Category (IV)-Other ongoing projects of new lines and gauge conversion not covered in above categories (I, II & III) (84 projects) Funds required to complete the remaining portion of works: Rs. 21,384.17 crore.

All category (I) and (II) projects have been planned for completion in 1-2 years. However, in their vetted comments, the Ministry informed that category I and II works are to be completed in next 2 to 3 years.

26. In their vetted comments, Audit have pointed out that the funding of projects is being done on the basis of State-wise formula since 2002-03. This has resulted in taking of works on large number of projects. This indicates that fund allotment is still being done without considering the priorities fixed to complete the ongoing works.

27. Asked about the details of State-wise formula of funding the works of Railways, the Ministry in their written reply stated as under:—

> "The State-wise Formula of funding projects was announced by Minister of Railways in Budget speech 2002-03. As per this formula, the available funds for projects have been distributed based on area of State, population and the throw forward of projects in the State. The weightage given to these criteria are in the ratio of 15%, 15% and 70% respectively. This was done to remove perceived sense of injustice felt by some States in regard to allocation of funds for Railways projects in their State. Since the availability of funds have improved and it has been decided to provide funds for doubling, electrification projects and certain viable projects from internal generation, from 2006-2007 onwards, only new line and gauge conversion projects are being provided funds as per the State-wise Formula."

28. When asked whether equitable distribution of funds among the States would defeat the purpose of prioritizing the works of the Railways, the Ministry in a written reply stated as under:—

> "The equitable distribution of funds among States is not defeating the purpose of prioritization of works. Within the funds allocated to a particular State, further

distribution of funds among the projects of the States is done on the basis of prioritization"

VI. Selection of Financially Unviable Gauge Conversion and New Line Projects

29. According to Audit review, as per the Works Programme 2005-06, sixty-two gauge conversion and eighty-seven new lines projects with a latest estimated cost of Rs. 54,716.65 crore, were in progress over various zonal railways. Analysis of the reasons for taking up these projects, their rate of return, year of sanction, year of commencement and anticipated date of completion for all ongoing gauge conversion and new line projects has revealed that an amount of Rs.19,277.63 crore had been spent on these projects upto March 2005 and further investment of Rs.35,439.02 crore is required to complete these projects. Out of 137 gauge conversion and new line projects for which rate of return (ROR) was available, 133 projects were taken up on various commercial and socio-economic considerations, of which 34 per cent (46 projects) had negative rate of return. Forty-six per cent (61 projects) were unremunerative and had rate of return less than the required rate of 10 per cent (14 per cent for projects introduced from 1993-94 onwards). Only 26 projects had a positive rate of return over and above the required percentage. Out of these 26 projects, the rates of return in five projects were subsequently revised downwards and became less than the prescribed rate of return. It was thus seen that though norms have been established by the railways for selection of projects, 107 out of 133 projects were taken up despite being financially unviable. This has an adverse impact on the financial health of railways.

30. The Ministry of Railways (Railway Board) have informed the Committee that the criteria for declaring a project as financially viable or unviable is as under:—

"Project is considered as financially viable when FIRR is equal to or more than 14% calculated by Discounted Cash Flow (DCF) method. However, projects amenable to market funding are assessed for their bankability wherein the return and the risk aspect of the project is determined by the market forces. This, in turn, will facilitate the availability of debt for the project."

31. On being asked about the reasons for funding financially unviable projects, the Ministry, in their reply, stated as under:—

"Railway is not only a commercial organization but has to sub-serve its objective of providing rail connectivity to backward and under-developed areas for their socio-economic developments and connecting them to the national mainstream. Railway has a bigger role of providing national integration through its vast network. If only commercially viable projects are taken up then the poor and backward areas of the country would never develop."

32. When asked whether the funding of unviable projects resulted in paucity of funds for commercially viable project, the Ministry of Railways, in their reply, stated as under:—

"No, it is with this objective the projects have been prioritized into four categories and allotment of funds is being made taking in view their prioritization. Also, project of the operational necessity which primarily include doubling are being funded through internal resources and no constraint of funds are being faced for them."

33. Asked about the measures taken by Ministry of Railways (Railway Board) to expedite construction of projects that are taken up on commercial considerations, the Ministry in a written reply stated that the following measures have been taken to expedite construction of viable and operationally required projects:—

(i) Funding of operationally required projects through Capital Fund i.e. doubling and some of ongoing Railway Electrification and GC projects.

(ii) Prioritization of projects into various categories.

(iii) Golden Quadrilateral and Port Connectivity projects being implemented through Rail Vikas Nigam Limited (RVNL).

VII. Planning and Execution of Selected Projects

34. Audit studied the project management of four selected projects namely (i) Gauge Conversion of Miraj-Latur section and construction of a new line between Latur and Latur Road in Central Railway (CR); (ii) Gauge conversion Project of Tirupati-Pakala-Katpadi section of South Central Railway (SCR); (iii) Gauge Conversion of Rupsa Bangriposi section of South Eastern Railway (SER); and (iv) Construction of New Line between Dewas and Maksi in Western Railway (WR) with reference to the justifications furnished, decisions taken during the implementation of the projects and project management practices. Audit review revealed that sanction of these projects were without adequate justification. Decisions were taken without keeping in mind the original objectives and the uncertainties in project funding and inadequate project planning had an adverse impact on project implementation.

35. According to Audit the rationale for taking up 'Gauge conversion on the basis of prioritization' included the operating ratio for meter gauge, which was 164 per cent as compared to 80 per cent over broad gauge. The Unigauge policy was clearly aimed at improvement of the overall operating ratio. Hence it was accepted that gauge conversion projects, primarily funded through Capital/Capital fund, could only be justified based on the rate of return.

36. The aforesaid four gauge conversion/New line projects selected by Audit for examination had operational objectives such as avoiding transshipment of cement traffic (CR), providing alternate route (SER, SCR and WR), joining two trunk BG routes (CR,SCR) and providing better transport facilities (SCR, CR). Selection of projects for gauge conversion under the Unigauge Policy was to be done keeping in mind not only the overall policy objectives but also on the basis of their financial viability. It was, however, observed that the rate of return in respect of all the three gauge conversion projects selected (CR,SCR,SER) under unigauge policy were far below the benchmark of 14 per cent prescribed by Railway Board, while the new line project (WR) was taken up despite a negative rate of return. In two cases (SCR, CR) calculation of rate of return was not in accordance with the codal provisions. Out of the four projects selected in audit, two projects (SCR and CR) had been considered earlier by the railways but not

taken up, as they were found unremunerative by survey committees. These financially unviable projects were later taken up under the Unigauge policy. The decision to take up financially unviable projects was not aligned with the spirit of Unigauge Policy objectives.

37. The aforementioned four gauge conversion/new line projects have been discussed in detail as under:

(a) Rupsa-Bangriposi Gauge Conversion Project in South Eastern Railway

38. This project, which was conceived as an alternate to the third line between Kharagpur and Tatanagar, was broken up into two phases, *i.e.*, Phase I – Gauge Conversion of Rupsa-Bangriposi and Phase II- connecting Bangriposi with either Gurumahisani or Dalbhumgarh by laying a new line. While a part of the Phase I (Rupsa-Baripada) was on the verge of completion, the remaining part of Phase I (Baripada-Bangriposi) and the connecting new line from Bangriposi were not sanctioned, thus defeating the original objective. As the project is financially unviable, railways neither have any plans to complete the remaining portion nor to construct the connecting link. An expenditure of Rs. 58.92 crore has been incurred on the portion completed so far. In addition, the Zonal Railway (SER) adopted a mixed track structure instead of conforming to the standard required to run heavy haul trains, thereby defeating the basic objective of providing an alternate route to the heavy haul freight traffic. Unless additional expenditure is incurred on dismantling and relaying of rails of required specifications, it will not be possible to gain the advantages this project was sanctioned for. The ruling gradient of the section over NG was 1 in 100. The Final Location Survey proposed a gradient of 1 in 150 keeping in view the anticipated heavy haul traffic, which was used to justify the project. However, finally the gradient was kept at 1 in 100 (June 2002), as the railways ruled out the possibility of any heavy haul traffic on the route. Due to the gradient of 1 in 100, if railways do decide to run heavy haul traffic on the section in future, as was originally envisaged, it would only be possible with the help of a banking engine, multiple locomotives or consists, which would involve extra expenditure.

39. In response to the aforesaid Audit observation, the Ministry in their advance information, have explained their position as under:—

> "The project was initially planned for Rupsa to Bangriposi with a possible extension to either Dalbhumgarh or Gurumahisani to provide an alternate to the third line between Kharagpur and Tata Nagar. However, gauge conversion of only a part *i.e.* Rupsa – Baripada has been completed and railways have yet to decide on extension of the connecting line. This would defeat the objective of the entire project. An expenditure of Rs. 58.92 crore has been incurred on the portion completed so far. "

40. When asked about the money that will be required for completing the remaining portion of the project and the course of action proposed to be taken to complete the project, the Ministry in Post Evidence Reply, stated as under:—

> "Rupsa-Baripada section has already been completed and balance section is

expected to be completed during 2008-09. The resource position has now improved because of funding certain projects through internal resources. The total initial cost of the project was assessed as Rs.57.94 crore at the time of inclusion of the work in 1995-96 budget. The expenditure incurred upto March'06 is Rs. 55.59 crore Balance Rs. 74.31 crore is required to complete the project. As stated earlier, the objective of taking up gauge conversion of Rupsa-Bangriposi was to serve for development of extremely backward area of Mayurbhanj district of Orissa. It was contemplated that the extension of line upto Dallbhumgarh/ Gurumahisani as and when taken up would provide alternate route between Tatanagar and Kharagpur. The intended benefit for conversion was to serve the backward area and the same has been partially fulfilled by conversion of Rupsa-Baripada section. The survey for extension of this line to Gurumahisani has been completed. As per survey report the cost of 42 km. new line is Rs. 211.47 crore. The time schedule for new line portion is not feasible to be fixed as work is not yet sanctioned."

(b) Miraj-Latur gauge conversion and Latur to Latur Road new line project on Central Railway

41. The gauge conversion project from Miraj to Latur (CR) was conceived to avoid transshipment activities at Kurduwadi station for cement traffic from Wadi to Miraj and to bridge the gap between two existing BG networks of Central and South Central Railways. The project was broken up into four phases from Latur Road-Latur (New line), Latur-Kurduwadi, Kurduwadi-Pandharpur and Pandharpur-Miraj (gauge conversion from NG to BG). The traffic from Wadi to Miraj required gauge conversion between Kurduwadi to Miraj *via* Pandharpur. However, as the project was conceived between Latur Road to Miraj, CR took up the phases Latur Road- Latur (New line) and Latur-Kurduwadi (Gauge conversion) first, though this was not on the route for cement traffic and transshipment was not an issue for this segment. Later on Railway Board asked CR to change the prioritization of phases and take up Kurduwadi-Pandharpur section instead of Kurduwadi—Latur. This, however, would still not help avoid transshipment (one of the primary objectives of Unigauge policy) and the objective of connecting BG networks of Central and South Central Railways would also not be achieved until Pandharpur is connected to Miraj in the last phase. As such none of the operational objectives of this project taken up under the Unigauge Policy will be available to the railways till all the phases are completed.

