

CHAPTER III

3 Performance Reviews relating to Statutory Corporations

3.1. Bangalore Metropolitan Transport Corporation

Functioning of Bangalore Metropolitan Transport Corporation

Executive Summary

The Bangalore Metropolitan Transport Corporation (Corporation) provides public transport in the Bangalore city and agglomeration through its 30 depots. The Corporation had fleet strength of 5,542 buses as on 31st March 2009 and carried an average of 36.69 lakh passengers per day. The performance audit of the Corporation for the period from 2004-05 to 2008-09 was conducted to assess efficiency and economy of its operations, ability to meet its financial commitments, possibility of realigning the business model to tap non-conventional sources of revenue, existence and adequacy of fare policy and effectiveness of the top management in monitoring the affairs of the Corporation.

Finances and Performance

The Corporation earned a profit of Rs. 55.18 crore in 2008-09. Its accumulated profit and borrowings stood at Rs. 587.55 crore and Rs. 49.66 crore as at 31 March 2009, respectively. The Corporation earned Rs. 24.63 per kilometre and expended Rs. 23.28 per kilometre in 2008-09.

Share in Public Transport

Buses operated by the Corporation are the only authorised mode of public transport in Bangalore city and agglomeration. To cater to the increasing population of the city (0.69 crore in 2004-05 to 0.76 crore in 2008-09), the Corporation increased its fleet strength from 3,925 buses (2004-05) to 5,542 buses (2008-09). The vehicle density per lakh population increased from 57 (2004-05) to 73 (2008-09).

Vehicle profile and utilisation

Corporation's buses consisted of own fleet of 5,312 buses 190 buses taken over from private operators for operation and maintenance and 40 hired buses. Of its own fleet, 560 (10.54

per cent) were overage, i.e., which have covered more than eight lakh Kms. The percentage of overage buses increased from 3.15 per cent in 2004-05 to 10.54 per cent in 2008-09 though the Corporation acquired 3,491 new buses during 2004-09 at a cost of Rs. 621.96 crore. The acquisition was primarily funded through cash from operations and internal resources.

Corporation's fleet utilisation at 94.54 per cent in 2008-09 was above All India Average (AIA) of 84 per cent. Its vehicle productivity at 227.70 kilometres per day per bus was above the AIA of 187 kilometres. However, the achievement of the Corporation was marginally less than its own target of vehicle productivity. Its passenger load factor at 63.80 per cent, was less than the AIA of 71 per cent. No targets have been fixed for load factor. The Corporation did well on operational parameters. However, 44 per cent schedules of buses were unprofitable and 12 per cent schedules were not earning enough to meet even variable cost of operation. Corporation's performance on preventive maintenance was poor with only about 53.75 per cent maintenance done on time.

Economy in operations

Manpower and fuel constitute 74 per cent of total cost. Interest, depreciation and taxes account for 15 per cent and are not controllable in the short term. Thus, the major cost saving has to come from manpower and fuel. The Corporation succeeded in reducing the manpower per bus from 5.20 in 2004-05 to 5.02 in 2008-09. However, the expenditure on repairs and maintenance was Rs. 96.37 crore (Rs. 1.81 lakh per bus) in 2008-09, of which nearly 26.33 per cent was on manpower. The Corporation did not attain its own fuel consumption targets resulting in excess consumption of fuel valued at Rs. 15.76 crore during 2004-09.

As a result of cancellations due to controllable factors like want of crew and vehicles, the Corporation was deprived of contribution to an extent of Rs. 13 crore.

The Corporation has just 40 hired buses as at the end of 31 March 2009, where bus owners provide buses with drivers and incur all expenses. The Corporation provides conductors and makes payment as per kilometres operated. The Corporation earned a net profit of Rs. 40.76 crore from hired buses during 2004-09. Though this arrangement has the potential to cut down the cost substantially, the number of hired buses was reduced from 628 to 40 as the private operators have withdrawn their buses from operation.

Revenue Maximisation

The Corporation has been exploiting the commercial spaces built in the bus stations to generate additional revenue and has 32.26 lakh square metres of land for future development. However, the Corporation does not have any policy for tapping non-traffic revenue sources by taking up large scale PPP projects in the vacant land. The Corporation's claim of reimbursement of student concession was not fully accepted by the Government as the same was not in accordance with approved formula.

Need for a regulator

The Government had approved automatic fare revision whenever there is an increase in cost of fuel and DA. Though revision of fare is being

effected, the revision does not take into consideration the increase in other operational costs. Thus, it would be desirable to have an independent regulatory body (like State Electricity Regulatory Commission) to fix the fares, specify operations on uneconomical routes and address grievances of commuters.

Monitoring

The fixation of targets for various operational parameters and an effective Management Information System (MIS) for obtaining feed back on achievement thereof are essential for monitoring by the top management. Internal targets are fixed by the Management. Monthly Performance Appraisal Report is compiled and reviewed by top Management. Depot-wise performance is monitored by Departmental Heads and directions issued for remedial actions.

Conclusion and Recommendations

Though the Corporation is earning profits, the margin is declining mainly due to its high cost of operations and very meagre increase in revenue. The Corporation can control the decline by tapping non-conventional sources of revenue and increased line checking. This review contains seven recommendations to improve the Corporation's performance. Creating a regulator to regulate fares and services and tapping non-conventional sources of revenue by undertaking PPP projects are some of these recommendations.

Introduction

3.1.1 In Karnataka the public road transport is primarily provided by four Corporations³¹ viz., BMTC, KSRTC, NWKRTC and NEKRTC which are mandated to provide an efficient, adequate, economical and properly co-ordinated road transport. The State also allows the private operators to provide public transport. The State has reserved certain routes exclusively for the Corporations while allowed both Corporations and private operators to operate on some other routes. The fare structure is controlled and approved by the Government.

3.1.2 The BMTC (Corporation) was incorporated on 15th August 1997 by the State Government under Section 3 of the Road Transport Corporations Act, 1950 as a wholly owned Corporation of the State Government. The Corporation operates buses in Bangalore city and agglomeration areas. The Corporation is under the administrative control of the Transport Department of the Government of Karnataka. The Management of the Corporation is vested with a Board of Directors comprising Chairman, Managing Director and Directors appointed by the Government of Karnataka. The day-to-day operations are carried out by the Managing Director, who is the Chief Executive of the Corporation, with the assistance of Director (Security, Vigilance and Environment), Director (Projects), Heads of Departments and Depot Managers. The Corporation had 30 Depots and two Central Workshops as at the end of March 2009. The bus body building is carried out at Central Workshop and through external agencies. The tyre retreading operations are done at own retreading plant at Central Workshop.

3.1.3 The Corporation had a fleet strength of 5,542 buses including 190 taken over buses³² and 40 hired buses as on 31 March 2009. The Corporation carried an average of 36.69 lakh passengers *per day* during 2004-05 to 2008-09. The turnover of the Corporation was Rs. 1,000.63 crore in 2008-09, which was equal to 0.37 *per cent* of the State Gross Domestic Product worked out based on Advance Estimates for 2008-09. The Corporation employed 27,648 employees as at 31 March 2009.

Scope of Audit and Audit Methodology

3.1.4 The present review conducted during February 2009 to May 2009 covers the performance of the Corporation during the period from 2004-05 to 2008-09. The review mainly deals with operational efficiency, financial management, fare policy, fulfilment of social obligations and monitoring by top management of the Corporation. The audit examination involved scrutiny of

³¹ Bangalore Metropolitan Transport Corporation (BMTC), Karnataka State Road Transport Corporation (KSRTC), North Western Karnataka Road Transport Corporation (NWKRTC), and North Eastern Karnataka Road Transport Corporation (NEKRTC).

³² taken over from private operators by BMTC and run by it.

records at the Head Office, one Central Workshop, and eight³³ out of 30 depots. Selection of depots is based on probability proportion to size without replacement independently considering the profit / loss for 2007-08 for each depot as the size measure. Traffic revenue earned by eight selected depots during 2008-09 was approximately Rs. 307.26 crore which constituted 33.86 *per cent* of the total traffic revenue of the Corporation. Fleet strength (own) of the selected depots as on 31 March 2009 was 1,731 against a total strength of 5,502 for the Corporation.

3.1.5 The methodology adopted for attaining the audit objectives with reference to audit criteria consisted of explaining audit objectives to top management, scrutiny of records at Head Office and selected units, interaction with the auditee personnel, analysis of data with reference to audit criteria, raising of audit queries, discussion of audit findings with the Management and issue of draft review to the Management for comments.

Audit Objectives

3.1.6 The objectives of the performance audit were to assess:

Operational Performance

- the extent to which the Corporation was able to keep pace with the growing demand for public transport;
- whether the Corporation succeeded in recovering the cost of operations;
- the extent to which the Corporation was running its operations efficiently;
- whether adequate maintenance was undertaken to keep the vehicles roadworthy; and
- the extent to which economy was ensured in cost of operations.

Financial Management

- whether the Corporation was able to meet its commitments and recover its dues efficiently; and
- the possibility of realigning the business model of the Corporation to tap non-conventional sources of revenue and adopting innovative methods of accessing such funds.

Fare Policy and Fulfilment of Social Obligations

- the existence and adequacy of fare policy; and
- whether the Corporation operated adequately on uneconomical routes.

³³ **Jayanagar, Subashnagar, Yeswanthpur, Kengeri, Kathriganne, Kalyannagar, Koramangala and Deepanjalinagar.**

Monitoring by Top Management

- whether the monitoring by Corporation's top management was effective.

Audit Criteria

3.1.7 The audit criteria adopted for assessing the achievement of the audit objectives were:

- all India averages for performance parameters;
- performance standards and operational norms fixed by the Association of State Road Transport Undertakings (ASRTU);
- physical and financial targets/ norms fixed by the Management;
- manufacturers' specifications, norms for life of a bus, preventive maintenance schedule, fuel efficiency norms, etc.;
- instructions of the Government of India (GOI) and the State Government and other relevant rules and regulations;
- corporate policy for investment of funds; and
- procedures laid down by the Corporation.

Financial Position and Working Results

3.1.8 The financial position of the Corporation for the five years up to 2008-09 is given below:

	(Rs. in crore)				
	2004-05	2005-06	2006-07	2007-08	2008-09 (provisional)
A. Liabilities					
Paid up Capital	64.72	92.72	158.16	173.53	157.71
Reserve and Surplus (including Capital Grants but excluding Depreciation Reserve)	197.24	298.56	525.35	637.40	735.00
Borrowings (Loan Funds)	28.93	26.42	22.65	14.45	49.66
Current Liabilities and Provisions	64.00	49.10	61.36	73.51	160.97
Total	354.89	466.80	767.52	898.89	1103.34
B. Assets					
Gross Block	379.65	433.52	582.42	699.93	1071.40
Less: Depreciation	152.53	194.72	236.58	287.46	359.43
Net Fixed Assets	227.12	238.80	345.84	412.47	711.97
Capital works-in-progress (including cost of chassis)	27.01	55.86	91.57	161.07	243.20
Investments	0.00	0.00	194.02	194.02	20.02
Current Assets, Loans and Advances	100.76	172.14	136.09	131.33	128.15
Accumulated losses	0.00	0.00	0.00	0.00	0.00
Total	354.89	466.80	767.52	898.89	1103.34

3.1.9 The details of working results like operating revenue and expenditure, total revenue and expenditure, net surplus/loss and earnings and cost *per* kilometre of operation are given below:

(Rs. in crore)

Sl. No.	Description	2004-05	2005-06	2006-07	2007-08	2008-09 (provisional)
1	Total Revenue	572.19	703.40	887.59	939.80	1,000.63
2	Operating Revenue ³⁴	542.40	667.71	817.10	853.72	909.15
3	Total Expenditure	492.18	588.50	663.27	799.58	945.45
4	Operating Expenditure ³⁵	479.52	580.24	649.54	782.85	929.82
5	Operating Profit/Loss	62.88	87.47	167.56	70.87	-20.67
6	Profit for the year	80.01	114.90	224.32	140.22	55.18
7	Accumulated profit	172.07	261.13	460.12	560.02	587.55
8	Fixed Costs					
	Personnel Costs	170.52	205.38	211.94	282.28	325.05
	Depreciation	37.18	44.31	56.73	67.57	97.66
	Interest	1.85	2.33	0.76	0.45	0.67
	Other Fixed Costs	18.92	18.89	28.87	37.90	27.42
	Total Fixed Costs	228.47	270.91	298.30	388.20	450.80
9	Variable Costs					
	Fuel and Lubricants	144.25	202.20	255.12	295.41	365.36
	Tyres and Tubes	6.52	8.84	11.62	16.70	21.37
	Other Items/ spares	11.29	14.06	25.12	33.39	47.28
	Taxes (MV Tax, Passenger Tax, etc.)	28.39	34.39	39.27	44.31	50.28
	Other Variable Costs	73.26	58.10	33.84	21.57	10.36
	Total Variable Costs	263.71	317.59	364.97	411.38	494.65
10	Effective KMs operated (in lakh)	2,973.50	3,163.34	3,334.49	3,766.85	4,062.43
11	Earnings <i>per</i> KM (Rs.)(1/10)	19.24	22.24	26.62	24.95	24.63
12	Fixed Cost <i>per</i> KM (Rs.) (8/10)	7.68	8.56	8.95	10.31	11.10
13	Variable Cost <i>per</i> KM (Rs.) (9/10)	8.87	10.04	10.95	10.92	12.18
14	Cost <i>per</i> KM (Rs.) (12+13)	16.55	18.60	19.90	21.23	23.28
15	Net Earnings <i>per</i> KM (Rs.)(11-14)	2.69	3.64	6.72	3.72	1.35
16	Traffic Revenue ³⁶ (Rs. in crore)	506.19	623.34	707.43	801.49	907.50
17	Traffic Revenue <i>per</i> KM (Rs.) (16/10)	17.02	19.71	21.22	21.28	22.34

³⁴ operating revenue includes traffic earnings, passes and season tickets, re-imbusement against concessional passes, fare realised from private operators under 'KM Scheme', etc.

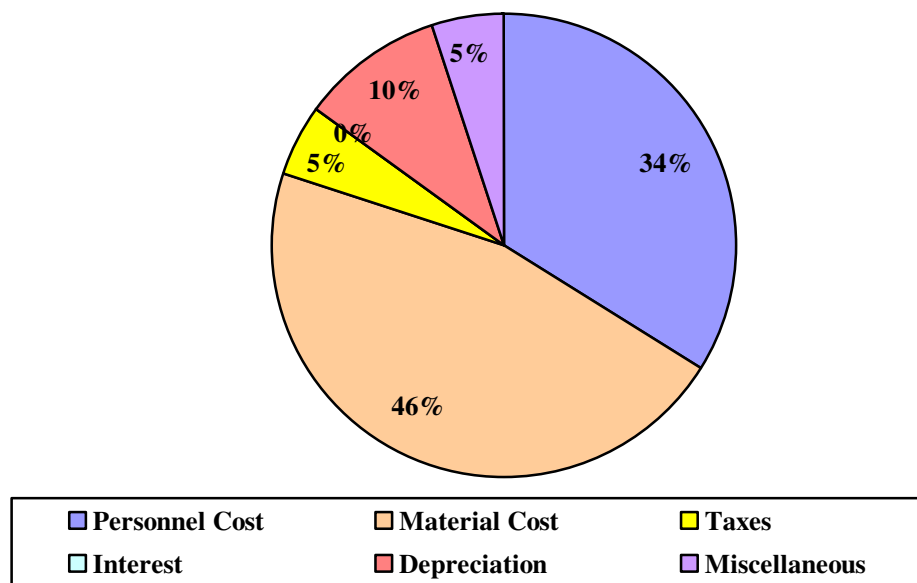
³⁵ operating expenditure include expenses relating to traffic, depreciation on fleet, repair and maintenance, electricity, welfare and remuneration, licences and taxes and general administration expenses.

³⁶ traffic revenue represents sale of tickets, advance booking, reservation charges and contract services earnings.

Elements of Cost

3.1.10 Personnel cost and material costs constitute the major elements of cost. The percentage break-up of costs for 2008-09 is given below in the pie-chart.

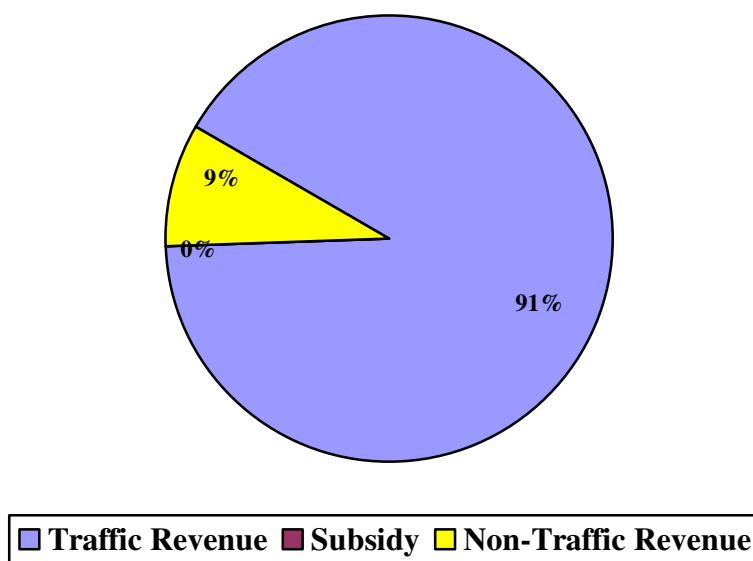
Components of various elements of cost



Elements of revenue

3.1.11 Traffic revenue and non-traffic revenue constitute the major elements of revenue. The percentage break-up of revenue for 2008-09 is given below in the pie-chart.

Components of various elements of revenue



Audit Findings

3.1.12 Audit explained the audit objectives to the Corporation during an ‘entry conference’ held on 11th February 2009. Subsequently, audit findings were reported to the Corporation and the Government on 18th August 2009 and discussed in an ‘exit conference’ held on 22nd September 2009, which was attended by Deputy Secretary, Transport Department, Government of Karnataka and Managing Director of the Corporation. The views expressed by the Government and Management in the exit conference have been considered while finalising this review. The audit findings are discussed below.

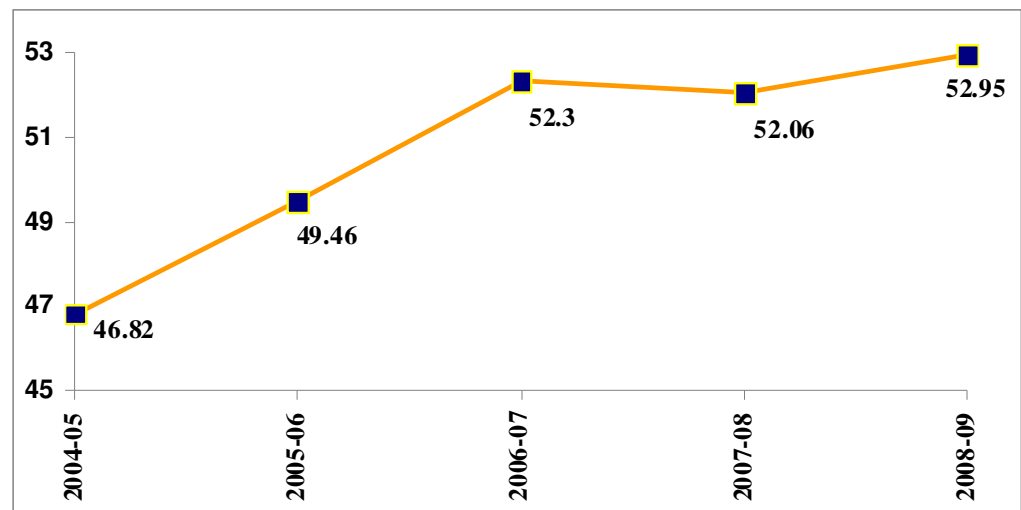
Operational Performance

3.1.13 The operational performance of the Corporation for the five years ending 2008-09 is given in the **Annexure – 7**. The operational performance of the Corporation was evaluated on various operational parameters as described below. It was also seen whether the Corporation was able to maintain pace with the growing demand of public transport. Audit findings in this regard are discussed in the subsequent paragraphs. These audit findings show that the profits can be enhanced and there is scope for improvement in performance.

Share of Corporation in public transport

3.1.14 State does not have a transport policy. The Government stated (July 2009) that the policy was under preparation.

3.1.15 Line-graph depicting the percentage of average passengers carried *per* day by the Corporation to the population of the city during five years ending 2008-09 is given below:



- Percentage of average passengers carried per day to population

3.1.16 The bus transport service in Bangalore and agglomeration is exclusively provided by the Corporation and no private stage carriages are allowed. Table below depicts the density of Corporation's vehicles *per* one lakh population.

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Corporation's buses including hired buses	3,925	4,106	4,606	4,891	5,542
Estimated population in Bangalore and agglomeration (crore)	0.69	0.70	0.72	0.74	0.76
Vehicle density <i>per</i> one lakh population	57	58	64	66	73

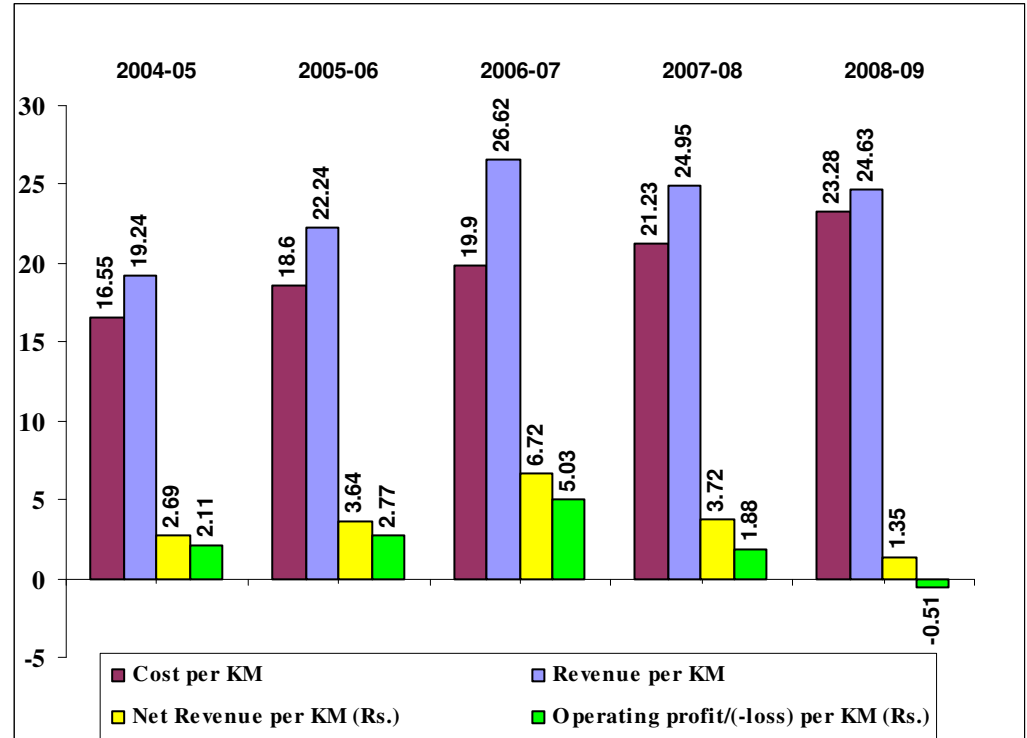
3.1.17 Audit noticed that effective *per* capita KM operated *per* year as given below and the number of buses *per* one lakh population showed an increasing trend indicating that the Corporation was able to keep pace with the growing demand of public transport.

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Effective KM operated (lakh)	2,973.50	3,163.34	3,334.49	3,766.85	4,062.43
Estimated Population (crore)	0.69	0.70	0.72	0.74	0.76
<i>Per</i> Capita KM <i>per</i> year	43.09	45.19	46.31	50.91	53.45

3.1.18 Public transport has definite benefits over personalised transport in terms of costs, congestion on roads and environmental impact. The public transport services have to be adequate to derive those benefits. In the instant case, the Corporation succeeded in enhancing the reach of public transport.

Recovery of cost of operations

3.1.19 The Corporation was able to recover the cost of operations in all the five years. The cost *per* KM, revenue *per* KM, net revenue *per* KM and operating profit / loss *per* KM during the last five years ended 2008-09 is shown in the graph³⁷ below:



The Cost *per* KM increased by 16.98 *per cent* during 2006-09 mainly due to increase in staff cost and operation of Volvo buses.

3.1.20 It can be observed that the net revenue *per* KM showed an increasing trend up to 2006-07 but decreased from there on. Both revenue *per* KM and cost *per* KM were less than the All India Average under the relevant categories during the period under review. The Corporation incurred operating loss during 2008-09. During the last three years (2006-09) revenue *per* KM (EPKM) dropped by 7.48 *per cent*, while the cost *per* KM increased by 16.98 *per cent*. The reduction in revenue in spite of increase in fare was attributed to decline in receipt of subsidy on account of free/concessional passes (Rs. 109.66 crore in 2006-07 to Rs. 1.64 crore in 2008-09 as discussed in paragraph 3.1.56). The increase in cost was due to increase in staff cost and operating of Volvo buses. The increased operations of Volvo buses, most of which were not recovering the costs (paragraph 3.1.34) resulted in reduced profits. This may affect the ability of the Corporation to provide adequate public transport and timely replacement of fleet to meet the growing demand.

³⁷ Cost *per* KM represents total expenditure divided by effective KM operated. Revenue *per* KM is arrived at by dividing total revenue with effective KM operated. Net Revenue *per* KM is revenue *per* KM reduced by cost *per* KM. Operating loss *per* KM would be operating expenditure *per* KM reduced by operating income *per* KM.

Efficiency and Economy in operations

Fleet strength and utilisation

Fleet Strength and its Age Profile

3.1.21 The Corporation has its own fleet of buses. It also hires buses from contractors. Audit findings in respect of hired buses are given in paragraph 3.1.51. The table below explains the position of Corporation's own fleet.

3.1.22 The Association of State Road Transport Undertakings (ASRTU) had prescribed (September 1997) the desirable age of a bus as eight years or five lakh kilometres, whichever was earlier. However, the Corporation has adopted a policy of scrapping the buses which have covered eight lakh KMs. The table below shows the age-profile of the buses held by the Corporation for the period of five years ending 2008-09.

Sl. No.	Particulars ³⁸	2004-05	2005-06	2006-07	2007-08	2008-09
1	Total No. of buses at the beginning of the year	2,750	3,297	3,680	4,266	4,657
2	Additions during the year	695	430	794	623	949
3	Buses scrapped during the year	148	47	208	232	294
4	Buses held at the end of the year	3,297	3,680	4,266	4,657	5,312
5	Of (4), No. of buses more than eight lakh kms run ³⁹	104	215	315	442	560
6	Percentage of overage buses to total buses	3.15	5.84	7.38	9.49	10.54

3.1.23 The above table shows that the percentage of buses which have crossed the scrapping limit is gradually increasing over the years. During 2004-09, the Corporation added 3,491 new buses at a cost of Rs. 621.96 crore. The expenditure was funded through cash from operations and internal resources. To achieve the norm of right age buses, as adopted by the Corporation, it required to buy 560 buses which would have cost Rs. 70.50 crore approximately.

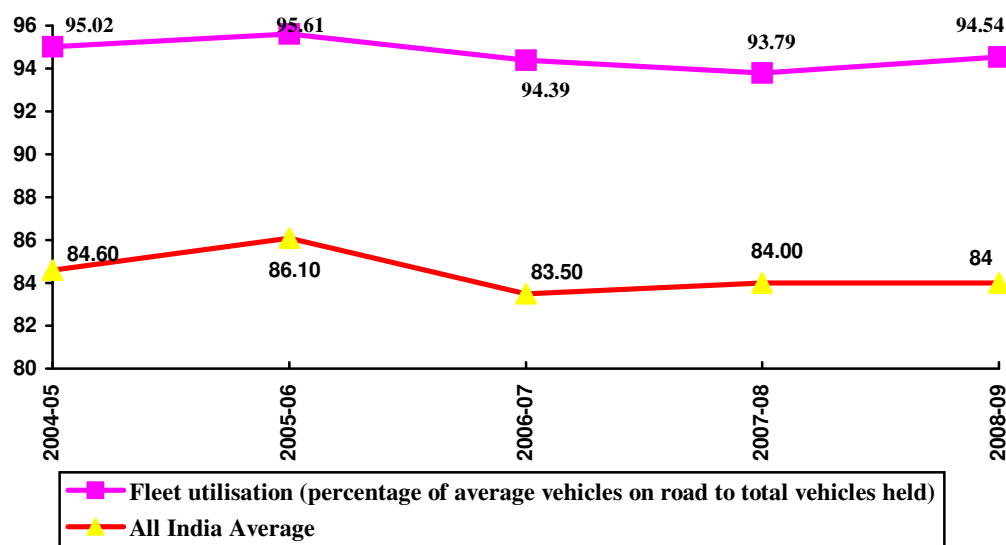
³⁸ excludes hired buses and buses taken over from private owners for operation by the Corporation.

³⁹ the break-up of buses more than eight lakh kilometres is not available. On the basis of available information only in respect of buses more and less than 7.5 lakh kilometres, all buses which have run more than 7.5 lakh kilometres have been considered over-age.

Fleet utilisation

3.1.24 Fleet utilisation represents the ratio of buses (including hired) on road to the buses held by the Corporation. The Corporation had not set target of fleet utilisation in any of the years under review. The fleet utilisation varied from 95.02 *per cent* in 2004-05 to 94.54 *per cent* in 2008-09 as indicated in graph below:

Andhra Pradesh, Tamil Nadu (Kumbakonam) and Tamil Nadu (Coimbatore) registered best fleet utilisation at 99.4, 98.4 and 98.3 *per cent* respectively during 2006-07. (Source : STUs profile and performance 2006-07 by CIRT, Pune)



3.1.25 The fleet utilisation was more than All India Average in all the years. The performance can be improved by minimising the cancellations due to breakdowns and shortage of crew (driver / conductors) as brought out in paragraph 3.1.36.

Vehicle productivity

3.1.26 Vehicle productivity refers to the average Kilometres run by each bus (including hired buses) *per day* in a year. The vehicle productivity of the Corporation *vis-à-vis* the overage fleet for the five years ending 2008-09 is shown in the table below.