42. In their response to Audit observation, the Ministry in their Advance information have stated as under:

"Initially, the new line portion from Latur to Latur Road and section from Latur to Kurduwadi was taken up in the first phase. However, later the priority was changed from Latur-Kurduwadi to Kurduwadi—Pandharpur. The problem of transshipment as well as joining two BG links has not been addressed so far."

43. On being asked about the measures initiated to overcome the problems in the implementation of the project, the Ministry in their post evidence reply stated as under:

"As such there is no problem in the GC of Miraj-Latur section. The sections from

Latur-Latur Road, Khurduwadi-Pandharpur and Latur-Osmanabad have also been completed. Further Osmanabad-Kurduwadi is targeted for completed by during 2007-08. Balance section between Pandharpur-Miraj may take another 2 years in completion."

(c) Tirupati-Pakala-Katpadi gauge conversion project in South Central Railway

44. The Railway Board, on the recommendations of the Survey Committee, had earlier rejected the SCR project of gauge conversion of Tirupati-Pakala- Katpadi section, as it had inadequate traffic prospects and only a limited utility in providing an alternative to the existing saturated route of Gudur-Renigunta— Arakkonam to Jolarpettai *via* Katpadi. Despite this, the project was later (1992- 93) sanctioned under the Unigauge policy with the financial justification coming from projected goods traffic. Both the ends of Tirupati-Pakala-Katpadi section *viz*. Gudur-Renigunta-Tirupati as well as Arakkonam-Katpadi- Jolarpettai sections were electrified and commissioned by 1986. Despite being aware of the fact, Railway Board accorded administrative approval for electrification of Tirupati-Pakala-Katpadi section only in June 2003 when the project was on the verge of completion. Hence the converted section could not be opened for goods traffic. Failure to synchronize the work of electrification with the completion of gauge conversion resulted in non-materialization of projected goods earnings of Rs.19.39 crore per annum. Thus it appeared that while the operational objectives of the projects were declared clearly in line with the general policy of enhancing transport capacity and capability of the railways, successive decisions during the design and implementation stages of the projects showed signs of policy drift. Expenditure was thus incurred without the railways getting the intended benefits.

45. The Ministry of Railways in their explanation to the Audit observation have stated as under:—

"The project originally envisaged for goods traffic, could not be opened for goods traffic due to delay in electrification of the section."

46. The Committee asked whether Railways were aware that without electrification of the section, movement of goods traffic would not be possible and if so, why the electrification work was not undertaken simultaneously. In response, the Ministry in their Post Evidence Reply stated as under:—

"The work of gauge conversion of Katpadi-Pakala-Tirupati was included in Budget 1992-93 at a cost of Rs.62 crore which has been completed and commissioned for traffic on 20-08-03. The electrification of the section has been sanctioned as material modification to this project. The anticipated cost now is Rs.175 crore. The work is in progress and is likely to be completed by Mar'07. The contention of Audit is, since the sanction of work of electrification and completion of gauge conversion was not synchronized, it resulted in non-materialization of projected goods earning of Rs.19.39 crore per annum. It is pointed out that this is not the only section which is non-electrified although the adjoining sections are electrified. Hence, the projected earnings as pointed out by Audit at best are only assumptions and hypothecated. However, few goods trains are being run on this section. This small section is presently sandwiched between electrified sections on all sides. This section also provides a 3rd route for the North-south traffic, *i.e*., in addition to Gudur-Chennai-Katpadi (electrified), Gudur-Renigunta-Arakkonam (electrified). Both the existing routes have to negotiate the saturated suburban sections of Chennai-Arakkonam and Arakkonam-Katpadi. Tirupati-Pakala-Katpadi route is shorter and avoids the suburban sections. Electrification of this small section would also avoid traction changing at both the ends, *i.e.*, Tirupati and Katpadi, in view of the remaining sections beyond Tirupati and Katpadi already electrified. With this objective the electrification of Tirupati-Pakala-Katpadi was approved in June'03 at a cost of Rs. 43.03 crore immediately after completion of gauge conversion. It is incorrect to say that the movement of goods traffic on Tirupati-Katpadi section is not feasible till it is electrified. At present the electrification work is in progress but few goods trains are plying on this section. However, with this small section being non-electrified, there are operational problems in movement of goods traffic on account of traction change. It is with this objective of removal of operational bottleneck that the electrification has been sanctioned."

(d) Construction of new line from Dewas to Maksi (36 kms.) in Western Railway

47. The Dewas - Maksi new line project (WR) was initially conceived (1989-90) as a long new line project between Godhra and Maksi to meet the requirement of additional traffic of coal between the two stations. The initial Reconnaissance Survey of the project indicated a positive rate of return and hence the Planning Commission approved (January 1989) the project on operational grounds with the condition that only preparatory work for Final Location Survey, detailed engineering drawings and other actions to firm up the cost and traffic projections etc., should be taken up and they be apprised of the results. However railways commenced (1989-90) the work of Dewas-Maksi section of the project on urgency certificate, far beyond the scope of approval accorded by the Planning Commission. In December 1993 the Godhra-Maksi project showed a negative rate of return in the Final Engineering-cum-Traffic Survey. Hence the work on Dewas-Maksi section was frozen after incurring an expenditure of Rs.10 crore on the project. The railways recommenced the work only on the Dewas-Maksi section (September 1996) on consideration of the investment already made and possibility of encroachment of land already acquired, even though the section had a rate of return of (-) 86.55 per cent. Thus, due to the initial error in starting the work by ignoring the Planning Commission's advice, further investments were made on a highly unremunerative project. The fate of the remaining portion of original new line project is still undecided and the project continues to find place in the Works Programme. Though opened for traffic in November 2002, the new line between Dewas and Maksi is incurring losses in operations.

48. When asked whether it was a typical case of flawed planning of work leading to delayed implementation, Ministry in their written reply stated as under:—

"The construction of new line from Dewas to Maksi in WR was not a case of flawed planning. This work was taken up with the object of moving the traffic directly between the two stations without reversal of engine required in moving *via* Ujjain. While according "In Principle" approval in January, 1989, Planning

Commission had desired that Railways would take in hand works like final location survey, detailed engineering drawings, etc. to firm up the cost and traffic projections and Planning Commission be apprised of the same. Based on this, the work was included in the Budget 1989-90 and work of Dewas-Maksi (36 km.) was taken up in first phase. The same has been completed and commissioned on 31-01-2003. Meanwhile, Audit took objection during 1994-95 as a provisional para. Board during discussions with CAG mentioned that Dewas-Maksi was taken up on operational considerations and Standing Committee had recommended completing the balance work on this section so as to derive benefits for the investment made. It was also mentioned that work on the balance portion, *i.e.*, Godhra-Indore which was then frozen, would be taken up in consultation with the Planning Commission after the review of traffic potential, cost and ROR.

Demands are being continuously received from the State Govt., Elected Representative and the general public for early construction of the balance project. Clearance from Planning commission for the balance portion was sought. It was advised to update the report and follow up the extant procedure for projects costing more than 100 crore Accordingly, survey report was updated and sent to Planning Commission for 'In Principle' approval. Planning Commission, while according 'In Principle' approval has suggested that the provision of third line from Godhra to Dahod may be re-examined in the light of Western Dedicated Freight Corridor coming up. It was examined and accordingly it was decided to process for construction of new line between Dahod and Indore. The cost has been reworked out for Dahod-Indore new BG line for seeking 'In Principle' approval and concurrence of Planning Commission and approval of CCEA. The cost assessed for 200.97 kms. new line between Dahod and Indore is Rs. 678.56 crore This has been approved by Planning Commission and CCEA and the work will be taken up in 2007-08."

49. Audit scrutiny has revealed that decisions in respect of new line and gauge conversion project were taken without keeping in mind the original objectives which resulted in non—achievement of core objectives of the projects. However, in the written information furnished to the Committee, the Ministry of Railways have stated as under:—

"Railway is by and large satisfied with the achievement of desired objectives. The major meter gauge routes have already been converted to broad gauge and are meeting the transport needs. It is accepted that new lines have a large shelf with limited resources but funds are deployed in such a way so as to ensure completion of last mile projects. In some cases works of main portions have already been completed and benefits have been derived *e.g.* Howrah-Amta, Eklakhi-Belurghat, Guna-Gwalior, Guntur-Guntakal and Pendadkallu-Gooty, Bangalore-Hubli, Lumding-Dibrugarh, Rajkot-Veraval. In some other cases, part sections have been completed and the same has provided connectivity to backward belts and other areas thereby providing reliable transport system to the public of the area."

50. In their vetted comments, Audit stated that the reply is general because the

objectives for each new line and gauge conversion project are different and can be achieved only when the projects are completed and commissioned. It was also stated that most of the 149 ongoing gauge conversion/new line projects included in the Works Programme 2005-2006 of the Railways were commenced as long back as 5 to 20 years but the progress was less than 50 per cent.

51. Asked as to how far the Railways have been able to achieve the intended objectives of the projects, the Ministry, in their reply, have stated as under:—

"As regards achieving the intended objectives, it is mentioned that in some cases works of main portions have already been completed and benefits have been derived *e.g.* Howrah-Amta, Eklakhi-Belurghat, Guna-Gwalior, Guntur-Guntakal and Pendadkallu-Gooty, Bangalore-Hubli, Lumding - Dibrugarh, Rajkot-Veraval. In some other cases, part sections have been completed and the same has provided connectivity to backward belts and other areas thereby providing reliable transport system to the public of the area, to name a few:

(i) Peddapally-Karimnagar- Providing connectivity to Karimnagar district over in Andhra Pradesh.

(ii) Pandharpur-Kurduwadi gauge conversion-BG connectivity provided to Kurduwadi, famous pilgrimage center.

(iii) Latur-Latur Road new line:- Broad gauge connectivity provided to Latur, backward area which was affected by major earthquake.

(iv) Gwalior-Bhind conversion-Backward region connected with BG system.

(v) Viramgam-Mahesana conversion-Shorter BG route provided for traffic from Western Gujarat towards North.

(vi) Maksi-Dewas new line: New line has provided a bye-pass line for traffic towards Indore bypassing Ujjain."

52. Explaining the reasons for delay in the fulfillment of objectives, the Ministry, in their written reply, stated as under:—

"The main reason for delay or prolongation of project is on account of huge shelf of projects with limited availability of resources. Even during execution of projects, works sometime get delayed due to various reasons like slow land acquisition, forestry clearance, contract failures, law and order problems etc."

53. The Ministry further enumerated the main reasons for delay in completion of projects as under:—

"(i) Taking up of large number of works with limited funds.

(ii) Mainline works already completed and unimportant branch lines remaining due to lower priority.

(iii) Failure of BOLT scheme.

(iv) Works planned for completion in phases."

54. Asked about the efforts that are being to overcome the constraints faced in this respect, the Ministry stated as under:—

> "Efforts are being made to arrange for the funds required to complete all ongoing New Line and Gauge Conversion works so that the intended objective is realized as early as possible. Large number of initiatives have been taken like State sharing, Public Private Partnership, Defence funding, National projects and launching of National Rail Vikas Yojana to step up resources for expediting implementation of projects. Certain last mile gauge conversion projects are being funded through surplus internal generation. It has been decided to complete ongoing gauge conversion projects in 3-4 years period. The other reason of delay like land acquisition and forestry clearance is being pursued from time to time with State Government. To improve contract and project management, certain modification have been done in the general condition of contract and field units have been given more powers for effective control."

55. The Ministry have further stated that a total of 95 projects under NL & GC have been taken up during preceding and current plan period on socio-economic consideration. Out of this 8 projects have been completed. Main reasons for non-completion are heavy throw forward and constraint of resources.

VIII. Impact of uncertainties of funding on project implementation

56. With regard to the four selected projects, Audit has observed that micro-management of the projects was seriously hampered, as the project authorities could neither accurately estimate the costs involved, nor were they in a position to draw up detailed project schedules. Due to drastic fluctuations in the funding pattern, these projects dragged on unnecessarily. These projects were kept starved of funds, but retained in the works programme by making token provisions resulting in delay in completion and also significant increase in costs.

57. On being asked about the impact of uncertainties of funding on the implementation of the projects, the Ministry in a written note stated as under:—

> "The main reasons for dragging of work has been uncertainty regarding fund in view of huge throw forward of New Lines & Gauge Conversion Projects. However, all GC projects are now being planned for completion in next 2-3 years only. Certain powers *i.e.*, enhancement of tender acceptance powers, sanction of estimates etc. have been delegated to field units. This along with the changes in General Condition of Contract (GCC) such as modification in price variation clause, provision of performance guarantee in lieu of risk and cost etc., have been made for expediting the completion of works".

IX. System of Monitoring

58. For successful execution of any project it is necessary to monitor it closely. Audit scrutiny has revealed that the role of the Railway Board in the monitoring of projects under implementation is not proactive, and once a project is sanctioned for implementation, its monitoring is primarily left to various Zonal Railways. No structures have been created at the Ministry/Board level for monitoring their progress.

The General Managers /Chief Administrative Officers of various zonal railways intimate the progress of works under implementation to the Railway Board through Periodical Confidential Demi-Officials letters (PCDOs) to Member (Engineering). The Railway Board limits its role to responding to specific issues raised by the zonal railways through Periodical Confidential Demi-Officials letters (PCDOs) or otherwise. At the zonal railways level rules provide for preparation of progress report cum financial review of the project, linking the progress of work with the expenditure incurred to facilitate monitoring. These reports are to be prepared and submitted to Chief Engineer and FA&CAO every half-year from commencement of the project. It was seen that half-yearly reports were not prepared in SCR for monitoring the progress of implementation of the projects. 'Works Registers' serve as an important management tool in comparing the expenditure incurred against the provisions made in the estimates for different works. It was seen that 'Works Registers' were not maintained properly and details of work-wise estimates, budget allotments and up-to-date totals for expenditure on all works were not struck, due to which Railways failed to exercise control over the expenditure on these works (CR).

59. When asked about the prevalent system of monitoring of the gauge conversion and new line projects in the railways, the Ministry of Railways (Railway Board) in a written reply stated as under:—

> "The project is regularly being monitored at various levels in the Railway *i.e.* first at the level of Chief Administrative Officer and then at the level of General Manager. At the Board level, the progress is regularly being reviewed through a monthly progress report which indicates the quantum of work done on major activities on each project in the month, target date of completion of various activities of the project, assistance required etc. The Bar-Chart of targeted works is also submitted. Apart from this, review meetings are conducted by the Board officials in Railway Board and Zonal Railways during inspections where progress of projects is discussed. During the meetings, remedial action as necessary for completing the work in time is also deliberated."

60. The Ministry have further stated as under:—

> "To further strengthening the monitoring system, Project Management Information System (PMIS) has been developed in the Board and has been put on trial. This is computerized web-based system and will have the advantage of real time monitoring of projects and related data. It is still under trial, its effectiveness will be known only after it is fully implemented".

61. The Committee desired to know as to whether the reasons for delay in completion of work were due to lack of effective monitoring of the projects. In response, the Ministry stated as under:—

> "Railway had large shelf of projects with very limited funds. The gauge conversion was taken up in a big way from 01.04.1992 and during VIIIth Plan, 6897 kms. was converted with an expenditure of about Rs. 5351.32 crore. However, the pace of conversion slowed down considerably in the IXth Plan and only 2103 kms. were converted. This was mainly due to severe resource constraints

primarily on account of implementation of recommendations of Pay Commission. The outlay under new line had been very less which is established from the fact that only Rs. 1273.04 crore was spent in VIIIth plan and Rs. 2872.85 crore in IXth Plan. In view of the resource constraints, it was not feasible to complete the projects as per their age rather targets were being decided on annual basis keeping in view the priority of projects and other considerations including the actual progress. Most of the projects pending for more than 10 years had low operational priority and were slowed down."

X. Deficiencies in Project Management Practices

62. Economic and efficient implementation of selected projects within a reasonable time frame is axiomatic for deriving their intended benefits. Audit examination of the following selected projects had revealed time and cost overrun and the cost of construction per kilometer against the estimated cost as under:—

(Rupees in crore)

Project	Time overrun	Cost overrun	Estimated cost of conversion/ construction per km	Actual cost of conversion/ construction on per km
Gauge Conversion of Kurduwadi-Pandhar pur section in Central Railway	28 months	36.88 (78%)	0.8870	1.5828
Construction of a new line between Latur and Latur Road in Central Railway	81 months	45.38 (128%)	0.8426	1.9214
Gauge Conversion Project of Tirupati-Pakala-Katpadi section of South Central Railway	69 months	69.8 (73.58%)	0.60	1.25
Gauge Conversion of Rupsa Bangriposi section of south Eastern Railway	Initially, the target date was not fixed. Later fixed as June 2004. Phase 1 not yet open for traffic.	66.90 (115%)	0.60	1.40
Construction of new line between Dewas and Maksi in Western Railway	47 months	10.64 (22.16%)	1.00	1.62

63. Audit scrutiny has revealed the following deficiencies and lapses in implementation of the aforesaid projects leading to time and cost escalations:—

(i) Non-defining of the project schedule,

(ii) Delay in preparation of detailed estimates,

(iii) Lack of co-ordination with the State Governments for acquisition of land,

(iv) Lack of effective monitoring,

(v) Insufficient delineation of the scope of projects leading to material modifications,

(vi) Non-assessment of risks and constraints,

(vii) Unsatisfactory stores management such as delay in procurement of p-way material, excess/advance procurement of material, using higher standard of ballast than planned, delays in disposal of released materials and deficiencies in maintenance of MAS accounts,

(viii) Deficiencies in contract management such as delays in finalization of contracts, delays in execution of projects resulting in increased cost of projects, wide variations in earthwork due to wrong estimations of quantities and granting extensions to the contractors in a routine manner.

64. The Committee enquired as to whether the Ministry of Railways have undertaken any systemic review to rectify the lapses and to implement the project within the stipulated time frame. In response, the Ministry stated as under:—

"The main reason for time and cost overrun has been large shelf of projects with limited availability of resources. Further, there have been demands from various parts of the country to progress projects in their area. To have equitable distribution of funds, the funds to various projects have been allocated on the basis of State-wise formula since 2002-03. This has resulted into taking up works on large number of projects. However, a number of initiatives have been taken to generate additional resources so as to expedite progress of ongoing projects. Further, following steps have been taken to improve contract management and project management on the system:

(a) Modifications in the price variation clause with respect to cement and steel. For variation in the prices of cement and steel, the index has been linked to cement and steel sub group index respectively. This was earlier related to wholesale price index (all commodities).

(b) Provision of Performance Guarantee in lieu of provision of risk and cost.

(c) Enhancement of earnest money.

A programme is being drawn to complete ongoing conversion of works in next 3-4 years for which the matter is under process for consideration of Government."

PART II

Recommendations and Observations of the Committee

65. The Committee note that Indian Railways undertake a large number of construction projects for creation of new assets and upgradation of existing assets for augmentation of existing services as well as extension of services to new areas so as to act as a catalyst for growth for in the far flung undeveloped and under-developed areas of the country. In pursuance of these broad objectives, "Project Unigauge" was launched by Indian Railways in 1992 with the objective of relative conversion of Meter Gauge and Narrow Gauge into Broad Gauge for capacity enhancement and smooth flow of traffic by creating alternate routes to the congested Broad Gauge trunk lines. The National Transport Policy Committee also announced a policy in 1980 for taking up New Line projects for various operational, commercial, social and strategic reasons. The performance review of the Project Management Practices in Railways with regard to Gauge Conversion and New Line Projects had revealed several deficiencies such as – taking up of financially unviable Projects despite well established norms for selection of projects with minimum rate of return; thin spread of resources among large number of ongoing projects leading to time and cost overruns; sanctioning of projects without adequate justification and decisions were taken during implementation unmindful of the original objectives resulting in non-achievement of core objectives underlying the projects; uncertainties in projects funding and inadequate project planning had an adverse impact on the efficiency of Project implementation etc. These along with other important issues have been discussed in detail in the succeeding paragraphs.

[Recommendation Sl. No. 1]

66. The Committee observe that Project management in respect of four projects relating to Gauge Conversion and New Lines that have been examined by Audit has revealed that though the projects were initiated with some definite objectives in view, the decisions at subsequent stages were taken in deviation of the envisaged objectives resulting in non-achievement of core objectives of the projects. In respect of the Rupsa-Bangriposi gauge conversion project on South Eastern Railway the Committee note that the project was conceived as an alternate to the third line between Kharagpur and Tatanagar and was broken into two phases, *i.e.* Phase I—Gauge Conversion of Rupsa-Bangriposi and Phase II – connecting Bangriposi with either Gurumahisani or Dalbhumgarh by laying a new line. While a part of the Phase I (Rupsa-Baripada) was on the verge of completion, the remaining part of Phase I (Baripada-Bangriposi) and the connecting new line from Bangriposi were not sanctioned, thus defeating the original objective. The Ministry in their reply have stated that Gauge Conversion of only a part *i.e.* Rupsa – Baripada has been completed and Railways have yet to decide on extension of the connecting line. In a subsequent reply the Ministry have stated that the balance section is expected to be completed during 2008 – 2009. The Committee

do not accept the Ministry's contention that the intended benefit to serve the backward areas of Orissa has been partially fulfilled by conversion of Rupsa – Baripada section when the entire project was supposed to have been completed within the stipulated period, thereby defeating the original objective. Similarly, in the case of Miraj - Latur gauge conversion and Latur to Latur Road new line projects on Central Railway, the priority of the work was changed from gauge conversion of Latur to Kurduwadi in the first phase to Kurduwadi—Pandharpur as there was demand to provide BG connectivity to famous pilgrim centre of Vithal temple at Pandharpur. This indicates that the prioritization was changed at the later stage thereby defeating the Original objective. However, the Ministry of Railways (Railway Board) in their reply have stated that they are by and large satisfied with the achievement of desired objectives and in some cases works of main portions have already been completed and benefits have been derived. In some other cases, part section have been completed and the same has provided connectivity to backward and other areas thereby providing reliable transport system to the public of the area. The Committee are of the opinion that the objectives for each of New Line and gauge conversion projects are different and can be achieved only when the whole projects are completed and commissioned. The Committee cannot understand as to how the Ministry have been able to achieve the intended objectives while most of the 149 ongoing gauge conversion new line projects included in the Works Programme 2005-2006 of the Railways commenced as long back as 5 to 20 years are less than 50 per cent complete. Partial completion of the projects cannot help to achieve the desired objectives fully. Most of the times, incomplete projects are abandoned and end-up in a fiasco resulting in sheer wastage of public money. The Committee are of the firm opinion that only the complete and commissioned project can help in achieving the envisaged objectives of the projects in-toto. The Committee recommend that the core objectives of the project should be distinctly enunciated and subsequent planning and decision-making should be aligned towards achievement of the stated objectives. Further, clear project schedules should be framed for the projects at the initial stages and completion dates determined. Budget allotments should be adequate and in accordance with the time frames set for completion of the projects.