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Vehicle productivity (KMs run <i>per day per</i> bus)	229.70	229.20	231.70	227.20	227.70
All India Average	194	199	189	187	187*
Overage fleet (percentage)	3.15	5.84	7.38	9.49	10.54

* All India Average for 2008-09 is not available. Hence, figures for 2007-08 are adopted.

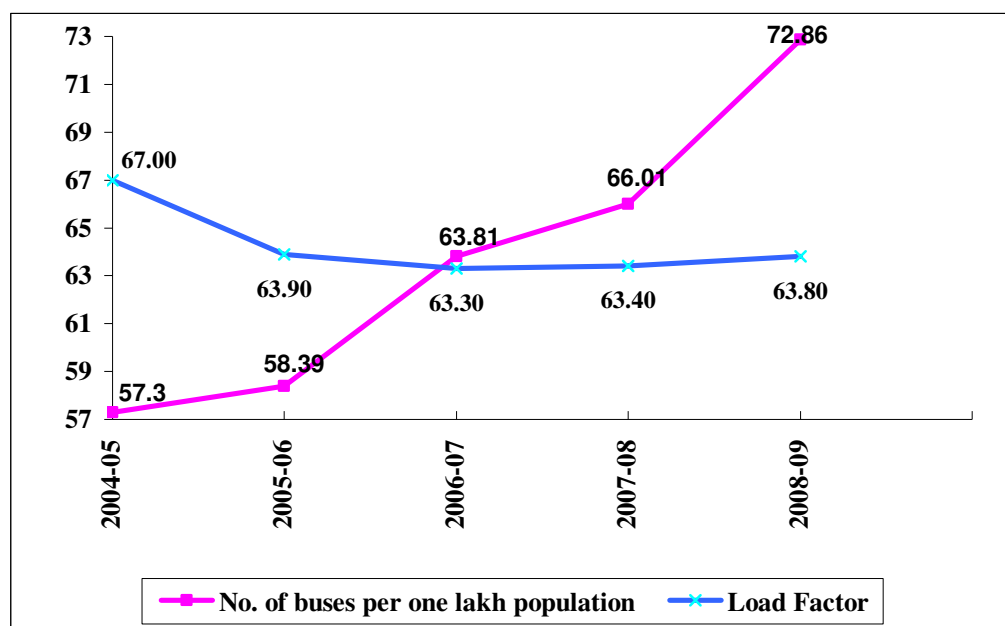
3.1.27 The vehicle productivity was higher than All India Average in all the years under review. The vehicle productivity, which was 229.70 in 2004-05, however, declined marginally to 227.70 in 2008-09. The Management attributed (June 2009) the lower productivity to traffic blockages and bottlenecks on the routes operated by the buses.

Capacity Utilisation

Load Factor

The Load factor decreased from 67 to 63.8 per cent during 2004-09.

3.1.28 Capacity utilisation of a transport undertaking is measured in terms of Load Factor, which represents the percentage of actual passenger earnings to expected passenger earnings at full load including standees allowed. The schedules to be operated are to be decided after proper study of routes and periodical reviews are necessary to improve the load factor. The load factor of the Corporation decreased from 67 per cent in 2004-05 to 63.8 per cent in 2008-09 which was less than the All India Average in all the years except 2004-05. A graph depicting the Load factor vis-à-vis number of buses per one lakh population is given below.



3.1.29 The reasons for decrease in load factor were increase in the fleet of the Corporation and lower line checking. Although the number of trips operated increased from 160.80 lakh in 2004-05 to 250.08 lakh in 2008-09, the percentage of trips checked to the trips operated declined from 1.65 per cent in 2004-05 to 1.17 per cent in 2008-09. The Management stated (June 2009) that the high percentage of operations has now reached a stage where it did not fully translate into revenue, instead it partly contributed to improving the level of passenger comfort. Further, the Management stated (September 2009) that the load factor was being watched closely.

3.1.30 The table below provides the details for break-even load factor (BELF) for traffic revenue. Audit worked out this BELF at the given level of vehicle productivity and total cost *per* KM.

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1	Cost <i>per</i> KM (Rs.)	16.55	18.60	19.90	21.23	23.28
2	Traffic Revenue <i>per</i> KM (Rs.) (Actual)	17.02	19.71	21.22	21.28	22.34
3	Earnings <i>per</i> KM at 100 <i>per cent</i> Load Factor	25.40	30.85	33.52	33.56	35.02
4	BELF considering only traffic revenue (1/3)	65.2	60.3	59.4	63.3	66.5

3.1.31 The present level of load factor was better than the break even load factor up to 2007-08 and hence even with declining load factor the Corporation was able to recover the cost and earn profit. For 2008-09, actual load factor was less than the Break even load factor. While the scope to improve upon the load factor remains limited, there is scope to reduce the cost of operation.

Route Planning

3.1.32 Appropriate route planning to tap demand leads to higher load factor. The Corporation carries out an ABC analysis of various schedules⁴⁰ operated by it. Schedules which are profitable are categorised as ‘A’, schedules which earn adequate revenue for meeting variable cost but do not cover fixed cost fully are categorised as ‘B’ while schedules which do not even cover the full variable cost are categorised as ‘C’. The position in this regard is given in the table below:

Particulars	Total No. of schedules	No of schedules making profit	No of schedules not meeting Total cost	No of schedules not meeting variable cost
2004-05	3,580(100)	1,968(55)	1,612 (45)	339 (9)
2005-06	3,870 (100)	2,443 (63)	1,427 (37)	247 (6)
2006-07	4,097 (100)	3,114 (76)	983 (24)	134 (3)
2007-08	4,665 (100)	3,128 (67)	1,537 (33)	231 (5)
2008-09	5,064 (100)	2,816 (56)	2,248 (44)	617 (12)

Figures in brackets indicate percentage to total schedules

3.1.33 The percentage of uneconomical schedules operated to total schedules in the Corporation increased from 9 *per cent* in 2004-05 to 12 *per cent* in 2008-09. This was mainly due to inherent unviability of certain schedules and induction of Volvo services as discussed below.

⁴⁰ daily operation of a bus.

Un-economical operation of Volvo Services

Volvo operations resulted in loss of Rs. 24.03 crore since inception (February 2006) till March 2009.

3.1.34 As part of its Metro Bus Pilot Project and to offer eco-friendly transport, the Corporation decided (2003) to induct buses from Volvo India Limited. As per the feasibility study, the operations would be viable at 60 *per cent* load factor. As at the end of March 2009, the Corporation had 310 Volvo buses in its fleet. Out of an average 165 schedules operated during 2008-09, only 13 schedules were profit making, while 33 schedules covered variable cost and 119 schedules did not earn enough to recover the variable cost. The total loss suffered calculated on monthly cost and traffic revenue earned on operation of Volvo Services since induction (February 2006) up to March 2009 worked out to Rs. 24.03 crore. The Management stated (September 2009) that the Volvo buses were introduced to divert personalised transport to public transport. However, it was seen that actual load factor for 2008-09 was 52.3 *per cent* and the KMPL achieved was only 2.09 against the estimated KMPL of 2.50 (paragraph 3.1.49), which was the cause for loss in Volvo operations.

3.1.35 Though some of the routes now appearing unprofitable would become profitable once the Corporation improves its efficiency, there would still be some uneconomical routes. Given the scenario of mixed routes and obligation to serve uneconomical routes, an organisation should decide an optimum quantum of services on different routes so as to optimise its revenue while serving the cause. The Corporation carries out periodical review of all the 'B' and 'C' schedules and modifies the routes and effect changes in the time table.

Cancellation of Scheduled kilometres

3.1.36 The details of scheduled kilometres, effective kilometres, and cancelled kilometres are furnished in the Table below. Cancelled KMs are the KMs not operated though originally scheduled. However, effective KMs include the scheduled KMs operated as well as additional KMs operated on account of fares, casual contracts, *etc.*, which were not originally scheduled.

(in lakh KMs)						
Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1	Scheduled kilometres	3,042.86	3,306.36	3,459.05	3,864.00	4,130.33
2	Effective kilometres	2,973.50	3,163.34	3,334.39	3,766.85	4,062.43
3	Kilometres cancelled	115.77	184.16	156.20	129.56	116.24
4	Percentage of cancellation	3.80	5.57	4.52	3.35	2.81
Cause-wise analysis						
5	Want of buses	1.10	2.19	1.24	1.00	2.01
6	Want of crew	26.05	33.43	26.32	23.84	17.08
7	Others ⁴¹	88.62	148.54	128.64	104.72	97.15
8	Contribution <i>per</i> KM (in Rs.)	8.15	9.67	10.27	10.36	10.16
9	Avoidable cancellation (want of buses and crew)	27.15	35.62	27.56	24.84	19.09
10	Loss of contribution (8x9) (Rs. in crore)	2.21	3.45	2.83	2.57	1.94

⁴¹ others include Vehicle repair, breakdown, tyre puncture, bad road, late departure, Bundh *etc.*

The percentage of cancellation declined from 3.80 in 2004-05 to 2.81 in 2008-09.

3.1.37 It can be seen from the above table that the percentage of cancellation which was 3.80 per cent in 2004-05 declined to 2.81 per cent in 2008-09. Due to cancellation for want of buses and crew, the Corporation was deprived of contribution of Rs. 13 crore. A review of the operations indicated that the scheduled kilometres were not fully operated mainly due to non-availability of adequate number of buses, shortage of crew and other factors like breakdown, accidents, late arrivals etc.

Tamil Nadu (Salem), State Express Transport Corporation (Tamil Nadu) and Tamil Nadu (Villupuram) registered least cancellation of scheduled KMs at 0.45, 0.67 and 0.78 per cent respectively during 2006-07. (Source: STUs profile and performance 2006-07 by CIRT, Pune)

Maintenance of vehicles

Preventive Maintenance

3.1.38 Preventive maintenance was essential to keep the buses in good running condition and to reduce breakdowns / other mechanical failures. The Corporation had Tata and Leyland make buses, for which the following schedule of maintenance has been adopted by the Corporation.

Particulars	Schedule
Engine Oil Change	
Tata make	Every 18,000 KMs
Leyland make	Every 16,000 KMs
Docking⁴²	
For both Tata and Leyland make	Every 20,000 KMs

3.1.39 In case of Leyland make vehicles engine oil change is done every 16,000 KMs and 24,000 KMs in case of Euro III vehicles. In case of Tata vehicles engine oil change is done for every 18,000 KMs.

3.1.40 Test check in Audit of preventive maintenance schedules revealed that out of 3,608 buses for engine oil change, there was delay in respect of 1,363 buses and the delay varied from 40 KMs (Depot 8 Yeswanthpur) to 4,749 KMs (Depot 7 Subashnagar). In case of docking out of 3,503 buses docked in the test audit months there was delay in 1,745 buses.

Test check revealed that there were delays in carrying out preventive maintenance schedules.

Year	Engine Oil Change			Docking		
	Total no. of vehicles	No. of cases delayed	Percentage of delay	Total no. of vehicles	No. of cases delayed	Percentage of delay
2004-05	272	81	29.78	276	119	43.12
2005-06	636	272	42.77	633	323	51.03
2006-07	910	344	37.80	858	415	48.37
2007-08	905	368	40.66	864	463	53.59
2008-09	885	298	33.67	919	425	46.25

The Management attributed (September 2009) the delay to shortage of mechanical staff and stated that action was taken to recruit the personnel.

⁴² in each Docking of vehicles for maintenance break system, steering system, gearbox, suspension, clutch, axle system, frames and cross membranes of the bus body, etc., are inspected.

Repairs & Maintenance

3.1.41 A summarised position of fleet holding, over-aged buses, repairs and maintenance (R&M) expenditure for the last five years up to 2008-09 is given below.

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1	Total buses (No.) (own + taken over)	3,297	3,680	4,396	4,819	5,502
2	Over-age buses (more than 8 lakh KMs)	104	215	315	442	560
3	Percentage of over age buses	3.15	5.84	7.38	9.49	10.54
4	R&M Expenses (Rs. in crore)	36.79	44.16	56.89	75.77	96.37
5	R&M Expenses <i>per bus</i> (Rs. in lakh) (4/1)	1.12	1.20	1.29	1.57	1.75
6	Percentage of manpower cost to R & M expenses	47.97	44.13	32.62	28.89	26.33

Repairs and maintenance expenditure *per bus* increased from Rs. 1.12 lakh to Rs. 1.75 lakh during 2004-09.

3.1.42 With the increase in percentage of over-aged vehicles to total fleet held from 3.15 *per cent* during 2004-05 to 10.54 *per cent* during 2008-09, the cost of repairs and maintenance *per bus* also increased from Rs. 1.12 lakh *per vehicle* in 2004-05 to Rs. 1.75 lakh *per vehicle* in 2008-09. The Corporation did not maintain expenditure incurred on repairs and maintenance of over-aged buses separately and hence audit could not ascertain the extent to which the increase in repairs and maintenance expenditure was attributable to old age buses.

Docking of vehicles for Fitness Certificates

3.1.43 The buses were required to be repaired and made fit before sending the same to Regional Transport Office (RTO) for renewal of fitness certificate under Section 62 of the Central Motor Vehicle Rules 1989. As the date of expiry of the old fitness certificate was known in advance, Management should plan accordingly to get the buses repaired in time so that bus days were not lost due to delay in renewal. In the Corporation, the vehicles were sent to Central Workshop for necessary repairs, painting and other jobs before the vehicles were produced before RTO for Fitness Certificate. As the time required for entire operation of repairs and Fitness Certificate varied depending upon the nature of repair, no specific time limit was fixed for obtaining Fitness Certificates. A test check in Audit of the records in Central Workshop of the records indicated that 414 buses out of 1,956 vehicles were held up for periods ranging from 10 to 39 days due to delay in attending to repairs necessary for obtaining Motor Vehicle Inspection Report / Certificate resulting in loss of 2,191 bus days and loss of potential revenue of Rs. 1.04 crore in respect of test audit months⁴³.

⁴³ July 2004 and February 2005 (2004-05), August 2005 and March 2006 (2005-06), April 2006 and September 2006 (2006-07), May 2007 and October 2007 (2007-08), June 2008 and January 2009 (2008-09).

Manpower Cost

3.1.44 The cost structure of the organisation shows that manpower and fuel constitute 74 *per cent* of total cost. Interest, depreciation and taxes – the costs which are not controllable in the short-term – account for 15 *per cent*. Thus, the major cost saving can come only from manpower and fuel.

3.1.45 Manpower is an important element of cost which constituted 34 *per cent* of total expenditure of the Corporation in 2008-09. Therefore, it is imperative that this cost is kept under control and the manpower is utilised optimally to achieve high productivity. The State Government had prescribed (August 2004) norm of six employees *per bus*, which includes 2.3 drivers and conductors each. The Corporation also employs driver-*cum*-conductors who besides driving the bus also perform the duty of conductors. As such the operation of the bus needs only one crew. Out of 17,303 drivers, there are 8,691 driver-*cum*-conductors employed by the Corporation at the end of March 2009. The Table below provides the details of manpower, its cost and productivity for operating own buses including buses taken over from private owners for operation but excluding hired buses. Manpower and manpower cost indicated in the table excludes conductors deployed for hired buses and their cost.

Manpower cost *per KM* increased from Rs. 6.91 to Rs. 8.07 during 2004-09.