[Recommendation Sl. No. 2]

67. The Committee are concerned to note that a large number of gauge conversion and new line projects undertaken by Railways have been languishing for decades. An analysis of data regarding 149 ongoing gauge conversion and new line projects included in Works Programme 2005-06 revealed that the cost of these projects, which was originally estimated at Rs. 39,287.13 crore has been revised time and again due to delay in completion and is now estimated at Rs. 54,716.5 crore. In respect of 105 out of 149 ongoing projects, the Progress was less than 50 per cent. In 12 projects the progress was between 75 and 90%. Only in 24 projects the work was more than 90 per cent complete. Due to delay in completion, the cost of the projects which were more than 10 years old had increased three times from Rs. 5,700 crore to Rs. 17,300 crore. However, the Ministry of Railways had allocated only a meagre amount of Rs. 690 crore and Rs. 652 crore on Gauge conversion and new line projects respectively. The Committee feel that at this rate of funding, it will take

another 15 years from now to complete the pending gauge conversion projects and another 38 years to complete the new line projects. The Ministry of Railways have candidly admitted that the completion of projects in time and within the estimated cost is feasible only when timely funding is assured and in the present scenario this is not possible. Based on public demands, a large number of New line and gauge conversion projects have been taken up and as on 1.4.2006, Railways have through forward of projects requiring over Rs. 54,000 crore. The allocation of funds for projects have been increased considerably during 2006-07 but is not adequate to complete all the projects in a reasonable time frame. However, the Ministry of Railways (Railway Board) have informed the Committee that they had rationalized the system of allotment of funds in March, 2005 by prioritizing the various ongoing projects into four categories. All the twelve projects belonging to categories I and II have been planned to be completed in 1-2 years. Going by the current pace at which these projects are progressing, the Committee are quite sceptical about their completion within a span of 1 to 2 years. The Committee, however, expect that the Ministry would come out with a specific action plan for completion of the projects belonging to categories I and II within the stipulated time period of 1 to 2 years. In respect of the other categories, *i.e.* categories III and IV, the Ministry have maintained silence over the target dates for their completion. The Committee recommend that the Ministry should specify the time schedule for completion of the projects belonging to these categories as well. What is disappointing to the Committee is the fact that the Ministry have categorized only 120 projects and did not mention anything about the categorization of the remaining pending projects. The Committee, further recommend that all the pending gauge conversion and new line projects should be categorized and completed within a definite time schedule.

[Recommendation Sl. No. 3]

68. The Committee note that the minimum Rate of Return (RoR) is fixed for various Railway projects to decide their financial viability. Till July 1992, the project proposal whether for gauge conversion or new line, was considered financially justified unless net gain expected out of the proposed outlay, after meeting the work expenses or average annual cost of services, yielded a return of not less than ten per cent under Discounted Cash Flow Method. Later on, the return was revised upwards to 14 per cent from July 1992 onwards. The Committee are perturbed to note that out of 133 projects that were taken up on various commercial and socio-economic considerations 34 per cent (46 projects) had negative rate of return and 46 per cent (61 projects) were unremunerative and had Rate of Return (RoR) less than the prescribed rate. Thus 107 out of 133 projects were taken up by Railways despite being financially unviable and in contravention of established norms of minimum Rate of Return (RoR). This obviously has an adverse impact on the health of Railways. The Ministry of Railways have informed the Committee that Railways are not only a commercial organization but has to subserve its objective of providing rail connectivity to backward and under-developed areas for their socio-economic development. To fulfil this responsibility, Railways are, therefore, often required to take up projects , where the returns are much below the level of prescribed Rate of Return (RoR) of 14%. The Committee note that out of 95 projects that were taken up on socio-economic

considerations during 9th and 10th Plans only 8 projects have been completed so far, which is anything, but regrettable. The Committee are of the opinion that though the efforts of the Railways for providing connectivity to under- developed/undeveloped and backward regions of the Country on socio-economic considerations are well intended and appreciated, however, thin spread of resources or lack of funds to these projects had led to abnormal delay ranging from 5 years to 20 years and consequent cost overruns thereby defeating the very purpose of their commencement. This has resulted not only in sheer wastage of public money but also deprives other commercially viable projects that are important from operational point of view, the much needed funds for their early completion. The Committee are of the considered view that the project once started should be completed within specified time-period otherwise the very purpose of selection of the projects on the plea of connecting backward, under-developed and remote areas gets defeated. The Committee are informed that a Working Group consisting of representatives of the Ministries of Railways and Finance and Planning Commission has been set up to evolve out criteria for taking up various railways projects on socio-economic consideration. The Committee recommend that the Working Group should not only lay down the criteria for taking up future Railways Projects on Socio-economic consideration, but also review all the ongoing new line and gauge conversion projects that were taken on socio-economic consideration by Railways and are pending completion. As far as possible, only such projects which are substantially complete and have a reasonable through forward should be continued and the rest of them may be shelved. The Committee would like to be apprised of the progress made by the Working Group in this regard within 3 months from the date of the presentation of this report.

[Recommendation Sl. No. 4]

69. Another disquieting feature relating to Project Management in Railways relates to uncertainties in funding of the four selected projects. As a result of this micro-management of the projects was seriously hampered and the project authorities could neither accurately estimate the costs involved nor were they in a position to draw up detailed project schedules. Due to drastic fluctuations in the funding pattern, these projects dragged on unnecessarily. These projects were kept starved of funds, but retained in the works programme by making token provisions resulting in delay in completion and also significant increase in costs. Though these gauge conversion projects were taken up more than ten years back only 42 per cent to 84 per cent of the work has been completed. While the survey reports in gauge conversion projects generally prescribed a total time frame of four to five years for completion, it was seen that the level of funding in most of these projects have been much below Rs. 5 crore per year in the first five years and even subsequently there have been drastic fluctuations in the funding pattern. Thus there was no possibility of these projects getting completed within the prescribed time frame. While accepting that the main reason for dragging of work has been the uncertainty regarding the availability of fund, the Ministry of Railways have stated that they have initiated several steps such as enhancement of tender acceptance powers, delegation of the power of sanction of estimates etc. to field units and changes in General Condition of Contract (GCC) such as modification in price variation clause, provision of performance guarantee in

lieu of risk and cost etc., for expediting the completion of works. The Ministry have stated that all gauge conversion projects are now being planned for completion in next 2 to 3 years. The Committee express the hope that the measures taken by the Railways would bear fruit and leads to desirable results. The Committee would like to be apprised of the progress of all the aforesaid projects within 3 months from the presentation of the Report. The Committee further recommend that Railways should plan the projects in a more comprehensive manner. The scope of the project, technical specifications, quantities and cost estimates should be accurately delineated on the basis of parameters brought out in technical surveys so as to ensure smoother project implementation within the estimated cost and time.

[Recommendation Sl. No. 5]

70. The Committee note that as per the Ministry's own admission the total cost required for the completion of pending projects as on 1.4.2006 is Rs. 54,000 crore and the money available to the Ministry through Budgetary resource is stated to be Rs. 13,000. crore. Another Rs. 17,000 crore is being planned to raise from the market, Public Private Partnership, Ministry of Defence and the State Governments. For the mobilisation of remaining funds, a scheme namely "Remote Area Rail Sampark Yojana" has been formulated envisaging an investment to the tune of Rs. 20,000 crore in the next 5 years to complete the 60 sanctioned New Line and Gauge Conversion Projects. The Committee was informed that the Minister of Railways had written to all the State Chief Ministers requesting them to share at least 50% of cost of the ongoing projects in their States for their early completion. However, response of the States has been stated to be not encouraging. Only four States namely Jharkhand, Tamil Nadu, Haryana and Karnataka have agreed to the proposal in respect of 8 New Line, and 3 Gauge Conversion Projects. The Committee desire that the Ministry of Railways (Railway Board) should pursue the matter with all the other concerned State Governments vigorously and convince them to provide funds to the projects in their own interest. The Committee hope and trust that the Ministry would leave no stone unturned in pursuing the matter with the State Governments and desire that the Committee may be informed of the steps taken and the outcome of these efforts.

[Recommendation Sl. No. 6]

71. Monitoring is a sine qua non for successful completion of any project and Railways are no exception to it. The Committee, therefore, are constrained to note that role of Railway Board in monitoring of implementation of various ongoing projects is not proactive. Once a project is sanctioned, it is primarily left to the various zonal railways for monitoring and no structures have been created at the Ministry/Board level for regular monitoring of their progress. The Railway Board's role is being limited to responding to specific issues raised by the zonal railways through Periodical Demi-Officials letters (PCDOs) or otherwise. Even at the zonal railway level the progress report cum-financial review which is used as an important monitoring tool for reviewing the projects is not being prepared. In some Railway Zones, the 'Works Registers' were not being maintained properly and details of work-wise estimates, budget allotments and upto-date totals for expenditure on all works were not struck due to which Railways failed to exercise control over expenditure on these works. In

a written reply, the Ministry of Railways have contended that at Board level the progress of each project is regularly reviewed through a monthly progress report. Apart from this review, meetings are conducted by Board officials. It has further been stated that they have now developed a Project Management Information System (PMIS), which is computerized web-based system that can monitor projects and related data on a real time basis. This is still under trial and is yet to be fully implemented. The Committee hope that Railway Board would be able to monitor the ongoing projects effectively through PMIS system so that they may be completed within the estimated cost and stipulated time. The Committee would also like to be apprised of the efficacy of the PMIS as a monitoring tool within three months of the presentation of the Report. The Committee also recommend that the Ministry should ensure strict observance of codal provisions for maintenance of information systems and documentation at the zonal level so as to enable proper monitoring of the projects.

[Recommendation Sl. No. 7]

NEW DELHI;
23 *November*, 2007
2 *Agrahayana*, 1929 (*Saka*)

PROF. VIJAY KUMAR MALHOTRA,
Chairman,
Public Accounts Committee.

ANNEXURE – I

MINUTES OF THE FOURTEENTH SITTING OF PUBLIC ACCOUNTS COMMITTEE (2006-2007) HELD ON 31st OCTOBER, 2006

The Committee sat from 1100 hrs. to 1245 hrs. on 31st October, 2006 in Committee Room "A", Parliament House Annexe, New Delhi.