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1	Total manpower	17,131	18,583	20,372	25,470	27,608
2	Manpower cost Rs. in crore	165.96	202.16	210.20	281.64	324.42
3	Effective KMs (lakh)- Own	2,400.29	2,755.39	3,119.87	3,648.45	4,018.63
4	Cost per KM (Rs.)	6.91	7.34	6.74	7.72	8.07
5	Productivity <i>per day per person</i> (Kms)	38.39	40.62	41.96	39.25	39.88
6	Total number of buses at the end (Own + buses taken over for own operation)	3,297	3,680	4,396	4,819	5,502
7	Man power <i>per bus</i> (1/6)	5.20	5.05	4.63	5.29	5.02

3.1.46 The manpower cost *per effective kilometre* increased from Rs. 6.91 in 2004-05 to Rs. 8.07 in 2008-09 due to revision of pay and increase in the number of employees. The productivity *per day per employee* varied from 38.39 KMs in 2004-05 to 39.88 KMs in 2008-09. The manpower *per bus* which was 5.20 in 2004-05 was reduced to 5.02 in 2008-09 due to increase in number of buses. Both the manpower cost *per effective KM* and productivity *per day per person* were better than the All India Average in all the years under review.

Fuel Cost

3.1.47 Fuel is a major cost element which constituted 38.64 *per cent* of total expenditure for the Corporation in 2008-09. Control of fuel costs by a road

transport undertaking has a direct bearing on its productivity. The table below gives the targets fixed by the Corporation for fuel consumption, actual consumption, mileage obtained *per* litre (Kilometre *per* litre *i.e.*, KMPL), All India Average and extra expenditure incurred thereon.

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1	Gross Kilometres (in lakh) (own buses)	2,483.61	2,883.06	3,269.77	3,837.42	4,232.45
2	Target of KMPL fixed by Corporation	4.75	4.75	4.58	4.60	4.37
3	Kilometre obtained <i>per</i> litre (KMPL)	4.74	4.66	4.55	4.45	4.37
4	All India Average in the category ⁴⁴	3.71	3.83	3.83	3.79	3.79
5	Actual Consumption (in lakh litres)	524.12	619.28	719.11	862.84	969.07
6	Consumption as per target (in lakh litres) (1/2)	522.87	606.96	713.92	834.22	969.07
7	Excess Consumption (in lakh litres) (5-6)	1.25	12.32	5.19	28.62	0
8	Average cost <i>per</i> litre (in Rs.)	27.39	32.30	35.21	33.58	0
9	Extra expenditure (Rs. in crore)	0.34	3.98	1.83	9.61	0

3.1.48 It could be seen from the above table that the mileage obtained *per* litre continuously declined in 2004-09 even though it was higher than the All India

Mileage obtained *per* litre declined during 2004-09 even though it was higher than the AIA.

North Eastern Karnataka State Road Transport, Uttar Pradesh and Andhra Pradesh registered mileage of 5.45, 5.33 and 5.26 KMPL. (Source : STUs profile and performance 2006-07 by CIRT, Pune)

average for Urban STUs. The target was reduced in 2008-09 due to introduction of Volvo and Euro III compliant buses into the fleet. The overall mileage obtained during the period 2006-09 (excluding Volvo buses) was 4.55, 4.45 and 4.37 KMs *per* litre respectively. Due to excess

consumption of fuel as compared to targets, the Corporation incurred an extra expenditure of Rs. 15.76 crore during 2004-09. The Corporation had set depot wise target and the fuel performance was being monitored vehicle wise as well as driver wise at depot level and at Central Office. The vehicles performing below the target were identified and remedial measures like tuning of engines, adjustment of fuel injection pump *etc.*, were taken. On a test check of eight depots during the period under review, it was found that the depots had identified 819 low performing vehicles out of 8,594 buses held by these Depots during these months and remedial measures were taken.

3.1.49 In the feasibility report for induction of Volvo Services, the vehicles were estimated to perform at 2.5 KM *per* litre (KMPL). The gross kilometres operated, fuel consumed and KMPL achieved and excess consumption of fuel

⁴⁴ All India Average for the year 2008-09 is not available hence figures of 2007-08 are adopted.

compared to the estimated fuel consumption are indicated below:

Particulars	2006-07	2007-08	2008-09
Gross Kilometres (lakh)	21.93	34.17	137.54
HSD consumed (lakh litres)	11.75	18.04	65.79
KMPL	1.87	1.89	2.09
HSD required at 2.5 KMPL (lakh litres)	8.77	13.67	55.02
Excess consumption (lakh litres)	2.98	4.37	10.77
Average rate / litre (Rs.)	35.21	33.58	36.73
Value of excess consumption (Rs. in crore)	1.05	1.47	3.96

3.1.50 It can be seen from the above that though there was improvement in KMPL from 1.87 in 2006-07 to 2.09 in 2008-09, it was well below the estimated 2.5 KMPL in all the years. This resulted in excess consumption of Diesel to the extent of 18.12 lakh litres during the period 2006-07 to 2008-09 valued at Rs. 6.48 crore calculated at average rate *per* litre for respective years, which has been included in the paragraph 3.1.48.

Cost effectiveness of hired buses

3.1.51 The Corporation was hiring private buses on Kilometre payment basis (KM Scheme). Agreements with the private bus owners were entered into for a period of six years under KM scheme. The owners of these buses were required to provide buses with drivers and to incur all expenditure on the running of the buses. The Corporation was to provide conductors and make payment as *per* the actual Kilometres operated by the hired buses. There were 628 buses as at the end of 2005 and 40 buses as at the end of 2009 and during the period 2004-09, the Corporation earned a profit of Rs. 40.76 crore as detailed below:

(Amount in Rs.)

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
	Own fleet⁴⁵					
1	Cost <i>per</i> effective KM	16.50	18.66	19.88	21.28	23.30
2	Traffic Revenue <i>per</i> effective KM	16.67	19.35	21.00	21.22	22.32
3	Net Revenue <i>per</i> effective KM	0.17	0.69	1.12	(-)0.06	(-)0.98
	Hired buses					
4	No. of Hired buses at the end of the year	628	426	210	72	40
5	Cost <i>per</i> effective KM ⁴⁶	16.77	18.20	20.08	19.52	20.63
6	Traffic Revenue <i>per</i> effective KM	18.51	22.07	24.40	22.91	24.51
7	Net Revenue <i>per</i> effective KM	1.74	3.87	4.32	3.39	3.88
8	Total effective KMs operated (in lakh)	573.21	407.95	214.62	118.40	43.80
9	Profit from hired buses (Rs in crore)	9.98	15.79	9.26	4.02	1.70
10	Earnings <i>per</i> KM at 100 <i>per cent</i> load factor ⁴⁷	27.63	34.54	38.55	36.14	38.42
11	Break-even load factor considering traffic revenue (5/10)	60.70	52.70	52.10	54.00	53.70

⁴⁵ figures in Sl. No. 1 to 3 will not tally with figures given in the table under paragraph 3.1.9 as the same are for the Corporation as a whole and includes hired uses.

⁴⁶ this includes contract price *plus* conductors pay *plus* overheads.

⁴⁷ calculated based on the existing load factor of the Corporation.

3.1.52 Net revenue *per* effective KM from hired vehicles is more than that of own fleet. In view of the higher profitability from the hiring of vehicles, the number of hired buses should have increased over the years. However, the number of hired buses decreased from 628 in 2004-05 to 40 in 2008-09. It was stated by the Management (June 2009) that the private operators were cancelling the schedules abruptly for want of buses, crew, *etc.* The Management further stated (September 2009) that there was deterioration in the quality of services provided by the private operators and hence the Corporation was not in favour of hiring buses.

Body Building

3.1.53 The Corporation has a body building unit for fabrication of bus bodies. Fabrication is made by giving labour contract to outsourced agencies with materials being supplied by the Corporation. The total cost of fabricating 1,738 bus bodies during 2004-05 to 2008-09 was Rs. 85.31 crore. The Corporation has no proper costing system and only records direct material and labour charges paid towards fabrication without absorption of overheads. The Corporation also gets bus bodies built from private contractors. During 2004-08, the Corporation got 478 bus bodies built from private contractors. Besides, in 2008-09, the Corporation had procured fully built buses from Ashok Leyland on which the Corporation need not incur any cost for building bodies. The cost of bus bodies built in-house compared to those built by private contractors is indicated below.

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1	No. of buses fabricated in house	322	395	452	306	263
2	Cost of fabrication <i>per</i> bus (Rs. in lakh)	3.83	4.27	4.39	5.03	6.32
3	No. of days taken to fabricate a bus	58	45	41	47	43
4	No. of buses fabricated through private contractors	367	21	65	25	Nil
5	Cost of fabrication <i>per</i> bus (Rs. in lakh)	4.62	4.40	4.54	4.54	Nil
6	No. of days taken to fabricate a bus	32	41	30	31	Nil

From the above table, it may appear that the cost of fabrication of in-house bus bodies was less than the cost incurred in fabrication through private contractors. However, in the absence of absorption of overhead costs, Audit could not ascertain the actual expenditure incurred on in-house fabrication, which in any case would be higher than that stated above.

Financial Management

3.1.54 Raising of funds for capital expenditure, *i.e.*, for replacement/ addition of buses happens to be the major challenge in financial management of Corporation's affairs. This issue has been covered in Paragraph 3.1.23. The

section below deals with the Corporation's efficiency in raising claims and their recovery. This section also analyses whether an opportunity exists to realign the business model to generate more resources without compromising on service delivery.

Claims and Dues

3.1.55 The Corporation gives its buses on hire for which parties are required to pay in advance the charges at prescribed rates *per kilometre* basis at the time of booking. Hire charges are revised periodically taking into account the increase in the cost of operations. The Corporation collects additional amount of 10 *per cent* of the estimated amount as security. All the vehicles, which are sent on casual contract, are fitted with speedometers and billing is made on the basis of actual kilometres recorded. Charges from the private parties are recovered immediately and charges from the Government are being recovered in due course. The balance outstanding as at 31 March 2009 was Rs. 1.51 crore and these were less than one year old mainly due from Government departments.

The Corporation had not initiated action to propose a suitable alternative formula for claiming subsidy in respect of concessional passes.

3.1.56 The Corporation provides free / concessional passes to various categories of public like students, senior citizens, freedom fighters *etc.* The State Government agreed (August 2004) to reimburse 50 *per cent* of the estimated travel cost for each student pass based on the formula devised by TNS Mode Company (an agency appointed to recommend the basis of calculating the operational cost incurred on the student passes). The Corporation did not adopt the above formula and raised claim for subsidy on the basis of its own calculations. The claims of Rs. 386.58 crore were raised by the Corporation during 2004-09. The Corporation did not initiate any action to propose a suitable alternative formula for approval by the Government based on field study / survey. Government released Rs. 224.28 crore as subsidy for concessional passes issued to students from 2004-05 to 2007-08. However, Government directed (September 2008) the Corporation to re-submit the claims based on the approved formula. The Corporation requested (March 2009) the Government, to reconsider their claim stating that TNS mode basis was not scientific as far as the Corporation was concerned. The Government, however, rejected (April 2009) the claim and assessed the amount due at Rs. 176.08 crore⁴⁸ for the period 2004-05 to 2008-09 against which subsidy of Rs. 224.28 crore had been released up to 2007-08 and directed adjustment of excess release against future claims. Audit observed that the Corporation's case for excess claim for subsidy was weak as it is not based on any study/ survey. Had the Corporation initiated steps to devise an alternative formula, the Corporation could have made a favourable case for higher subsidy.

Realignment of business model

3.1.57 The Corporation was mandated to provide an efficient, adequate and economical road transport to public. Therefore, the Corporation can not take

⁴⁸ 2004-05 Rs. 24.35 crore, 2005-06 Rs. 30.12 crore, 2006-07 Rs. 43.33 crore, 2007-08 Rs. 38.78 crore and 2008-09 Rs. 39.50 crore.

an absolutely commercial view in running its operations. It has to cater to uneconomical routes to fulfil its mandate and keep the fares affordable. In such a situation, it was imperative for the Corporation to tap non-traffic revenue sources to cross-subsidize its operations. The share of non-traffic revenues (other than interest on investments) was nominal at 6.21 *per cent* of total revenue during 2004-09. This revenue mainly came from advertisements, commercial establishments, *etc.*

The Corporation did not have any policy for tapping non-traffic revenue sources through PPP projects.

3.1.58 Over a period of time, the Corporation had acquired 82 sites occupying the land of 32.26 lakh square metres at prime locations in Bangalore city and its agglomerations. The Corporation constructed various commercial establishments in bus stands to provide basic amenities to the public besides generating revenue by letting out the spaces. During the period under review (2004-09), the revenue generated from these establishments was Rs. 22.79 crore. However, the Corporation did not have any policy for tapping non-traffic revenue sources by taking up large scale PPP projects in the vacant land.

3.1.59 The construction of 10 Travel Transit Management Centre (TTMCs) had been taken up by the Corporation under Jawaharlal Nehru National Urban Renewal Mission (JnNURM) funding which are intended to provide modern basic passenger amenities *viz.*, parking facilities, various commercial establishments fetching rent to the Corporation besides bus stations maintenance. As against the tendered amount of Rs. 444.42 crore, the total expenditure incurred up to March 2009 was Rs. 120.81 crore. These centres are planned to be completed during 2009-10 and 2010-11.

3.1.60 The Corporation was providing advertisement space on its buses to individuals and agencies at agreed terms and conditions. The Regional Transport Authority banned (December 2005) display of advertisements on the exterior panel of buses which was partially relaxed (June 2008) in case of Volvo buses. The revenue from advertisements on its buses increased from Rs. 1.95 crore in 2004-05 to Rs. 7.12 crore in 2008-09.

Fare policy and fulfilment of social obligations

Existence and fairness of fare policy

3.1.61 Section 67 of Motor Vehicles Act, 1988 empowered the State Government to fix the minimum and maximum rates for stage contract and goods carriages. The Government of Karnataka approved (September 2000) an Automatic Fare Adjustment Procedure to enable the Corporation to revise the passenger bus fares from time to time to offset increases and decreases in the price of diesel and revision of dearness allowances to employees. The revised fares are implemented after approval by the Government. Based on this order, during the period 2004-05 to 2008-09 the fare was increased four times and decreased once.

3.1.62 The table below indicates approximate fare existing during the period under review in respect of ordinary buses.

Stages	2004-05	2005-06	2006-07	2007-08	2008-09
First 5 KMs	4.00	5.00	6.00	6.00	7.00
First 10 KMs	6.00	7.00	8.00	8.00	9.00
25 KMs	8.00	10.00	10.00	10.00	11.00
100 KMs	--	21.00	22.00	22.00	23.00

3.1.63 The fare policy of the Corporation has no scientific basis as it does not take into account the normative cost. However, the performance of the Corporation with respect to vehicle productivity, manpower productivity and KMPL was better than the All India Average in all the years and the Corporation was considered the best performer during 2006-07 by the Association of State Road Transport Undertakings (ASRTU) under the above category.

Adequacy of services on uneconomical routes

In the absence of norms, the adequacy of services on uneconomical routes could not be ascertained in audit.

3.1.64 The Corporation had about 56 *per cent* profit making schedules as of March 2009 as shown in table under paragraph 3.1.32. Though the Corporation was required to cater to uneconomical routes, they had not formulated any norms for providing such services. In the absence of norms, the adequacy of services on uneconomical routes could not be ascertained in audit. An independent regulatory body to specify the quantum of services on uneconomical routes, taking into account the specific needs of commuters, would be desirable.

Monitoring by top management

MIS data and monitoring of service parameters

3.1.65 For an organisation like a Road Transport Corporation to succeed in operating economically, efficiently and effectively, there has to be written norms of operations, service standards and targets. Further, there has to be a Management Information System (MIS) to report on achievement of targets and norms. The achievements need to be reviewed to address deficiencies and also to set targets for subsequent years. The targets should generally be such that the achievement of which would make an organisation self-reliant. In the light of this, Audit reviewed the system obtaining in the Corporation. The status in this regard is given below.

3.1.66 Internal targets for various parameters are fixed by the Heads of the Department in consultation with functional Directors/Managing Director. The MIS cell headed by Chief Manager (MIS) compiles monthly data on all the physical and financial parameters of each depot and prepares a monthly Performance Appraisal Report (PAR). The PAR is issued to all Heads of Department and functional Directors. The performance of each depot is

monitored by each Head of Department through periodical internal meetings held at the depot and at Central Office. Directions are issued for remedial actions. The overall performance of the Corporation is being reviewed by the Board on quarterly basis.

Acknowledgement

Audit acknowledges the co-operation and assistance extended by the staff and the Management of the Corporation at various stages of conducting the performance review.

Conclusion

Operational performance

- The Corporation could keep pace with the growing demand for public transport in terms of vehicle *per* lakh population, which increased from 57 in 2004-05 to 73 in 2008-09.
- The Corporation could recover the cost of operation in all the years under review. However, the same showed a declining trend from 2006-07 onwards.
- The vehicle productivity of the Corporation was above all India average. However, the passenger load factor was lower and declined compared to 2004-05.
- The Corporation did not carry out timely preventive maintenance in 46.25 *per cent* of the vehicles becoming due for docking and EOC as seen in selected depots affecting the road worthiness of its buses.
- The manpower *per* bus has reduced from 5.39 in 2004-05 to 5.02 in 2008-09.
- The Corporation could not ensure economy in fuel consumption which had decreased from 4.74 in 2004-05 to 4.37 in 2008-09. Even the internal targets could not be achieved except in 2008-09.
- Despite hiring of buses being a profitable venture, the number of buses hired by the Corporation declined from 628 at the end of 2004-05 to just 40 in 2008-09.

Financial Management

- Though the non-conventional sources of revenue constituted 6.21 *per cent* of total revenue during 2004-09, the Corporation did not have a policy in place for tapping the non-conventional sources.

Fare policy and fulfilment of social obligations

- The automatic Fare Adjustment Procedure prescribed by the State Government does not take into account increase in costs other than fuel and Dearness Allowance.
- In the absence of norms, the adequacy of services on uneconomical routes could not be ascertained in Audit.

Monitoring by top management and future needs

- The MIS system of the Corporation is effective to exercise sufficient control over its operation and monitor key operational parameters.

However, on the whole, there is still some scope to improve the performance.

Recommendations

Operational performance

- The operations of Volvo services on a large scale needs a re-look.
- The Corporation needs to pay attention to passenger load factor in order to enhance it.
- In order to improve performance of buses preventive maintenance schedules should be adhered to.

Financial Management

- The Corporation may consider devising a policy for tapping non-conventional sources of revenue by undertaking PPP (Public Private Partnership) projects.

Fare Policy and fulfilment of social obligations

- The Government may consider creating a regulator to regulate fares and also services on uneconomical routes.
- The Government may consider reimbursing the Corporation the actual cost of free / concessional travel facility provided on its instructions.
- A policy yardstick to decide on the operation of uneconomical routes / schedules needs to be laid down.

3.2 Karnataka State Road Transport Corporation, North Western Karnataka Road Transport Corporation and North Eastern Road Transport Corporation

Functioning of Rural Transport Corporations

Executive Summary

The Karnataka State Road Transport Corporation (KSRTC), North Western Karnataka Road Transport Corporation (NWKRTC), North Eastern Karnataka Road Transport Corporation (NEKRTC) provide public transport in Karnataka. The three Corporations had a collective fleet strength of 14,684 buses as on 31st March 2009 and carried an average of 49.67 lakh passengers per day. The performance audit of the Corporations for the period from 2004-05 to 2008-09 was conducted to assess efficiency and economy of its operations, ability to meet its financial commitments, possibility of realigning the business model to tap non-conventional sources of revenue, existence and adequacy of fare policy and effectiveness of the top management in monitoring the affairs of the Corporation.

Finances and Performance

The Corporations suffered loss of Rs. 39.53 crore in 2008-09. The accumulated losses and borrowings of the three Corporations stood at Rs. 694.25 crore and Rs. 756.78 crore as at 31 March 2009, respectively. The Corporations earned Rs. 16.56 per kilometre and expended Rs. 19.09 per kilometre in 2008-09.

Share in Public Transport

Out of 22,828 buses licensed for public transport in 2008-09, about 64.3 per cent belonged to the three Corporations. The percentage share increased from 54.3 per cent in 2004-05. Vehicle density (including private operators' buses) per one lakh population increased from 37 in 2004-05 to 38 in 2008-09.

Vehicle profile and utilisation

The three Corporations together added 11,259 buses during 2004-09 at a total cost of Rs. 1,469.55 crore thereby reducing the average fleet from 20.13 per cent in 2004-05 to 16.16 per cent in 2008-09. The acquisition was primarily funded

through commercial borrowings and Government support.

The overall fleet utilisation of the Corporations declined from 95.47 per cent in 2004-05 to 90.86 per cent in 2008-09, which was less than the all India average (AIA) of 94.10 per cent in 2008-09. The overall vehicle productivity at 352 kilometres per day per bus in 2008-09 was higher than the AIA of 351 kilometres. Their passenger load factor at 63.9 per cent, was less than the AIA of 68 per cent. The Corporations did well on operational parameters. However, 82 per cent schedules of buses were unprofitable and 50 per cent schedules were not earning enough to meet even variable cost of operation. Corporations' performance on preventive maintenance was poor as the maintenance done on time reduced from 76.07 to 52.37 per cent from 2004-05 to 2008-09.

Economy in operations

Manpower and fuel constitute 69 per cent of total cost. Interest, depreciation and taxes account for 16 per cent and are not controllable in the short term. Thus, the major cost saving has to come from manpower and fuel. The Corporations succeeded in reducing the manpower per bus from 5.59 in 2004-05 to 4.89 in 2008-09. However, the expenditure on repairs and maintenance was Rs. 375.84 crore (Rs. 2.58 lakh per bus) in 2008-09, of which nearly 25.90 per cent was on manpower. The Corporations did not attain their own fuel consumption targets resulting in excess consumption of fuel valued at Rs. 171.35 crore during 2004-09.

The cancellation of scheduled Kilometres for want of buses and crew was about 48.92 per cent of the total cancellations during 2004-09. As a result of this, the Corporations were deprived of contribution to an extent of Rs. 87.06 crore.

The Corporations have just 140 hired buses as at the end of 31 March 2009, where bus owners provide buses with drivers and incur all expenses. The Corporations provide conductors and makes payment as per kilometres operated. The Corporations earned a net profit of Rs. 65.87 crore from hired buses during 2004-09. Though this arrangement has the potential to cut down the cost substantially, the number of hired buses was reduced from 1,450 to 140 as the private operators had withdrawn their buses from operation.

Revenue Maximisation

The Corporations have about 100.63 lakh square metres of land. As they mainly utilise ground floor/ land for their operations, the space above can be developed on public private partnership (PPP) basis to earn steady income, which can be used to cross-subsidise their operations. However, the Corporations do not have any policy for the same.

Need for a regulator

The Government had approved automatic fare revision whenever there is an increase in cost of fuel and DA. Though revision of fare is being effected, the revision does not take into consideration the increase in other operational costs. In the absence of norms, the adequacy of services on uneconomical routes could not be ascertained in Audit. Thus, it would be desirable

to have an independent regulatory body (like State Electricity Regulatory Commission) to fix the fares, specify operations on uneconomical routes and address grievances of commuters.

Monitoring

The fixation of targets for various operational parameters and an effective Management Information System (MIS) for obtaining feed back on achievement thereof are essential for monitoring by the top management. Internal targets are fixed by the Management. Monthly Performance Appraisal Report is compiled and reviewed by top Management. Depot-wise performance is monitored by Departmental Heads and directions issued for remedial actions.

Conclusion and Recommendations

Though the Corporations are incurring losses, it is mainly due to their high cost of operations (excess consumption of fuel) and negligible reliance on hired buses. The Corporations can control the losses by controlling excess consumption of fuel and tapping non-conventional sources of revenue. This review contains nine recommendations to improve the Corporations' performance. Examining reasons for high consumption of fuel, creating a regulator to regulate fares and services and tapping non-conventional sources of revenue by undertaking PPP projects are some of these recommendations.

Introduction

3.2.1 In Karnataka, the public road transport is primarily provided by four Corporations⁴⁹ viz., KSRTC, NWKRTC, NEKRTC and BMTC, which are mandated to provide an efficient, adequate, economical and properly co-ordinated road transport. The State also allows the private operators to provide public transport. The State has reserved certain routes exclusively for the Corporations while allowed both Corporations and private operators to operate on some other routes. The fare structure is controlled and approved by the Government.

3.2.2 The KSRTC was incorporated (August 1961) by Government under Section 3 of the Road Transport Corporation Act, 1950 as a wholly owned Corporation of the State Government. In order to avoid financial loss and to improve the transport services in the State, two other corporations were formed viz., NWKRTC on 1st November 1997 which catered mainly to Belgaum, Dharwad, Bijapur, Uttara Kannada, Gadag, Bagalokot and Haveri districts and NEKRTC on 15th August 2000 which catered to Bidar, Gulbarga, Raichur, Bellary and Koppal. The KSRTC covered operations in the remaining districts of the State.

3.2.3 The Corporations are under the administrative control of the Transport Department of the Government of Karnataka. The Management of the Corporations is vested with the Board of Directors for each Corporation comprising Chairman, Managing Director and Directors appointed by the Government of Karnataka. As at the end of March 2009, the Board of KSRTC comprised one non official⁵⁰ Chairman, one non official Vice Chairman and 11 Directors including Managing Director. The Board of NEKRTC and NWKRTC consisted of 11 Directors (including the Managing Director) and a Chairman respectively. The Managing Director is the Chief Executive of respective Corporations. These Corporations function under a three tier system with Depots at the operational level being controlled by the Division and the Central Office. Each Division is an accounting unit. The day-to-day functioning of each Corporation is carried out by the Managing Director, with the assistance of Heads of Departments at Central Office, Divisional Controllers and the Depot Managers. The Corporations had 27 Divisions consisting of 148 Depots and three Regional Workshops as at the end of March 2009. The bus body building is carried out at Central Workshop and through external agencies. The tyre retreading operations are done at own retreading plants at Divisional Workshops.

3.2.4 The three Corporations had a collective fleet strength of 14,684 buses as on 31 March 2009 including 140 hired buses and 98 taken over buses⁵¹ by KSRTC. No buses were taken over by NEKRTC and NWKRTC. The

⁴⁹ Karnataka State Road Transport Corporation (KSRTC), North Western Karnataka Road Transport Corporation (NWKRTC), North Eastern Karnataka Road Transport Corporation (NEKRTC) and Bangalore Metropolitan Transport Corporation (BMTC).

⁵⁰ Honourable Minister of Transport, Government of Karnataka.

⁵¹ taken over from private operators by KSRTC and run and maintained by it.

Corporations carried an average of 49.67 lakh passengers *per day* during 2004-05 to 2008-09. The turnover of the Corporations was Rs. 3,191.85 crore in 2008-09, which was equal to 1.19 *per cent* of the State Gross Domestic Product as *per Advance Estimate* for 2008-09⁵². The Corporations together employed 71,202 employees as at 31 March 2009.

Scope of Audit and Audit Methodology

3.2.5 The present review conducted during February 2009 to May 2009 covers the performance of the Corporations during the period from 2004-05 to 2008-09. The review mainly deals with operational efficiency, financial management, fare policy, fulfilment of social obligations and monitoring by top management of the Corporations. The audit examination involved scrutiny of records at the Head Office of each Corporation, two Regional Workshops, and seven⁵³ out of the 27 divisions. Selection of depots is based on probability proportion to size without replacement independently for each corporation considering the profit / loss for 2007-08 for each division as the size measure.

3.2.6 Traffic revenue earned by the seven divisions during 2008-09 and their Fleet Strength as on 31 March 2009 *vis-à-vis* the Traffic Revenue and fleet Strength of the respective Corporations is tabulated below:

Sl. No	Particulars	KSRTC	NEKRTC	NWKRTC
1	No. of Divisions selected	3	2	2
2	Traffic Revenue of selected Divisions (Rs. in crore)	498.72	196.63	236.83
3	Percentage to the Traffic revenue of the Corporation	35	38	27
4	Total fleet strength of the selected divisions (own buses)	1,945	982	1,315
5	Percentage to the fleet strength of the Corporation	29	35	27

3.2.7 The methodology adopted for attaining the audit objectives with reference to audit criteria consisted of explaining audit objectives to top management, scrutiny of records at Head Office and selected units, interaction with the auditee personnel, analysis of data with reference to audit criteria, raising of audit queries, discussion of audit findings with the Management and issue of draft review to the Management for comments.

⁵² Source: Directorate of Economics and Statistics, Bangalore.

⁵³ KSRTC – Bangalore Central Division, Mysore Urban Division, Hassan Division.
NEKRTC - Gulbarga Division, Bidar Division.

NWKRTC - Hubli Division and Uttar Kannada Division. The depots were:

KSRTC – Depots 2 and 4 at Bangalore, Depot 2 and City-Transport-1 depot at Mysore, Depots at Hassan and Channarayapatna.

NEKRTC – Depots at Gulbarga, Jeevargi, Humnabad and Bidar.

NWKRTC – Depots at Hubli (Mofussil-1), Dharwad, Kumta, Sirsi.

Audit Objectives

3.2.8 The objectives of the performance audit were to assess:

Operational Performance

- the extent to which the Corporations were able to keep pace with the growing demand for public transport;
- whether the Corporations succeeded in recovering the cost of operations;
- the extent to which the Corporations were running their operations efficiently;
- whether adequate maintenance was undertaken to keep the vehicles roadworthy; and
- the extent to which economy was ensured in cost of operations.

Financial Management

- whether the Corporations were able to meet their commitments and recover their dues efficiently; and
- the possibility of realigning the business model of the Corporations to tap non-conventional sources of revenue and adopting innovative methods of accessing such funds.

Fare Policy and Fulfilment of Social Obligations

- the existence and adequacy of fare policy; and
- whether the Corporations operated adequately on uneconomical routes.

Monitoring by Top Management

- whether the monitoring by Corporations' top management was effective.

Audit Criteria

3.2.9 The audit criteria adopted for assessing the achievement of the audit objectives were:

- all India averages for performance parameters;
- performance standards and operational norms fixed by the Association of State Road Transport Undertakings (ASRTU);
- physical and financial targets/ norms fixed by the Management;
- manufacturers' specifications, norms for life of a bus, preventive maintenance schedule, fuel efficiency norms, *etc.*;
- instructions of the Government of India (GOI) and State Government and other relevant rules and regulations;

- corporate policy for investment of funds; and
- procedures laid down by the Corporation.