PRESENT

Prof. Vijay Kumar Malhotra — *Chairman*

MEMBERS

Lok Sabha

2. Shri Khagen Das
3. Shri P.S. Gadhavi
4. Shri R.L. Jalappa
5. Shri Bhartruhari Mahtab
6. Shri Brajesh Pathak
7. Prof. M. Ramadass
8. Shri Kharabela Swain
9. Shri K.V. Thangkabalu
10. Shri Tarit Baran Topdar

Rajya Sabha

11. Shri Janardhana Poojary
12. Shri Suresh Bhardwaj
13. Shri Prasanta Chatterjee
14. Dr. K. Malaisamy
15. Shri Ravula Chandra Sekar Reddy

SECRETARIAT

1.	Shri A. Mukhopadhyay	—	*Joint Secretary*
2.	Shri Ashok Sarin	—	*Director*
3.	Shri M.K. Madhusudhan	—	*Deputy Secretary*
4.	Shri R.K. Suryanarayanan	—	*Assistant Director*

Officers of the Office of C&AG of India

1.	Shri Kanwal Nath	—	DAI
2.	Ms. Subhashini Srinivasan	—	Principal Director (Railways)

Representatives of Ministry of Railways (Railway Board)

1.	Shri J.P. Batra	—	Chairman, Railway Board
2.	Shri R. Sivadasan	—	Financial Commissioner (Railways)
3.	Shri R.R. Jaruhar	—	Member, Engineering

2. At the outset, the Chairman, welcomed the Members of the Committee to the sitting.

*** *** ***

3. The Committee were then briefed by Audit Officers on Chapter-I of Audit Report No. 5 of 2006 (Union Government—Railways) relating to "Project Management Practices in Gauge Conversion and New Line Projects". The Chairman, Railway Board and other senior officers of the Ministry of Railways (Railway Board) were then called and the Committee commenced their oral evidence.

4. To begin with, the Chairman, Railway Board gave an overview of the Government's policy on the subject and explained the various points arising out of the Audit Paragraphs. The Member, Engineering of Railway Board also supplemented the presentation of Chairman, Railway Board and explained in detail the Audit objections. Members then raised some queries in the issues brought out in these Audit Paragraphs. To certain queries, for which the witnesses could not give satisfactory reply, the Hon'ble Chairman directed the Railway Board Chairman to furnish the requisite information in writing at the earliest.

5. A copy of the verbatim proceedings of the sitting has been kept on record.

The Committee then adjourned.

ANNEXURE – II

MINUTES OF THE THIRTEENTH SITTING OF PUBLIC ACCOUNTS COMMITTEE (2007-2008) HELD ON 23rd NOVEMBER, 2007

The Committee sat from 1600 hrs. to 1630 hrs. on 23rd November, 2007 in Room No. 51 (Chairman's Chamber), First Floor, Parliament House, New Delhi.

PRESENT

Prof. Vijay Kumar Malhotra — *Chairman*

MEMBERS

Lok Sabha

2. Shri Kirip Chaliha
3. Shri Khagen Das
4. Shri Raghunath Jha
5. Shri Bhartruhari Mahtab
6. Shri Brajesh Pathak
7. Shri Rajiv Ranjan 'Lalan' Singh

Rajya Sabha

8. Shri V. Narayanasamy
9. Shri Prasanta Chatterjee

SECRETARIAT

1.	Shri S.K. Sharma	—	*Additional Secretary*
2.	Shri A. Mukhopadhyay	—	*Joint Secretary*
3.	Shri M.K. Madhusudhan	—	*Deputy Secretary-II*
4.	Shri Ramkumar Suryanarayanan	—	*Under Secretary*

Representative of the Office of the Comptroller and Auditor General of India

Shri Nand Kishore — Pr. Director of Audit (AB)

2. At the outset, the Chairman, PAC welcomed the Members and Audit Officers to the sitting of the Committee. Thereafter, the Committee took up for consideration and adoption the following draft Reports:

(i) *** *** ***

(ii) Draft Report on Chapter 1 of C&AG's Report No. 5 of 2006, Union Government (Railways) relating to "Project Management Practices in Gauge Conversion and New Line Projects"; and

(iii) *** *** ***

3. After some deliberations, the Committee adopted these draft Reports without any amendments/modifications and authorized the Chairman to finalize and present the same to Parliament in the light of factual verification, if any, done by the Audit.

The Committee then adjourned.

Appendix-I

Chapter-I of Report No. 5 of 2006 of C&AG of India for the year ended March 2005, Union Government (Railways), relating to "Project Management Practices in Gauge Conversion and New Line Projects".

CHAPTER-I

Project Management Practices in Gauge Conversion and New Line Projects

1.1 Highlights

* Although norms have been established by the railways for selection of projects,including a minimum rate of return, 107 out of 133 projects were taken up despite being financially unviable.

(Para 1.7.2)

* At the present rate of funding the railways would require another 15 years to complete the pending gauge conversion projects and 38 years to complete the pendig new line projects. Despite this railways introduced 103 new projects during the last ten years. In 71 projects even firm dates of commissioning were not projected.

(Para 1.7.1)

* Projects were sanctioned without adequate justification and decisions were taken during implementation without keeping in mind the original objectives as a result of which the core objectives underlying the projects could not achieved.

(Para 1.8)

* Uncertainties in project funding and inadequate project planning had an adverse impact on the efficiency or project implementation, which resulted in non/delayed delivery expected benefits.

(Para 1.8)

* Delays in preparation of detailed estimates, lack of co-ordination with State Governments for acquisition of land, insufficient delineation of the scope of projects, deficiencies in contracts and store management and weak monitoring mechanism contributed to time and cost overruns in the selected projects.

(Para 1.9)

1.2 Gist of recommendations

* Railways should ensure that the system and the norms established for selection of technically and financially viable projects are kept in view in future before any fresh projects are taken up.

* Railways should work out a clear plan for completion of all the pending projects within a reasonable time frame.
* The core objectives of the project should be distinctly enunciated and subsquent planning and decision-making should be aligned towards achievement of the stated objectives.
* Clear project schedules should be framed for the projects at the initial stages and completion dates determined. Budget allotments should be in accordance with the time frames set for completion.
* Railways should plan the projects in a more comprehensive manner. The scope of the project, technical specifications, quantities and cost estimates should be accurately delineated on the basis of parameters brought out in technical surveys so as to ensure smoother project implementation within the estimated cost and time.
* Railways need to strictly observe the codal provision in planning and execution of projects. Risk areas such as land acquisition and estimation of materials and earthwork quantities need to be carefully controlled.
* Railways need to evolve structures for closer monitoring of projects at the Ministry level. Strict observance of codal provisions for maintenance of information systems and documentation at the implementation level should be ensured.

1.3 Introduction

Indian Railways undertake a large number of construction projects for creation of new assets and upgradation of existing assets for augmentation of services. Over the years there has been a substantial increase in the capital outlay on gauge conversion projects [conversion of Narrow Gauge (NG)/ Metre Gauge (MG) lines to Broad Gauge (BG)] and construction of new lines projects over Indian Railways. Gauge conversion projects in 2003-2004 accounted for about seven per cent of the total capital outlay of the Indian Railways while new lines projects were allocated ten per cent. The Works Programme of the Indian Railways during 2005-2006 included 87 new line and 62 gauge conversion projects aimed at adding 9,234 kms of new lines and converting 13,528 kms of metre gauge/narrow gauge lines into broad gauge. As the primary objective of these projects is to increase the efficiency of railways, proper planning, efficient execution and effective monitoring become imperative for completion of these works on time and for achieving their objectives. Various committees of Parliament and other studies have repeatedly emphasized the need for railways to prioritise their projects for best application of resources.

'Project Unigauge' was launched by Indian Railways on 1 April 1992 with the objective of selective conversion of metre gauge and narrow gauge to broad gauge for providing additional transport capacity and creating alternates routes to the congested BG trunk lines, in addition to industrial and economic growth of the respective areas. 'Gauge conversion on the basis of prioritisation' was aimed at providing alternatives to the existing congested routes and minimising transport bottlenecks and transshipment hazards, thereby enhancing the capacity and capability of the railways. At the time when the Unigauge policy was adopted, 38 per cent of the total route length of Indian Railways was on metre gauge and 6.5 per cent on NG. The Ministry of Railways (Ministry) decided in 1992 to formulate an action plan for converting more than 11,000 kms of MG/NG routes into BG. (6,000 kms during 8th Five Year Plan 1992-97 and 5,000 kms during 9th Five Year Plan 1997-2002).

Construction of new lines, on the other hand, is undertaken for various operational, commercial or social/strategic reasons. No proposal, whether for gauge conversion or new line, is considered financially justified unless net gain expected out of the proposed outlay, after meeting the working expenses or average annual cost of services, yields a return of not less than ten per cent under discounted Cash Flow method (14 per cent from July 1992).

1.4 Audit objectives

The performance review of project management practices in gauge conversion and new line projects was carried out with a view to assess.

* whether the system for selection of projects ensured most effective use of railways resources by prioritizing projects in terms of objectives, expected returns and availability of funds;
* whether the planning and scope of the projects and their sub-projects enabled achievement of their objectives;
* whether the projects were executed according to the time schedule and available resources following the best project management practices; and
* whether value for money was realised by achievement of the objectives of the projects as envisaged.

1.5 Audit methodology and scope

In order to assess the system of project selection and prioritisation, macro data in respect of on-going gauge conversion and new lines projects was analysed. In view of the similarity of project practices and common systems, instructions and guidelines prevailing over the different zonal railways, four representative projects were selected for detailed examination in order to assess whether the projects have been managed towards achieving their objectives in the most economic, efficient and effective manner.

The pre-execution activities in respect of the four selected cases have been reviewed in detail to corroborate the audit conclusions derived from the analysis of macro data. Performance of these four projects has been evaluated during the period from initiation of the project to its execution. Records relating to justification and sanction of these works, planning, budget allotments and funds utilization, execution through contracts, procurements and monitoring were reviewed in zonal railways and the Railway Board for collection of audit evidence in support of audit conclusions.

1.6 Acknowledgement

The audit plan including the audit objectives were discussed by Principal Directors of Zonal Railway Audit Offices in meetings with the respective General Manager/CAO (Construction)/Financial Adviser and Chief Accounts Officer (FA&CAO) in the entry and exit conferences. The co-operation of the Ministry of Railways during the meetings and in the course of audit is acknowledged. Audit recommendations were discussed by Deputy Comptroller and Auditor General of India (Railways) with the Chairman Railway Board and other Board Members. The review note was issued to the Ministry of Railways in December 2005.

1.7 System of selection and funding of projects in Indian Railways

Proposals for taking up new projects, usually on the basis of Engineering and Traffic Survey results, are forwarded by zonal railway administration to the Railway Board. These proposals are expected to include financial justification, abstract estimates and techno-economic feasibility reports in support. The Railway Board has powers to approve projects estimated to cost upto Rs. 100 crore. Projects estimated to cost Rs. 100 crore and above are required to be put up for approval of the Cabinet Committee on Economic Affairs, duly recommended by the Expanded Board for Railways[1]. Once the projects are approved, they are included in the Works Programme accompanying the Railway Budget for seeking approval of the Parliament. In case of new line projects, a Final Location Survey is carried out for preparation of detailed estimates and zonal railways take up the work only after the approval of the detailed estimates by the Railway Board.

Audit observed that the system of selection and funding of gauge conversion and new line projects in Indian Railways had the following deficiencies:

* A large number of projects were taken up by the Railways without prioritisation and sometimes even without projecting firm dates of commissioning. As a result available resources were spread thinly and the projects are likely to drag on for several years.
* A large proportions of projects were introduced despite uneconomical rate of returns.