Financial Position and Working Results

3.2.10 The consolidated⁵⁴ financial position of all the Corporations for the five years up to 2008-09 is given below:

(Rs. in crore)

	2004-05	2005-06	2006-07	2007-08	2008-09 (provisional)
A. Liabilities					
Paid up Capital	415.53	452.53	452.53	552.52	674.71
Reserve and Surplus (including Capital Grants but excluding Depreciation Reserve)	79.79	87.68	95.90	106.16	119.59
Borrowings (Loan Funds)	383.47	475.58	588.38	740.31	756.78
Current Liabilities & Provisions	462.21	537.59	618.69	739.54	770.89
Total of liabilities	1,341.00	1,553.38	1,755.50	2,138.53	2,321.97
B. Assets					
Gross Block	1,191.00	1,458.88	1,741.65	2,095.39	2,315.37
Less: Depreciation	718.58	804.29	907.89	1,037.05	1,192.29
Net Fixed Assets	472.42	654.59	833.76	1,058.34	1,123.08
Capital works-in- progress (including cost of chassis)	71.44	42.78	48.81	111.07	111.94
Investments	1.85	0.10	0.10	8.10	0.10
Current Assets, Loans and Advances	197.19	226.60	260.56	306.27	392.60
Accumulated losses	598.10	629.31	612.27	654.75	694.25
Total of Assets	1,341.00	1,553.38	1,755.50	2,138.53	2,321.97

⁵⁴ the year-wise financial position for individual Corporation are given in Annexure 5.

3.2.11 The details of consolidated⁵⁵ working results like operating revenue and expenditure, total revenue and expenditure, net surplus/loss and earnings and cost *per kilometre* of operation are given below:

(Rs. in crore)						
Sl. No.	Description	2004-05	2005-06	2006-07	2007-08	2008-09 (provisional)
1	Total Revenue	1,843.10	2,180.28	2,541.18	2,862.74	3,195.36
2	Operating Revenue ⁵⁶	1,777.14	2,064.73	2,457.28	2,766.24	2,946.52
3	Total Expenditure	1,919.16	2,211.49	2,524.15	2,905.22	3,234.89
4	Operating Expenditure ⁵⁷	1,833.50	2,121.97	2,426.43	2,754.53	3,084.27
5	Operating Profit/Loss	-56.36	-57.24	30.85	11.71	-137.75
6	Profit/Loss for the year	-76.06	-31.21	17.03	-42.48	-39.53
7	Accumulated profit/loss	-598.10	-629.31	-612.27	-654.75	-694.25
8	Fixed costs					
	Personnel Costs	642.28	663.44	735.95	849.57	926.63
	Depreciation	126.39	156.80	197.32	241.36	295.98
	Interest	24.86	26.75	42.91	62.74	80.55
	Other Fixed Costs	68.77	87.23	89.11	108.64	101.41
	Total Fixed Costs	862.30	934.22	1,065.29	1,262.31	1,404.57
9	Variable Costs					
	Fuel and Lubricants	590.63	772.12	956.89	1,089.45	1,307.62
	Tyres and Tubes	55.65	65.51	89.83	116.94	128.34
	Other Items/ spares	149.46	158.35	145.64	185.98	205.11
	Taxes (MV Tax, Passenger Tax, etc.)	125.06	146.64	170.25	189.84	164.60
	Other Variable Costs	136.06	134.65	96.25	60.70	24.65
	Total Variable Costs	1,056.86	1,277.27	1,458.86	1,642.91	1,830.32
10	Effective KMs operated (in lakh) (own + hired)	12,990.71	13,575.23	14,788.72	16,111.78	16,942.56
11	Earnings <i>per KM</i> (Rs.)(1/10)	14.19	16.06	17.18	17.77	18.86
12	Fixed Cost <i>per KM</i> (Rs.) (8/10)	6.64	6.88	7.20	7.83	8.29
13	Variable Cost <i>per KM</i> (Rs.) (9/10)	8.14	9.41	9.86	10.20	10.80
14	Cost <i>per KM</i> (Rs.) (12+13)	14.78	16.29	17.06	18.03	19.09
15	Net Earnings <i>per KM</i> (Rs.) (11-14)	- 0.59	- 0.23	0.12	- 0.26	- 0.23
16	Traffic Revenue ⁵⁸ (Rs. in crore)	1680.49	1967.89	2290.49	2577.22	2804.93
17	Traffic Revenue <i>per KM</i> (Rs.) (16/10)	12.94	14.50	15.49	16.00	16.56

⁵⁵ the year-wise working results for individual Corporations are given in Annexure 6.

⁵⁶ operating revenue includes traffic earnings, passes and season tickets, re-imburement against concessional passes, fare realised from private operators under 'KM Scheme', etc.

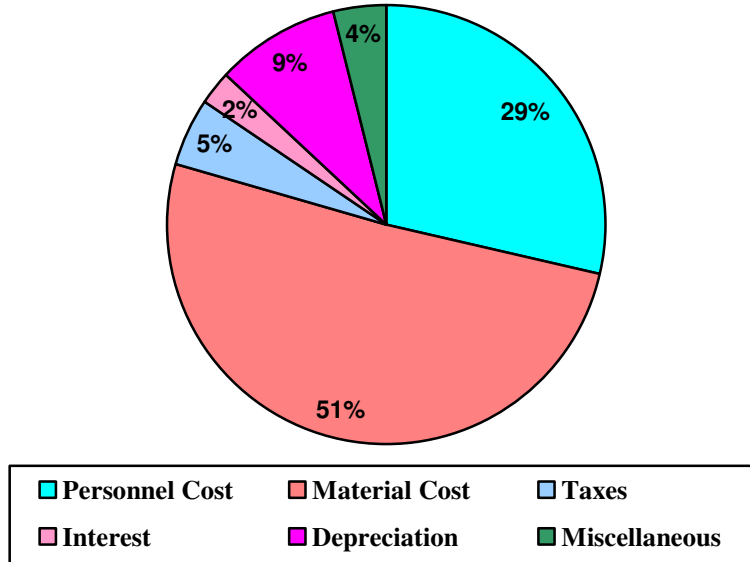
⁵⁷ operating expenditure include expenses relating to traffic, repair and maintenance, Depreciation on fleet, electricity, welfare and remuneration, licences and taxes and general administration expenses.

⁵⁸ traffic revenue represents sale of tickets, advance booking, reservation charges and contract services earnings.

Elements of Cost

3.2.12 Personnel cost and material cost constitute the major elements of cost. The percentage break-up of costs for 2008-09 is given below in the pie-chart.

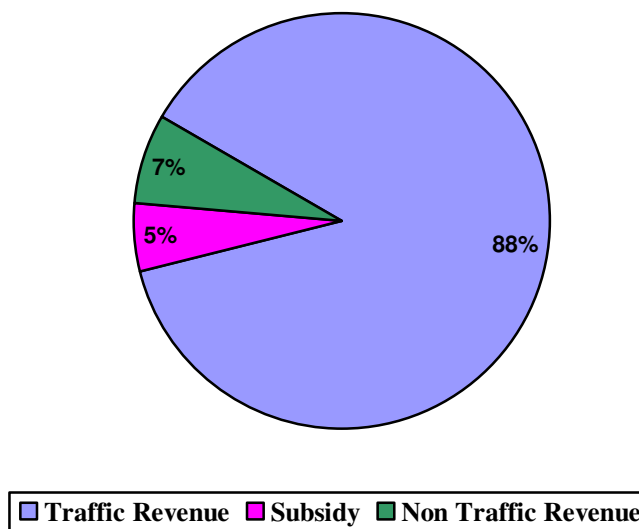
Components of various elements of cost



Elements of revenue

3.2.13 Traffic revenue, subsidy/ grant and non-traffic revenue constitute the major elements of revenue. The percentage break-up of revenue for 2008-09 is given below in the pie-chart.

Components of various elements of revenue



Audit Findings

3.2.14 Audit explained the audit objectives to the Corporation during an ‘entry conference’ held on 11th February 2009. Subsequently, audit findings were reported to the Corporation and the Government on 18th August 2009 and discussed in an ‘exit conference’ held on 22nd September 2009, which was attended by Deputy Secretary, Transport Department, Government of Karnataka and the Managing Directors of three Corporations. The views expressed by them have been considered while finalising this review. The audit findings are discussed below.

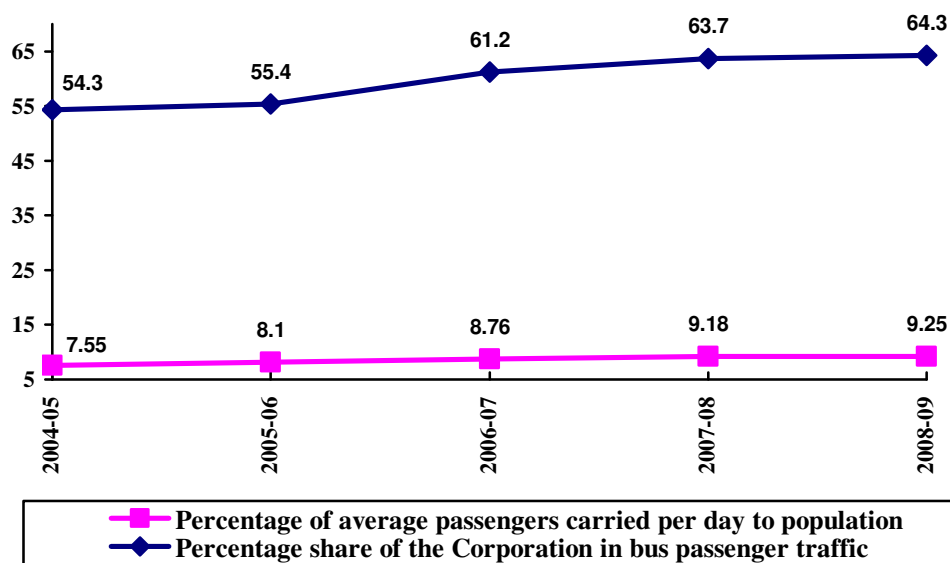
Operational Performance

3.2.15 The operational performance of the Corporations for the five years ending 2008-09 is given in the **Annexure 7**. The operational performance of the Corporation was evaluated on various operational parameters as described below. It was also seen whether the Corporation was able to maintain pace with the growing demand of public transport. Audit findings in this regard are discussed in the subsequent paragraphs. These audit findings show that the losses were controllable and there is scope for improvement in performance.

Share of Corporation in public transport

3.2.16 State does not have a transport policy. The Government stated (July 2009) that the policy was under preparation.

3.2.17 Line-graphs depicting the share of the Corporations’ buses in the bus passenger traffic⁵⁹ of the State and percentage of average passengers carried *per* day by the Corporation to the population of the State during five years ending 2008-09 are given below:



⁵⁹ worked out by Audit on the basis of buses held by the Corporations *vis-à-vis* private operators.

3.2.18 The table below depicts the growth of public transport in the State.

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Corporations buses including hired buses	11,235	12,214	13,203	14,405	14,684
Private stage carriages	9,441	9,844	8,382	8,214	8,144
Total buses for public transport	20,676	22,058	21,585	22,619	22,828
Percentage share of Corporation	54.3	55.4	61.2	63.7	64.3
Percentage share of private operators	45.7	44.6	38.8	36.3	35.7
Estimated population (crore)	5.56	5.65	5.75	5.84	5.94
Vehicle density <i>per</i> one lakh population	37	39	38	39	38

The Corporations were able to keep pace with growing demand of public transport.

3.2.19 It may be seen from the above table that the Corporations were able to maintain pace with the growing demand of public transport. Audit noticed that effective *per capita* KM (as given in the table below) and the capacity utilization (*i.e.*, number of buses *per* one lakh population referred in paragraph 3.2.34) also showed an increasing trend.

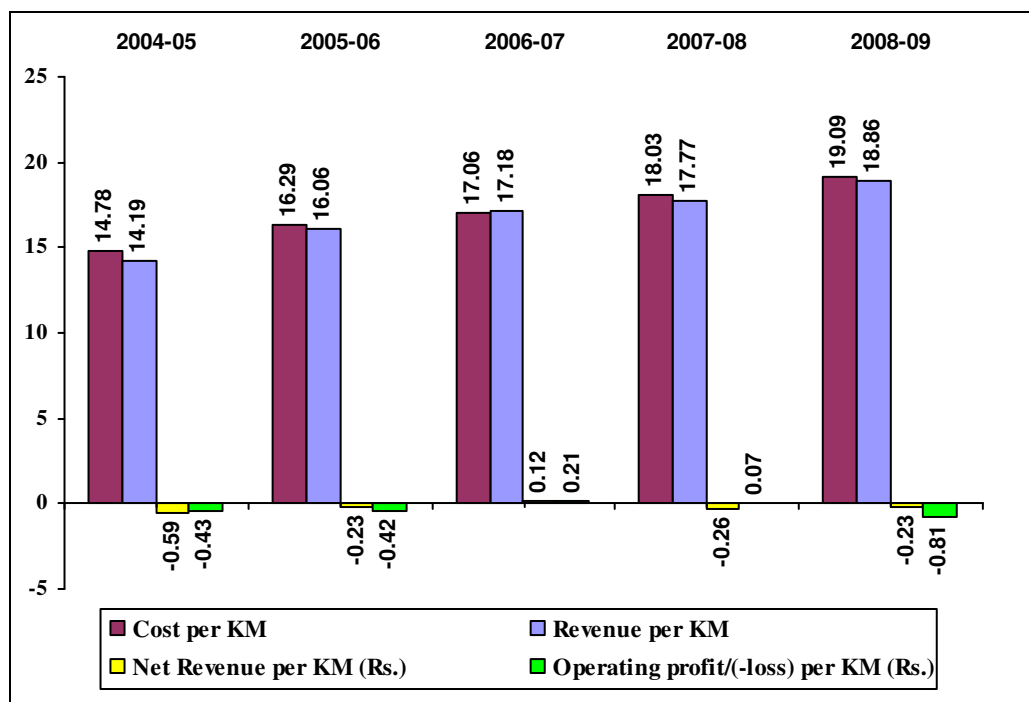
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Effective KM operated (lakh)	12,990.71	13,575.23	14,788.72	16,111.78	16,942.56
Estimated Population (crore)	5.56	5.65	5.75	5.84	5.94
<i>Per Capita</i> KM <i>per</i> year	23.36	24.03	25.72	27.59	28.52

3.2.20 Public transport has definite benefits over personalised transport in terms of costs, congestion on roads and environmental impact. The public transport services have to be adequate to derive those benefits. In the instant case, the Corporations have succeeded in enhancing the reach of public transport.

Recovery of cost of operations

3.2.21 The Corporations were able to recover the cost of operations collectively only in 2006-07. The cost *per* KM, revenue *per* KM, net revenue *per* KM and operating profit / loss *per* KM during the last five years ended 2008-09 is shown in the graph⁶⁰ below:

⁶⁰ Cost *per* KM represents total expenditure divided by effective KM operated.
 Revenue *per* KM is arrived at by dividing total revenue with effective KM operated.
 Net Revenue *per* KM is revenue *per* KM reduced by cost *per* KM.
 Operating loss *per* KM would be operating expenditure *per* KM reduced by operating income *per* KM.