1.7.1 Lack of prioritisation in selection and funding of projects

The Works Programme for the year 2005-06 includes works for gauge conversion, new line, track doubling, electrification, signalling and telecom, road safety, traffic facilities, track renewal, bridge works etc. Gauge conversion and new line works are high value projects. Data regarding 149 on-going gauge conversion and new line projects included in the Works Programme 2005-06 was

[1]This Board has been set up to consider investment proposals of Railways of Rs. 100 crore and above. This Board, in addition to Chairman and Members of the Railway Board includes Financial Commissioner (Railways), Secretary (Expenditure), Ministry of Finance, Secretary (Programme Implementations) and Secretary (Planning Commission) as members.

analyzed to assess the time taken on these projects and the extent of funding over the years as follows:—

Age-wise profile of projects

Age profile	Number of Gauge Conversion projects	Actual expenditure upto 2004-05 (Rs. in crore)	Throw forward (Rs. in crore)	Number of New Line projects	Actual expenditure upto 2004-05 (Rs. in crore)	Throw forward (Rs. in crore)
More than 20 years	0	0	0	10	3254.86	382.54
More than 10 years but less than 20 years	20	4445.29	1407.42	16	3936.53	6934.05
More than 5 years but less than 10 years	36	4563.44	6540.38	47	2713.66	13338.44
Less than 5 years	6	24.15	2469.38	14	339.70	4366.81
Total	62	9032.88	10417.18	87	10244.75	25021.84

As can be seen from the table, railways have a large number of projects, which have been going on for decades. The cost of these projects, originally estimated at Rs. 39,287.13 crore has been revised again and again, primarily due to delays in completion, and is now estimated at Rs. 54,716.65 crore[2]. Out of the 149 on-going projects shown in the Works Programme 2005-06, in 105 projects the physical progress was below 50 per cent, in 12 projects the progress was between 50 and 75 per cent and in 8 projects the progress was between 75 and 90 per cent. Only 24 projects were more than 90 per cent complete. In respect of 25 gauge conversion and 46 new line projects the target dates of completion had not been fixed so far (March 2005).

Railway outlay on gauge conversion and new line projects during 2005-06 was only Rs. 690 crore and Rs. 652 crore respectively. At this rate of funding it will take the railways another 15 years from now to complete the pending gauge conversion projects and another 38 years from now to complete the pending new line projects. It was also seen that even while a large number of earlier projects remained incomplete, railways introduced 42 gauge conversion and 61 new lines projects over the last ten years. Lack of prioritization results in over stretching and unsystematic allocation of funds which impacts not only the macro management of railway projects but also adversely affects the efficient management of individual projects and deprives the public of the benefits from the investments already made on these incomplete projects.

1.7.2 Selection of financially unviable gauge conversion and new line projects

As per the Works Programme 2005-06, sixty-two gauge conversion and eighty-seven new lines projects with a latest estimated cost of Rs. 54,716.65 crore, are in progress over various zonal railways. Reasons for taking up these projects, their rate of return, year of sanction, year of commencement and anticipated date of completion for all ongoing gauge conversion and new line projects were compiled and analysed.

[2]Latest revised estimated cost of works.

It was seen that an amount of Rs. 19,277.63 crore had been spent on these projects upto March 2005 and further investment of Rs. 35,439.02 crore is required to complete these projects. Audit observed that out of 137 gauge conversion and new line projects[3] for which Rate of Return (RoR) was available, 133 projects were taken up on various commercial and socio-economic considerations, of which 34 per cent (46 projects) had negative rate of return. Forty-six per cent (61 projects) were unremunerative and had rate of return less than the required rate of 10 per cent (14 per cent for projects introduced from 1993-94 onwards). Only 26 projects had a positive rate of return over and above the required percentage. Out of these 26 projects, the rates of return in five projects were subsequently revised downwards and became less than the prescribed rate of return.

It was thus seen that though norms have been established by the railways for selection of projects, 107 out of 133 projects were taken up despite being financially unviable. This has an adverse impact on the financial health of railways.

During discussions the Ministry generally accepted the audit observations and stated that the issues raised in the review are also an area of concern in the Ministry. Recently the Ministry of Railways has made efforts to re-prioritise the projects in various categories out of which the highest priority is being given to projects which are substantially complete and where the throw forward was less than Rs. 100 crore. Another category of projects, which are financially viable and operationally required, is also to be taken up on priority. The Ministry also stated that it would be possible to complete these two categories of projects within the next 2 to 5 years, even at the present level of funding. However, audit noted that the two categories mentioned by the Railway administration covers only 12 out of the total shelf of gauge conversion and new line projects and for the remaining projects which have a throw forward of over Rs. 40,000 crore, there is no clear plan with the railways for obtaining resources.

Recommendations

- Railways should ensure that the systems and the norms established for selection of technically and financially viable projects are kept in view in future before any fresh projects are taken up.
- Railways should work out a clear plan for completion of all the pending projects within a reasonable time frame.

1.8 Planning and execution of selected projects

Audit studied the project management of four selected projects[4] starting with the justification furnished, decisions taken during the implementation of the projects

---

[3]Rate of returns in respect of four gauge conversion and eight new line projects not available.

[4] Gauge Conversion of Kurduwadi-Pandharpur section and construction of a new line between Latur and Latur Road in Central Railway (CR).

Gauge Conversion Project of Tirupati-Pakala-Katpadi section of South Central Railway (SCR).

Gauge Conversion of Rupsa Bangriposi section of South Eastern Railway (SER).

Construction of New Line between Dewas and Maksi in Western Railway (WR).

and project managment practices so as to corroborate the audit conclusions derived from the above analysis.

Audit noted that sanction of projects without adequate justification and decisions taken without keeping in mind the original objectives, uncertainties in project funding and inadequate project planning had an adverse impact on project implementation.

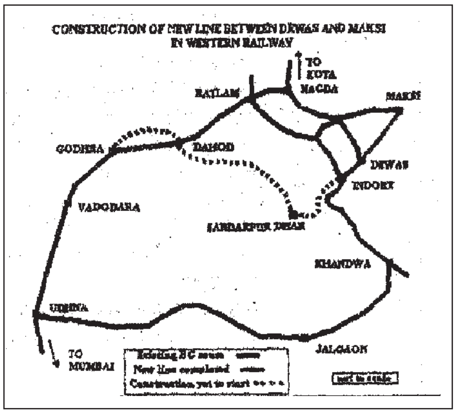
1.8.1 Inadequate justification for sanction of projects

Gauge conversion projects were taken up by the railways under the Unigauge policy which was aimed at providing additional transport capacity and creating alternate routes to the congested BG trunk lines in addition to industrial and economic growth of the region at a relatively low cost. The rationale for taking up 'Gauge conversion on the basis of prioritization' included the operating ratio for meter gauge, which was 164 per cent as compared to 80 per cent over broad gauge. The Unigauge policy was clearly aimed at improvement of the overall operating ratio. Hence it was accepted that gauge conversion projects, primarily funded through Capital/Capital fund, could only be justified based on the rate of return.

The four gauge conversion/new line projects selected for detailed audit had operational objectives such as avoiding transhipment of cement traffic (CR), providing an alternative route (SER, SCR and WR), joining two trunk BG routes (CR, SCR) and providing better transport facilities (SCR, CR). Selection of projects for gauge conversion under the Unigauge policy was to be done keeping in mind not only the overall policy objectives but also on the basis of their financial viability. It was, however, observed that the rate of return in respect of all the three gauge conversion projects selected (CR, SCR, SER) were far below the benchmark of 14 per cent prescribed by Railway Board, while the new line project (WR) was taken up despite a negative rate of return. In two cases (SCR, CR) calculation of rate of return was not in accordance with the codal provisions. Out of the four projects selected in audit, two projects (SCR and CR) had been considered earlier by the railways but not taken up, as they were found unremunerative by Survey Committees. These financially unviable projects were later taken up under the Unigauge policy. The decision to take up financially unviable projects was not aligned with the spirit of the Unigauge policy.

1.8.1.1 Construction of new line from Dewas to Maksi (36 kms.) in Western Railway

The Dewas-Maksi new line project (WR) was initially conceived (1989-90) as a long new line project between Gohra and Maksi to meet the requirement of additional traffic of coal between the two stations. The initial Reconnaissance Survey of the project indicated a positive rate of return and hence the Planning Commission approved (January, 1989) the project on operational grounds with the condition that only preparatory work for Final Location Survey, detailed engineering drawings and other actions to firm up



the cost and traffic projection etc., should be taken up and they be apprised of the results. However railways commenced (1989-90) the work of Dewas-Maksi section of the project on urgency certificate, far beyond the scope of approval accorded by the Planning Commission. In December 1993 the Godhra-Maksi project showed a negative rate of return in the Final Engineering-cum-Traffic Survey. Hence the work on Dewas-Maksi section was frozen after incurring an expenditure of Rs. 10 crore on the project. The railways recommenced the work only on the Dewas-Maksi section (September 1996) on consideraion of the investment already made and possibility of encroachment of land already acquired, even though the section had a rate of return of (-) 86.55 per cent. Thus, due to the initial error in starting the work by ignoring the Planning Commission's advice, further investments were made on a highly unremunerative project.

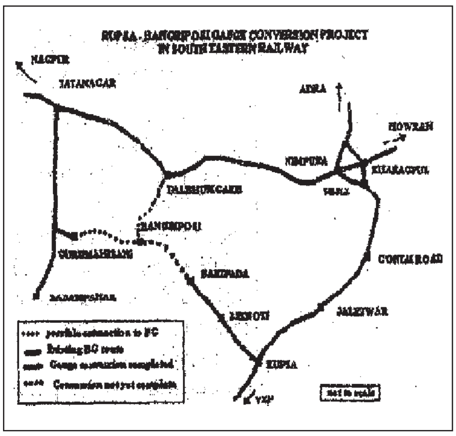
The fate of the remaining portion of original new line project is still undecided and the project continues to find place in the Works Programme. Though opened for traffic in November 2002, the new line between Dewas and Maksi is incurring losses in operations.

1.8.2 Decisions not aligned with original objectives

Audit observed that while taking decisions on planning and execution of the projects, the original objectives were often lost sight of, which resulted in defeating the basic objective underlying the projects.

1.8.2.1 Gauge conversion of Rupsa-Bangriposi section (89 kms.) in South Eastern Railway

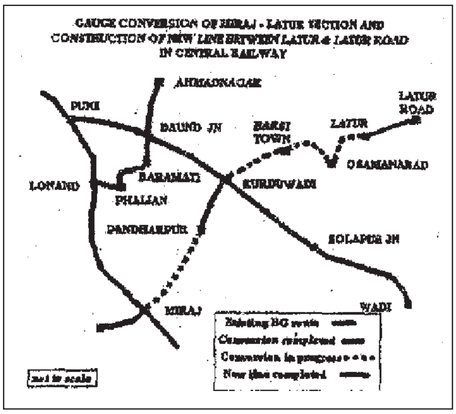
This project, which was conceived as an alternate to the third line between Kharagpur and Tatanagar, was broken up into two phases, *i.e.*, Phase I—Gauge Conversion of Rupsa-Bangriposi and Phase II connecting Bangriposi with either Gurumahisani or Dalbhumgarh by laying a new line. While a part of the Phase I (Rupsa-Baripada) was on the verge of completion, the remaining part of Phase I (Baripada-Bangriposi) and the connecting new line from Bangriposi were not sanctioned, thus defeating the original objective. As the project is financially unviable, railways neither have any plans to complete the remaining portion nor to construct the connecting link. An expenditure of Rs. 58.92 crore has been incurred on the portion completed so far.



In addition, the Zonal Railway (SER) adopted a mixed track structure instead of conforming to the standard required to run heavy haul trains, thereby defeating the basic objective of providing an alternate route to the heavy haul freight traffic. Unless additional expenditure is incurred on dismantling and re-laying of rails of required specifications, it will not be possible to gain the advantages this project was sanctioned for. The ruling gradient of the section over NG was 1 in 100. The Final Location Survey proposed a gradient of 1 in 150 keeping in view the anticipated heavy haul traffic, which was used to justify the project. However, finally the gradient was kept at 1 in 100 (June 2002), as the railways ruled out the possibility of any heavy haul traffic on the route. Due to the gradient of 1 in 100, if railways do decide to run heavy haul traffic on the section in future, as was originally envisaged, it would only be possible with the help of a banking engine, multiple locomotives or consists[5], which would involve extra expenditure.

1.8.2.2 Gauge conversion of Miraj-Latur section (332 kms.) and construction of new line between Latur and Latur Road (42 kms.) in Central Railway

The gauge conversion project from Miraj to Latur (CR) was conceived to avoid transshipment activities at Kurduwadi station for cement traffic from Wadi to Miraj and to bridge the gap between two existing BG networks of Central and South Central Railways. The project was broken up into four phases from Latur Road-Latur (New line), Latur-Kurduwadi, Kurduwadi-Pandharpur and Pandharpur-Miraj (gauge conversion from NG to BG). The traffic from Wadi to Miraj required gauge conversion between Kurduwadi to Miraj *via* Pandharpur. However, as the project was conceived between Latur Road to Miraj, CR took up the phases Latur Road Latur (New line) and Latur-Kurduwadi (Gauge conversion) first, though this was not on the route for cement traffic and transhipment was not an issue for this segment. Later on Railway Board asked CR to change the prioritization of phases and take up Kurduwadi-Pandharpur section instead of Kurduwadi-Latur. This, however, would still not help avoid transhipment (one of the primary objectives of Unigauge policy) and the objective of connecting BG networks of Central and South Central Railways would also not be achieved until Pandharpur is connected to Miraj in the last phase. As such none of the operational objectives of this project taken up under the Unigauge Policy will be available to the railways till all the phases are completed.

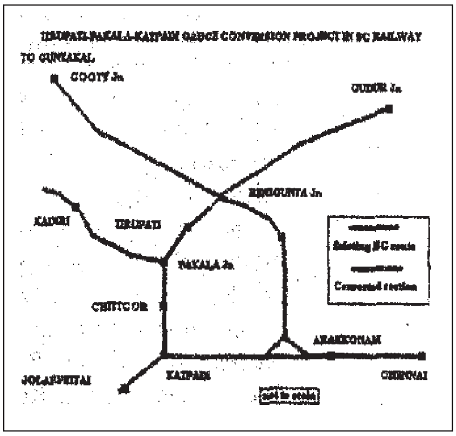


1.8.2.3 Gauge conversion of Tirupati-Pakala-Katpadi section (104 kms.) in South Central Railway

The Railway Board, on the recommendations of the Survey Committee, had earlier rejected the SCR project of gauge conversion of Tirupati-Pakala-Katpadi section, as it had inadequate traffic prospects and only a limited utility in providing an alternative to the existing saturated route of Gudur-Renigunta-Arakkonam to Jolarpettai *via*

[5]. Consist—Combination of three locomotives to haul the train.

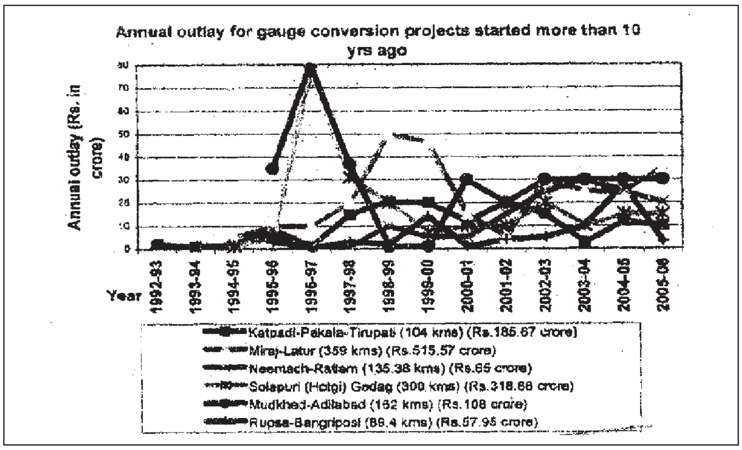
Katpadi. Despite this the project was later (1992-93) sanctioned under the Unigauge policy with the financial justification coming from projected goods traffic. Both the ends of Tirupati-Pakala-Katpadi section *viz.* Gudur-Renigunta-Tirupati as well as Arakkonam-Katpadi-Jolarpettai sections were electrified and commissioned by 1986. Despite being aware of the fact, Railway Board accorded administrative approval for electrification of Tirupati-Pakala-Katpadi section only in June 2003 when the project was on the verge of completion. Hence the converted section could not be opened for goods traffic. Failure to synchronize the work of electrification with the completion of gauge conversion resulted in non-materialization of projected goods earnings of Rs. 19.39 crore per annum.



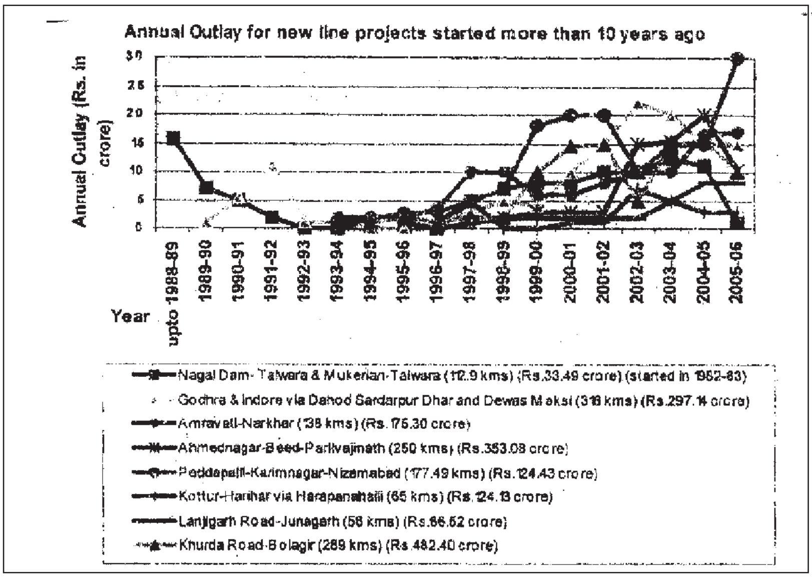
Thus it appeared that while the operational objectives of the projects were declared clearly in line with the general policy of enhancing transport capacity and capability of the railways, successive decisions during the design and implementation stages of the projects showed signs of policy drift. Expenditure was thus incurred without the railways getting the intended benefits.

1.8.3 Impact of uncertainties in funding on project implementation

Audit attempted to assess the impact of uncertainties in funding on the four selected projects and observed that micro-management of the projects was seriously hampered as the project authorities could neither accurately estimate the costs involved nor were they in a position to draw up detailed project schedules or in one case, even anticipate a date of completion for the project. The following graphs indicate the funding fluctuations in some railway projects pending for more than ten years.



These gauge conversion projects were taken up more than ten years back but only 42 per cent to 84 per cent of the work has been completed so far. While the survey reports in gauge conversion projects generally prescribed a total time frame of four to five years for completion, it was seen that the level of funding in most of these projects has been much below Rs. 5 crore per year in the first five years and even subsequently there have been drastic fluctuations in the funding pattern. Thus there was no possibility of these projects getting completed within the prescribed time frame.



In case of these new line projects taken up more than ten years back only 15 per cent to 55 per cent of the work has been completed so far. The projects were kept starved of funds and retained in the works programme by making token provisions resulting in delay in completion of the projects, apart from significant increase in costs.

1.8.3.1 Budget allotments not in consonance with the set time frames

The report and justification accompanying the detailed estimate of projects should indicate the period by which the project is to be completed and investment schedule should be drawn for the execution period[6]. Though realistic time frames were fixed for completion of all the three gauge conversion projects selected for detailed audit, investment schedules were not prepared and the resources for implementing these projects were not allocated in consonance with a set time frame. In two out of four projects selected (SCR and SER), the Railway Board did not allot funds requested for by the zonal railways, while the zonal railways failed to utilize even the allotted amounts. Central Railway did not receive phase-wise funds and utilization of funds was also not watched by them phase-wise. As a result an amount of Rs. 7.56 crore was blocked in works of Phase III and IV, which were later deferred due to change in

[6]Para 722, 541 of Indian Railway Engineering Code.

priority. For the SCR project, though the survey committee suggested a completion period of four years, this was not kept in mind white allotting funds for the project and the project dragged on for 12 years (SCR). In the SER project, Railway Board subsequently reduced the allocations to this project due to its being un-remunerative, further slowing the pace of implementation.

1.8.3.2 Project schedule not defined

Execution of the works included in the project estimate should correspond to a logical project schedule as any imbalance in this regard affects the progress of the project, besides non-achievement of contemplated objectives. In three out of four projects (CR, SCR, SER) Programme Evaluation and Review Technique (PERT) Charts were not prepared and project schedules were not clearly defined. In one project (CR) the railway administration did not schedule and prioritize the work according to availability of funds and started the work over the entire length of the section, which led to blocking of funds in Phase III and IV works. In SER earthwork ws started simultaneously over all four segments of Rupsa-Bangriposi section. Earthwork carried out over segment III and IV was wasted when Railway Board restricted further financial commitment. In one case (CR) Construction of a station building was started before laying broad gauge track, which requires a higher-level platform than narrow gauge. As a result the station was constructed at a level unsuitable for the broad gauge line. In SCR, despite completion of eighty per cent of earthwork, laying and linking works could not be taken up due to non-availability of permanent-way material such as rails, sleepers, points and crossing etc., as action for procurement was initiated very late. Thus it was seen that the efficient execution of projects was hampered due to non-preparation of project schedule as required under the rules.

As an explanation for not drawing up project schedules one of the Railway Administrations (SCR) categorically stated that project scheduling was not feasible as execution of a project was primarily dependent on the budget allotments made by the Railway Board.

During discussions the Ministry accepted the audit observation that uncertainties in funding affects the project planning. The Ministry also stated that progress of some projects was also affected in the past few years by the fluctuations in steel prices. The contention of the Ministry reinforces the audit observation and further emphasises the need for clear commitment of funds commensurate with the time frame, for realising value for money invested.

Recommendations

* The core objectives of the project should be distinctly enunciated and subsequent planning and decision-making should be aligned towards achievement of the stated objectives.
* Clear project schedules should be framed for the projects as the initial stages and completion dates determined. Budget allotments should be in accordance with the time frames set for completion.