While KSRTC was able to recover the cost of operations in all the years, NWKRTC could recover the costs only in 2006-07 and NEKRTC was not able to recover in any of the years during 2004-09.

3.2.22 Collective revenue *per KM* for the three Corporations was less than the AIA in all the years under review. Cost *per KM* was less than AIA during 2004-05 to 2006-07, but was above AIA during 2007-08 and 2008-09. Detailed analysis in audit revealed that KSRTC was able to recover its cost of operations in all the five years. However, NWKRTC was able to recover its cost of operations only during 2006-07 due to receipt of increased subsidy of Rs. 69.25 crore from the Government. Further, NEKRTC was not able to recover its cost of operations in any of the years under review. The Management of these Corporations attributed (July 2007 and March 2009) the losses to unhealthy and unethical competition by the private operators, compulsion to operate uneconomical routes, abrupt cancellation of hired buses on premier revenue earning long distance routes and reduced load factor. Audit noticed that continuous losses in NWKRTC affected the liquidity position of the Corporation so that even employees related payments like gratuity and other terminal benefits were being made belatedly. Dues as on 31 March 2008 towards employees related payments (Rs. 54.53 crore) and society dues⁶¹ (Rs. 11.21 crore) were not discharged even as on 31 March 2009. Since September 2008, salaries to operating crew were being made belatedly ranging from 15 to 30 days. State Government permitted (August 2001) NEKRTC to retain the Motor Vehicle Tax (MV Tax) to the extent of cash loss suffered by it. Hence, the amount of Rs. 193.12 crore due to the Government towards MV Tax as on 31 March 2009 was utilised to meet current liabilities.

⁶¹ amount deducted from employees salaries for remittance to various thrift and credit societies.

Efficiency and Economy in operations

Fleet strength and utilisation

Fleet Strength and its Age Profile

3.2.23 The Corporations have their own fleet of buses. They also hire buses from contractors. Audit findings in respect of hired buses are given in paragraph 3.2.55. The table below explains the position of Corporations' own fleet as a whole.

3.2.24 The Association of State Road Transport Undertakings (ASRTU) had prescribed (September 1997) the desirable age of a bus as eight years or five lakh kilometres, whichever was earlier. However, the Corporations have adopted a policy of scrapping the buses which have reached 8.5 lakh KMs (KSRTC), 7.5 lakh KMs (NEKRTC and NWKRTC). The table below shows the age-profile of the buses held by the Corporations⁶² for the period of five years ending 2008-09.

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1	Total No. of buses at the beginning of the year (own vehicles)	9,433	9,785	10,989	12,462	13,895
2	Additions during the year	1,329	2,302	2,641	3,050	1,937
3	Buses scrapped during the year (1+2-4)	977	1,098	1,168	1,617	1,386
4	Buses held at the end of the year	9,785	10,989	12,462	13,895	14,446
5	Of (4), No. of buses over-age buses as <i>per</i> Corporations' norms	1,970	2,600	2,794	2,529	2,335
6	Percentage of overage buses to total buses	20.13	23.66	22.42	18.20	16.16

Percentage of overage buses which had crossed the scrapping limit decreased over the years in all the Corporations.

3.2.25 It may be seen from the above table that percentage of buses which have crossed scrapping limit is gradually decreasing over the years. During 2004-09, the Corporations added 11,259 new buses at a cost of Rs. 1,469.55 crore. To achieve the norm of right age buses adopted by NEKRTC, it would require buying 818 buses which would cost Rs. 103.33 crore and NWKRTC would require Rs. 187.56 crore to buy 1,485 buses. Replacement of 32 buses in KSRTC would require Rs. 4.04 crore.

3.2.26 KSRTC borrowed Rs. 519.58 crore from commercial banks and also utilised Rs. 319.55 crore from internal resources during 2004-09 for purchase of 6,073 buses. NEKRTC and NWKRTC purchased 2,039 and 3,147 buses, respectively during 2004-09. Since they did not generate adequate internal resources to finance the replacement of buses, they borrowed Rs. 179.91 crore and Rs. 411.55 crore, respectively from commercial banks. Further, they got

⁶² the position for individual Corporation are given in Annexure 10.

NWKRTC and NEKRTC did not have internal resources for acquiring new buses.

Rs. 65.75 crore and Rs. 120.75 crore as Government support in the form of Capital contribution during that period. Thus, the ability of these Corporations to survive and grow depends on their efforts to remove operational inefficiencies, cut costs and tap non-conventional revenue sources so that they can fund their capital expenditure and be self-reliant.

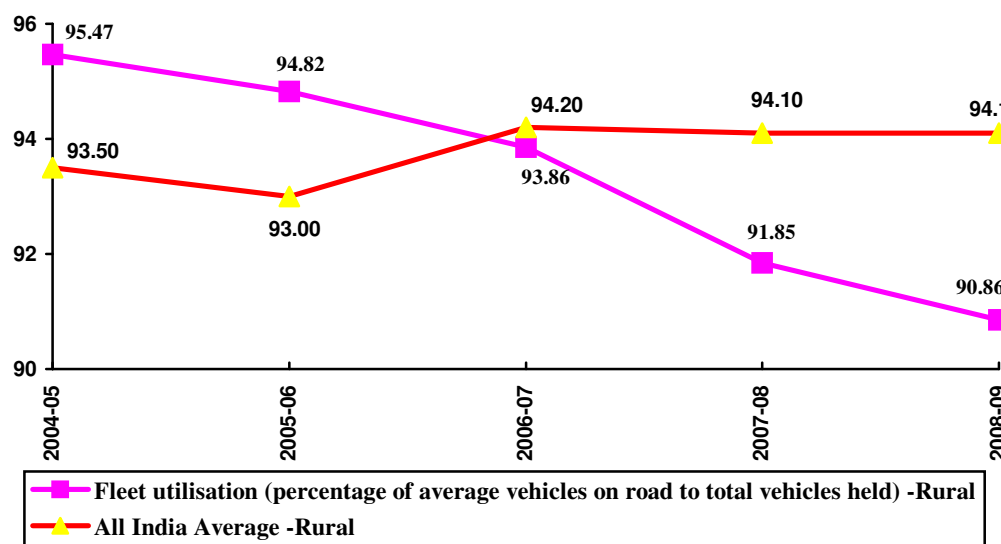
Fleet utilisation

3.2.27 Fleet utilisation represents the ratio of buses on road (including hired) to

Fleet utilisation declined from 95.47 per cent in 2004-05 to 90.86 per cent in 2008-09.

Andhra Pradesh, Tamil Nadu (Kumbakonam) and Tamil Nadu (Coimbatore) registered best fleet utilisation at 99.4, 98.4 and 98.3 per cent respectively during 2006-07. (Source : STUs profile and performance 2006-07 by CIRT, Pune)

the buses held by the Corporation. The Corporations had not set target of fleet utilisation in any of the years under review. The fleet utilisation varied from 95.47 per cent in 2004-05 to 90.86 per cent in 2008-09 as compared to the All India Average⁶³ as indicated in the graph given below.



3.2.28 The individual Corporation-wise fleet utilisation during 2004-09 is given in the table below.

Corporation	2004-05	2005-06	2006-07	2007-08	2008-09
	<i>per cent</i>				
KSRTC	95.05	93.70	92.53	91.11	88.87
NWKRTC	95.64	95.85	94.74	91.68	92.46
NEKRTC	96.00	95.54	95.00	93.92	92.99
AIA ⁶³	93.50	93.00	94.20	94.10	94.10

⁶³ All India Average for the year 2008-09 is not available. Hence figures for 2007-08 are adopted.

3.2.29 In KSRTC, Audit analysed that the main reasons for declining trend in fleet utilization was increase in percentage of spare fleet (*i.e.*, fleet held in the Depots to replace the on road running fleet due to breakdowns, accidents, *etc.*) to 10.70 *per cent* in 2008-09 which was much more than the norm of 8 *per cent* fixed by the Corporation. Further, there was delay in repair of vehicles ranging from 3 to 151 days in excess of the time limit prescribed for minor (two days), medium (five days) and major repairs (15 days). In all the Corporations, breakdowns and shortage of crew as discussed in paragraph 3.2.41 led to reduction in fleet utilisation. These impacted the operational performance adversely.

Vehicle productivity

3.2.30 Vehicle productivity refers to the average Kilometres run by each bus (including hired buses) *per day* in a year. The vehicle productivity of the Corporations *vis-à-vis* the overage fleet for the five years ending 2008-09 is shown in the table below.

Corporation	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
KSRTC	Vehicle productivity (KMs run <i>per day per bus</i>)	367	360	350	365	364
	Overage fleet (percentage)	1.82	2.91	3.29	1.52	0.47
NEKRTC	Vehicle productivity (KMs run <i>per day per bus</i>)	316	317	333	336	343
	Overage fleet (percentage)	36.97	36.81	37.90	36.34	29.45
NWKRTC	Vehicle productivity (KMs run <i>per day per bus</i>)	330	320	327	344	343
	Overage fleet (percentage)	37.39	45.26	40.78	32.15	30.61
Overall	Vehicle productivity (KMs run <i>per day per bus</i>)	346	339	340	353	352
	Overage fleet (percentage)	20.13	23.66	22.42	18.20	16.16
AIA ⁶⁴	Vehicle Productivity	328	330	341	351	351

3.2.31 The vehicle productivity, of KSRTC was above the All India Average in all the years under review. However, it was lower than AIA during 2005-2009 in NWKRTC. Further, it remained lower than AIA during all the years under review in respect of NEKRTC. The Management of NEKRTC

Tamil Nadu (Villupuram), Tamil Nadu (Salem) and Tamil Nadu (Kumbakonam) registered best vehicle productivity at 474, 469 and 462.8 KMs per day respectively during 2006-07. (Source : STUs profile and performance 2006-07 by CIRT, Pune)

stated (September 2009) that jurisdictional districts of the Corporation are situated on the border of the State and extending operations beyond notified routes are not possible as it needs to be approved in the interstate agreements. Moreover, some Divisions are located in such a manner that extension of operations beyond a particular distance can not be done due to the jurisdiction of other Corporations.

⁶⁴ AIA for the year 2008-09 is not available. Hence figures for 2007-08 are adopted.

Capacity Utilisation

Load Factor

3.2.32 Capacity utilisation of a transport undertaking is measured in terms of Load Factor, which represents the percentage of actual passenger earnings to expected passenger earnings at full load. The schedules to be operated are to be decided after proper study of routes and periodical reviews are necessary to improve the load factor. The table below gives the capacity utilisation in respect of all the Corporations.

Corporation	2004-05	2005-06	2006-07	2007-08	2008-09
	<i>per cent</i>				
KSRTC	70.7	68.6	70.2	72.2	70.9
NWKRTC	64.3	68.0	62.4	63.1	63.4
NEKRTC	68.8	60.8	58.0	61.0	59.6
Overall	70.5	67.1	68.3	65.8	63.9
AIA ⁶⁵	61	62	63	68	68

Load factor of NWKRTC and NEKRTC was below AIA during 2006-09 and 2005-09 respectively.

3.2.33 The load factor in KSRTC was above All India Average in all the years. In respect of NWKRTC and NEKRTC it was below AIA during 2006-09 and 2005-09, respectively. The Management stated (September 2009) that decrease in load factor was mainly due to operation of unauthorized / illegal operations by private operators and operation of obligatory services. Audit analysed that inadequate line checking also led to lower load factor.

3.2.34 A table depicting the Load factor in relation to number of buses *per* one lakh population is given below.

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Corporations' buses <i>per</i> one lakh population	20	22	23	25	25
Load factor	70.5	67.1	68.3	65.8	63.9

3.2.35 It may be seen from the above table that though there is increase in Corporations' buses *per* one lakh population, the Load Factor is showing a declining trend.

3.2.36 The table below provides the details for break even load factor (BELF) for traffic revenue. Audit worked out this BELF at the given vehicle productivity and total cost *per* KM.

⁶⁵ AIA for the year 2008-09 is not available. Hence figures for 2007-08 are adopted.

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
KSRTC						
1	Cost per KM (Rs.)	14.95	16.56	17.93	18.52	19.52
2	Traffic revenue per KM at current load factor (Rs.)	13.75	15.47	17.00	17.37	17.64
3	Traffic revenue at 100 per cent load factor (Rs.)	19.45	22.55	24.22	24.06	24.88
4	BELF considering only traffic revenue (1/3)	76.9	73.4	74.0	77.0	78.5
NEKRTC						
1	Cost per KM (Rs.)	14.61	15.67	16.48	17.13	17.88
2	Traffic revenue per KM at current load factor (Rs.)	12.29	13.63	14.32	15.24	15.54
3	Traffic revenue at 100 per cent load factor (Rs.)	17.86	22.42	24.69	24.98	26.07
4	BELF considering only traffic revenue (1/3)	81.8	69.9	66.7	68.6	68.6
NWKRTC						
1	Cost per KM (Rs.)	14.63	16.26	16.21	17.85	19.19
2	Traffic revenue per KM at current load factor (Rs.)	12.27	13.62	14.06	14.50	15.58
3	Traffic revenue at 100 per cent load factor (Rs.)	19.08	20.03	22.53	22.98	24.57
4	BELF considering only traffic revenue (1/3)	76.7	81.2	71.9	77.7	78.1

3.2.37 The break-even load factor of all three Corporations is quite high and is not likely to be achieved given the present load factor and the fact that the Corporations are also required to operate uneconomical routes. Thus, while the scope to improve upon the load factor remains limited, there is tremendous scope to cut down costs of operations as explained later.

Route Planning

3.2.38 Appropriate route planning to tap demand leads to higher load factor. All the Corporations in the State carry out an ABC analysis of various schedules operated by them. Schedules which are profitable are categorised as 'A', while those which earn adequate revenue for meeting variable cost but do not cover fixed cost fully are categorised as 'B'. The schedules which do not even cover the variable cost are categorised as 'C'.

3.2.39 Some schedules are profitable while others are not. The position in this regard is given in the table below.

The no of schedules not meeting variable cost was 50 per cent as at end of March 2009.

Particulars	Total No. of schedules	No. of schedules making profit	No. of schedules not meeting total cost	No. of schedules not meeting variable cost
2004-05	12,441 (100)	2,545 (20)	9,896 (80)	4,317 (35)
2005-06	13,392 (100)	2,815 (21)	10,577 (79)	4,709 (35)
2006-07	13,695 (100)	3,210 (23)	10,485 (77)	4,569 (33)
2007-08	14,637 (100)	2,435 (17)	12,202 (83)	6,463 (44)
2008-09	15,313 (100)	2,697 (18)	12,616 (82)	7,667 (50)

Figures in brackets indicate percentage to total schedules

The percentage of uneconomical schedules operated increased from 35 per cent to 50 per cent during the period of review. Audit analysed that increase in uneconomical schedules were mainly due to augmentation of schedules as a social obligation and increase in the cost of operations.

3.2.40 Though some of the schedules now appearing unprofitable would become profitable once the Corporations improve their efficiency, there would still be some uneconomical schedules. Given the scenario of mixed routes and obligation to serve uneconomical schedules, an organisation should decide an optimum quantum of services on different schedules so as to optimise its revenue while serving the cause. However, no such exercise was carried out by the Corporations. The Corporations carry out periodical review of all the 'B' and 'C' schedules and modify the schedules and effect changes in the time table.