1.9 Project management practices leading to delays and cost escalation

Audit observed time and cost overrun in the selected projects and cost of construction per kilometer against the estimated cost as follows:

(Rs. in crore)

Project	Time overrun	Cost overrun	Estimated cost of conversion/ construction per km	Actual cost of conversion construction per km
Gauge Conversion of Kurduwadi-Pandharpur section in Central Railway	28 months	36.88 (78%)	0.8870	1.5828
Construction of a new line between Latur and Latur Road in Central Railway	81 months	45.38 (128%)	0.8426	1.9214
Gauge Conversion Project of Tirupati-Pakala-Katpadi section of South Central Railway	69 months	69.8 (73.58%)	0.60	1.25
Gauge Conversion of Rupsa-Bangriposi section of South Eastern Railway	Initially, the target date was not fixed. Later fixed as June 2004. Phase-I not yet open for traffic.	66.90 (115%)	0.60	1.40
Construction of New Line between Dewas and Maksi in Western Railway	47 months	10.64 (22.16%)	1.00	1.62

Economic and efficient implementation of selected projects within a reasonable time frame is axiomatic for deriving their intended benefits.

Audit examined the deficiencies in project implementation and observed that delays in preparation of detailed estimates, lack of co-ordination with State Government for acquisition of land, insufficient delineation of the scope of projects, deficiencies in contracts and store management and weak monitoring mechanism had contributed to time and cost overruns in the selected projects.

1.9.1 Delay in preparation of detailed estimates

Rules provide that technical sanction to a project should be given by the competent authority only after ascertaining that the details of the scheme as worked out are satisfactory, the methods proposed for the execution of the work are adequate and that the cost has been estimated from reliable data and is likely to be reasonably accurate. The work can commence only when the detailed estimates are prepared and sanctioned and the competent authority allots adequate funds. Once administrative approval of a project is conveyed to the zonal railway through the sanction of abstract estimates, the exercise of preparation and submission of detailed estimates for technical sanction is started. In two out of four projects selected (SCR and SER) it was seen that there were abnormal delays in preparation of detailed estimates and subsequent approval by Railway Board, which added to time overrun of these projects. Though part detailed estimates of the SCR project were sanctioned early (December 1993), final detailed estimates for main line were sanctioned only after a gap of three years (July 1996) and estimates for yard arrangements (Tirupati) sanctioned after nine years (January 2002). The work on the SER project started in 1997. However, the detailed estimates of Phase-I were sanctioned only after a time-gap of eight years (April 2003). Railway Board took one and a half year to sanctioned the detailed estimates of the new line project of WR.

1.9.2 Delays due to lack of co-ordination with the State Government for acquisition of land

In one of the four selected projects (CR) it was seen that poor co-ordination with the State Government led to delay of six to seven years in acquisition of land resulting in increase in cost of land and other financial commitments including interest payments to land owners.

1.9.3 Insufficient delineation of scope of projects leading to material modifications

Railway Board (July 1992) directed the zonal railways to adhere to the original scope of work and avoid material modifications in the case of gauge conversion works. Where absolutely essential, such proposals for modifications were to be accompanied by fresh financial appraisal and revised rate of return. It was seen that material modifications worth Rs. 10.22 crore (12.41 per cent of the project cost) and Rs. 41.88 crore (58.41 per cent of the project cost) were introduced in CR and SCR respectively. These material modifications were introduced due to non-inclusion of provisions for MACLS[7] signalling, architectural survey of a station, two Road-over-bridges and extension of a Foot-over-bridge in CR and provision for electrification in SCR. Such changes in the scope and cost of the projects being introduced after commencement indicate insufficient delineation of the scope of the projects, which, besides delaying the projects, resulted in cost overruns.

1.9.4 Modifications in scope of projects without sanction of competent authority/ additional works not related to project taken up

If the expenditure of a project is likely to exceed the amount provided in the detailed estimate, the railway administration should submit revised estimates to the competent authority for sanction[8]. As per Cabinet decision railway administration should revise/update the estimates for works costing more than Rs. 50 crore every year so that government is aware of the throw forward liability of various sanctioned

[7] Multi Aspect Coloured Light Signalling.

[8] Para 708 and 1136 of Indian Railways Engineering Code.

projects. Audit observed that while in general necessary sanctions have been taken from competent authorities, in one of the three gauge conversion projects examined, excess expenditure was incurred beyond the powers delegated to the zonal railway (CR). Three cases worth Rs. 9.1 crore, which should have been taken as material modifications as per the codal provisions[9] were not submitted for sanction to the competent authority (CR). Two material modifications worth Rs. 18.17 crore were introduced by the zonal railway (SCR) and an expenditure of Rs. 3.18 crore had been incurred on them despite Railway Board rejecting the proposal of the zonal railway on the ground that as the material modifications suggested were unnecessary and unrelated to the approved project.

1.9.5 Non-assessment of risk and constraints

Rules provide that special problems that may be encountered while executing the project are to be brought out in the techno-economic survey reports for finding possible solutions[10]. This helps in accurately estimating the time frame and the cost involved. In all the four projects examined by Audit a specific risk assessment exercise was not undertaken. In one of the four projects the zonal railway (CR) fixed the time frame for completion subject to availability of funds and critical material. As Railway Board did not ensure timely allocation of sufficient funds, the work has not progressed as originally ensvisaged.

1.9.6 Deficient contract management

In all the four projects, deficiencies in contract management resulted in slow progress of the works. Out of the 45 contracts reviewed in CR, delay in execution was noticed in 44 contracts. In 20 contracts the reasons were due to lapses on part of the railway administration such as not hand in over clear site, not giving clear formation levels, obstruction of power crossings/trees, paucity of funds etc. In 22 cases there was an upward variation in the value of contract ranging from 2 to 58 per cent and in 15 cases threre was downward variation from 2 to 74 per cent due to change in scope of the works. There were delays (WR) on the part of railway administration in arranging Permanent-way material, which led to a delay of more than a year in laying, linking, cutting, cropping and welding of rails.

Gauge conversion and new line projects of the Railways involve considerable earthwork. Estimation of quantities in earthwork is not scientifically done in a large number of cases such as seen in SER where gross variations in quantities of earthwork (excess upto 1200 per cent) were noticed leading to increase in expenditure (Rs. 0.80 crore). In CR earthwork contracts were awarded much below the estimated cost as a result of which the contractor could not complete the work and delay on this account delayed the project by three years and increased the project cost by Rs. 0.53 crore. In the risk and cost contracts, awarded as a consequence, the amount of risk and cost has either not been calculated or not recovered from the contractors. Contractors have gone for arbitration in eight cases. SCR took over 16 months to finalise earthwork

---

[9] Para 1110 of Indian Railways Engineering Code.

[10] Para 536 and 572 of Indian Railways Engineering Code.

contracts. Though contractors were allowed a period of 3 to 7 months for completing the work, extensions were granted for durations ranging from 2 to 62 months due to railway administration's failure to arrange for blocks. Nine contracts were terminated for no fault of the contractors and subsequently awarded at a higher rate resulting in extra expenditure of Rs. 1.38 crore. Thus earthwork estimation is arisk area requiring clear guidelines estimation. In the earthwork contract for minor bridges in WR project, extensions were granted in a routine manner to the first contractor and also to the second one to whom the risk cost contract was awarded. This resulted in a delay of 48 months.

1.9.7 Unsatisfactory stores management adding to delays

Stores requirements for specific works are to be procured neither in excess nor in advance of requirements as this would result in blocking of funds affecting exchequer control[11]. Project implementing authorities are authorised to procure stores specific to works/projects executed by them in order to ensure availability of stores on time and as per requirement. Audit observed that in all the four projects selected for detailed scrutiny, deficient stores management led to delays in execution as well as blocking of funds.

* In SCR delayed procurement of permanent-way material (3 to 4 years) hampered the progress of work which was delayed by 6 years. Cases of excess and/or advance procurement of stores over and above requirement were also noticed, blocking capital which would have been applied to other essential works. Advance procurement of cables and relays blocked an amount of Rs. 3.87 crore. Excess procurement of permanent-way material and signalling items were made and material worth Rs. 2.88 crore was lying surplus even after 19 months of commissioning of the project. Ballast of a higher standard was also procured in excess quantity, which resulted in excess expenditure of Rs. 2 crore.

* Released material worth Rs. 9.64 crore and Rs. 2.51 crore was awaiting disposal for two and three years in SCR and SER respectively.

* Deficiencies in maintenance of material-at-site (MAS) accounts also made monitoring of procurement and utilization of stores more difficult. No action was taken to clear heavy balances of Rs. 23.52 crore in MAS accounts in CR. In WE a balance of Rs. 6.86 crore under MAS accounts was cleared only 26 months after completion of the project. The MAS account was not maintained for want of stock holding facilities at site in SER.

1.10 Monitoring

For successful execution of any project it is necessary to monitor closely. The execution of projects in railways should be monitored at various levels at regular intervals. It was observed that the role of the Railway Board in the monitoring of projects under implementation is not proactive and once a project is sanctioned for implementation its monitoring is primarily left to the various zonal railways. No structures have been created at the Ministry level for regular monitoring of their progress. The

---

[11] Para 1438 of Indian Railways Engineering Code.

General Managers/Chief Administrative Officers of various zonal railways intimate the progress of works under implementation to the Railway Board through Periodical Confidential Demi-Official letters (PCDOs) to Member (Engineering). The Railway Board limits its role to responding to specific issues raised by the zonal railways through PCDOs or otherwise.

At the zonal railways level rules provide for preparation of progress report cum financial review of the project, linking the progress of work with the expenditure incurred [12] to facilitate monitoring. These reports are to be prepared and submitted to Chief Engineer and FA&CAO every half-year from commencement of the project. It was seen that half-yearly reports were not prepared in SCR for monitoring the progress of implementation of the projects.

'Works Registers' serve as an important management tool in comparing the expenditure incurred against the provisions made in the estimates for different works[13]. It was seen that 'Works Registers' were not maintained properly and details of work-wise estimates, budget allotments and up-to-date totals for expenditure on all works were not struck, due to which Railways failed to exercise control over the expenditure on these works (CR).

Recommendations

- Railways should plan the projects in a more comprehensive manner. The scope of the project, technical specifications, quantities and cost estimates should be accurately delineated on the basis of parameters brought out in technical surveys so as to ensure smoother project implementation within the estimated cost and time.
- The Railways need to strictly observe the codal provisions in planning and execution of projects. Risk areas such as land acquisition and estimation of materials and earthwork quantities need to be carefully controlled.
- Railways need to evolve structures for closer monitoring of projects at the Ministry level. Strict observance of codal provisions for maintenance of information systems and documentation at the implementation level should be ensured.

1.11 Conclusion

As brought out from time to time by the Ministry of Statistics and Programme Implementation, Government of India, the Ministry of Railways accounts for the largest number of pending projects involving considerable investment. Many of these projects have very long gestation periods and even firm dates of commissioning have not been established in many such projects. Railway projects have an impact on most other sectors of the economy and non-completion of projects not only locks up scarce railways resources in these projects but also deprives the railways and the general public of the expected benefits. Even while a large number of earlier projects remained

---

[12] Para 1518 to 1522 of Indian Railway Engineering Code.

[13] Para 1472 of Indian Railway Engineering Code.

incomplete. Railways have been introducing new projects. This has put the railways resources under pressure and it is estimated that at the present rate of funding the Railways will need 26 years to complete the gauge conversion and new line projects in hand. Lack of adequate resources has also impacted project execution at micro-level. While the Ministry of Railways is attempting to prioritise the large shelf of projects, the resource gap is unlikely to be bridged in the near future.