Cancellation of Scheduled kilometres

3.2.41 The details of scheduled⁶⁶ kilometres, effective kilometres and cancelled kilometres are furnished in the Table below. Cancelled kilometres are the kilometres not operated though originally scheduled. However, effective kilometres include the scheduled kilometres operated as well as additional kilometres operated on account of fairs, casual contracts *etc.*, which are not originally scheduled.

(in lakh KMs)

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1	Scheduled kilometres	12,984.79	13,747.28	15,034	16,623.43	17,259.55
2	Effective kilometres	12,990.71	13,575.24	14,788.72	16,111.78	16,942.56
3	Kilometres cancelled	336.76	538.69	656.24	887.80	814.44
4	Percentage of cancellation	2.59	3.92	4.37	5.34	4.72
Cause wise cancellation						
5	Want of buses	43.34	81.54	119.29	227.86	172.28
6	Want of crew	124.13	188.61	172.80	243.54	201.79
7	Others	169.29	268.54	364.15	416.40	440.37
8	Contribution per KM (in Rs.)	4.80	5.09	5.62	5.80	5.76
9	Avoidable cancellation (want of buses and crew)	167.47	270.15	292.09	471.40	374.07
10	Loss of contribution (8x9) (Rs. in crore)	8.04	13.75	16.42	27.34	21.55

The percentage of cancellations varied from 2.59 to 5.34 per cent during 2004-05 to 2008-09.

3.2.42 The percentage of cancellations varied from 2.59 per cent to 5.34 per cent during 2004-05 to 2008-09 and remained on the higher side as compared to the best performers. The cancelled kilometres due to avoidable reasons such as non-availability of crew and buses was about 48.92 per cent of the total cancellations. Due to

Tamil Nadu (Salem), State Express Transport Corporation (Tamil Nadu) and Tamil Nadu (Villupuram) registered least cancellation of scheduled KMs at 0.45, 0.67 and 0.78 per cent respectively during 2006-07. (Source: STUs profile and performance 2006-07 by CIRT, Pune)

⁶⁶ the position for individual Corporation are given in Annexure 11.

the above cancellations, Corporations were deprived of contribution of Rs. 87.10 crore during 2004-09. The Management stated (May 2009) that action was taken to control the incidence of cancellation by initiating disciplinary action.

Maintenance of vehicles

Preventive Maintenance

3.2.43 Preventive maintenance was essential to keep the buses in good running condition and to reduce breakdowns / other mechanical failures. The Corporations had Tata and Leyland make buses, for which the following schedule of maintenance has been adopted by the Corporations.

Particulars	Schedule
Engine Oil change (EOC)	
Tata make	Every 18,000 KMs
Leyland make	Every 16,000 KMs
Docking⁶⁷	
For both Tata and Leyland make	Every 18,000 KMs

3.2.44 Test check in Audit of preventive maintenance schedules carried out in selected depots revealed that out of 36,140 buses docked during the five years under review, there was delay in respect of 14,270 buses after giving a reasonable margin of three days beyond the due date. In case of EOC there were delays in respect of 8,905 buses out of 37,754 buses due as indicated in the table below.

Year	Engine Oil change			Docking		
	Total no. of vehicles	No. of cases delayed	Percentage of delay	Total no. of vehicles	No. of cases delayed	Percentage of delay
2004-05	5,026	337	6.71	4,710	1,127	23.93
2005-06	7,565	1,306	17.26	7,004	2,351	33.57
2006-07	8,162	2,050	25.12	7,336	3,055	41.64
2007-08	8,224	2,077	25.26	7,486	3,163	42.25
2008-09	8,777	3,135	35.72	9,604	4,574	47.63

3.2.45 It may be seen from the above table that the percentage of maintenance done in time decreased from 76.07 per cent in 2004-05 to 52.37 per cent in 2008-09. The Management of KSRTC attributed (September 2009) the delay to shortage of mechanical staff and stated that action was taken to recruit the personnel.

Test check in Audit revealed that there were delays in carrying out preventive maintenance schedules.

⁶⁷ in each Docking of vehicles for maintenance break system, steering system, gearbox, suspension, clutch, axle system, frames and cross membranes of the bus body, etc., are inspected.

Repairs & Maintenance

3.2.46 A summarised position of fleet holding, over-aged buses, repairs and maintenance (R&M) expenditure⁶⁸ for the last five years up to 2008-09 is given below.

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1	Total buses (own + taken over)	9,785	10,989	12,462	13,895	14,544
2	Over-age buses (as per Corporations' norms) (own)	1,970	2,600	2,794	2,529	2,335
3	Percentage of over age buses (own)	20.13	23.66	22.42	18.20	16.16
4	R&M Expenses (Rs. in crore)	200.76	232.45	265.54	323.15	375.84
5	R&M Expenses <i>per bus</i> (Rs. in lakh) (4/1)	2.05	2.12	2.13	2.33	2.58
6	Percentage of manpower cost in R&M expenses	41.37	36.89	32.01	28.19	25.90

The Repairs and Maintenance expenditure *per bus* increased from Rs. 2.05 lakh in 2004-05 to Rs. 2.58 lakh in 2008-09.

3.2.47 Percentage of overage buses to total fleet held reduced from 20.13 in 2004-05 to 16.16 in 2008-09 but repair and maintenance expenses *per bus* increased from Rs. 2.05 lakh in 2004-05 to Rs. 2.58 lakh in 2008-09. The Corporations did not maintain details of expenditure incurred on repairs and maintenance of over-aged buses separately and hence Audit could not ascertain the extent to which the increase in repairs and maintenance expenditure was attributable to old age buses.

Docking of vehicles for Fitness Certificates

3.2.48 The buses were required to be repaired and made fit before sending the same to Regional Transport Office (RTO) for renewal of fitness certificate under Section 62 of the Central Motor Vehicle Rules 1989. As the date of expiry of the old fitness certificate was known in advance, Management should plan accordingly to get the buses repaired in time so that bus days were not lost due to delay in renewal. The time fixed for carrying out repair works to make the buses fit for getting Fitness Certificate was two days for ordinary buses and six days for other buses. It was noticed in Audit that in KSRTC delay in repairs of vehicles ranged from 2 days to 71 days in respect of 39 buses in the test checked months⁶⁹ for renewal of Fitness Certificate. This resulted in loss of 433 bus days and a potential loss of Rs. 27.18 lakh.

Manpower Cost

3.2.49 The cost structure of the organisation shows that manpower and fuel constitute 69 *per cent* of total cost. Interest, depreciation and taxes – the costs which are not controllable in the short-term – account for 16 *per cent*. Thus, the major cost saving can come only from manpower and fuel.

⁶⁸ the position for individual Corporation is given in Annexure 12.

⁶⁹ July 2004 and February 2005 (2004-05), August 2005 and March 2006 (2005-06), April 2006 and September 2006 (2006-07), May 2007 and October 2007 (2007-08), June 2008 and January 2009 (2008-09).

3.2.50 Manpower is an important element of cost which constituted 29 per cent of total expenditure of the Corporations in 2008-09. Therefore, it is imperative that this cost is kept under control and the manpower is utilised

Gujarat, Tamil Nadu (Villupuram) and Tamil Nadu (Salem) registered best performance at Rs. 6.10, Rs. 6.13 and Rs. 6.21 cost per effective KMs respectively during 2006-07.
(Source: STUs profile and performance 2006-07 by CIRT, Pune)

optimally to achieve high productivity. The Corporations also employ driver-cum-conductors who besides driving the bus also perform the duty of conductors. As such the operation of the bus needs only one crew. Out of 36,371 drivers, there are 16,411

driver-cum-conductors employed by the three Corporations collectively at the end of March 2009. The Table below provides the details of manpower⁷⁰, its cost and productivity for operating own buses including buses taken over from private owners for operation but excluding hired buses. Manpower and manpower cost indicated in the table excludes conductors deployed for hired buses and their cost.

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Total Manpower (Nos.)	54,685	54,547	60,546	63,229	71,062
Manpower Cost (Rs. in crore)	631.76	654.18	729.81	845.02	925.21
Effective KMs (in lakh)	10,958.41	11,887.75	13,665.01	15,362.90	16,582.74
Cost per effective KM (Rs.)	5.77	5.50	5.34	5.50	5.58
Productivity per day per person (KMs)	54.90	59.71	61.83	66.57	63.93
Total Buses (No.)	9,785	10,989	12,462	13,895	14,544
Manpower per bus	5.59	4.96	4.86	4.55	4.89

3.2.51 The manpower cost per effective kilometre has decreased from Rs. 5.77 in 2004-05 to Rs. 5.58 in 2008-09 despite revision of pay and increase in the number of employees. The

North Western Karnataka Road Transport Corporation, Karnataka State Road Transport Corporation and Himachal Pradesh registered best performance at 4.89, 4.99 and 4.94 manpower per bus.
(Source : STUs profile and performance

productivity per day per employee which was 54.90 KMs in 2004-05, increased to 63.93 KMs in 2008-09. The manpower per bus also reduced from 5.59 in 2004-05 to 4.89 in 2008-09 due to increase in number of buses. The manpower cost and

productivity was better than the All India Average in all the Corporations for the period under review.

3.2.52 The State Government has prescribed (November 2006) a norm of 5.65 employees per schedule without prescribing category-wise break-up. As on 31 March 2009, 13,400 schedules were under operation in all the Corporations collectively. Considering the manpower as on that date, the actual position in this regard works out to 5.31 employees per schedule, which was within the prescribed limit.

⁷⁰ the position for individual Corporation are given in Annexure 13.

Fuel Cost

3.2.53 Fuel is a major cost element which constituted 40.42 per cent of total expenditure for the Corporations during 2008-09. Control of fuel costs by a road transport undertaking has a direct bearing on its productivity. The table below gives the targets fixed by the Corporations for fuel consumption, actual consumption, mileage obtained *per* litre (Kilometre *per* litre *i.e.*, KMPL), All India Average and extra expenditure incurred thereon.

Sl. No.	Particulars		2004-05	2005-06	2006-07	2007-08	2008-09
1	Gross Kilometres ⁷¹ (in lakh)	KSRTC	5,608.63	6,284.33	7,061.57	7,807.89	8,330.65
		NEKRTC	1,759.30	1,912.40	2,337.76	2,642.55	3,201.21
		NWKRTC	3,869.70	4,031.55	4,652.83	5,352.06	5,576.66
		Total	11,237.63	12,228.28	14,052.16	15,802.50	17,108.52
2	Target of KMPL fixed by STUs	KSRTC	5.40	5.36	5.22	5.20	5.19
		NEKRTC	5.60	5.54	5.55	5.50	5.43
		NWKRTC	5.52	5.56	5.45	5.37	5.30
3	Kilometre obtained <i>per</i> litre (KMPL)	KSRTC	5.28	5.13	5.07	5.02	4.92
		NEKRTC	5.44	5.44	5.45	5.41	5.34
		NWKRTC	5.36	5.25	5.23	5.10	5.07
4	All India Average in the category		4.93	5.00	5.11	5.11 ^r	5.11 ^r
5	Actual Consumption (in lakh litres)	KSRTC	1,062.24	1,225.02	1,392.81	1,555.36	1,693.22
		NEKRTC	323.54	351.62	428.83	488.48	600.25
		NWKRTC	721.96	767.91	889.64	1,049.42	1,099.93
		Total	2,107.74	2,344.55	2,711.28	3,093.26	3,393.40
6	Consumption as per target (in lakh litres)	KSRTC	1,038.64	1,172.45	1,352.79	1,501.52	1,605.13
		NEKRTC	314.16	345.20	421.22	480.46	589.54
		NWKRTC	701.03	725.10	853.73	996.66	1,052.20
		Total	2,053.83	2,242.75	2,627.74	2,978.64	3,246.87
7	Excess Consumption (in lakh litres) (5-6)	KSRTC	23.60	52.57	40.02	53.84	88.09
		NEKRTC	9.38	6.42	7.61	8.02	10.71
		NWKRTC	20.93	42.81	35.91	52.76	47.73
		Total	53.91	101.80	83.54	114.62	146.53
8	Average cost per litre (Rs.)	KSRTC	26.87	32.23	35.27	34.03	37.25
		NEKRTC	27.41	32.88	35.76	34.53	38.09
		NWKRTC	28.71	32.66	33.44	35.18	38.19
9	Extra expenditure (Rs. in crore)	KSRTC	6.34	16.94	14.12	18.32	32.81
		NEKRTC	2.57	2.11	2.50	2.77	4.08
		NWKRTC	6.01	13.98	12.01	18.56	18.23
		Total	14.92	33.03	28.63	39.65	55.12

3.2.54 In KSRTC, the mileage obtained *per* litre continuously declined over the period of review from 5.28 to 4.92 during 2004-09. Further, it was below all India average during 2006-09. In NEKRTC, the Corporation could not achieve its own targets in any of the years under review. In NWKRTC, the KMPL continuously declined from 5.36 in 2004-05 to 5.07 in 2008-09. The

⁷¹ excluding hired buses.

^r in the absence of availability of All India Average for 2007-08 and 2008-09, All India Average of 2006-07 has been considered.

depots of all the Corporations are maintaining KMPL register showing the details of driver-wise information regarding kilometres operated, consumption of HSD during each month for monitoring the performance of each driver in terms of KMPL. Even though there was reduction in over aged buses, the excess consumption of fuel compared to targets resulted in extra expenditure of Rs. 171.35 crore during 2004-09. Corrective measures like adjustment of fuel injection pumps, tuning of engines, *etc.*, were carried out. The drivers were given training on improving mileage. In spite of this, the mileage obtained deteriorated.

Cost effectiveness of hired buses

3.2.55 The Corporations were hiring private buses on Kilometre payment basis (KM Scheme). Agreements with the private bus owners were entered into for a period of four years under KM scheme. The owners of these buses were required to provide buses with drivers and to incur all expenditure for the running of the buses. The Corporations were to provide conductors and make payment as per the actual Kilometres operated by the hired buses. There were 1,450 hired buses as at the end of 2005 which declined to 140 buses as at the end of 2009. The operation of these buses resulted in a profit of Rs. 65.87 crore during 2004-09 as detailed below:

(Amount in Rs.)

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
	Own fleet⁷²					
1	Cost <i>per</i> effective KM	15.35	16.75	17.33	18.22	19.18
2	Traffic Revenue <i>per</i> effective KM	12.87	14.54	15.56	16.07	16.58
3	Net Revenue <i>per</i> effective KM	(-) 2.48	(-) 2.21	(-) 1.77	(-) 2.15	(-) 2.60
	Hired buses					
4	No. of Hired buses at the end of the year	1,450	1,225	741	510	140
5	Cost <i>per</i> effective KM ⁷³	11.64	13.05	13.94	14.11	14.01
6	Traffic Revenue <i>per</i> effective KM	13.27	14.16	14.62	14.52	15.24
7	Net Revenue <i>per</i> effective KM	1.63	1.11	0.68	0.41	1.23
8	Total effective KMs operated (in lakh)	2,032.30	1,687.48	1,123.71	748.88	268.56
9	Profit from hired buses (Rs. in crore)	33.13	18.73	7.64	3.07	3.30
10	Earnings <i>per</i> KM at 100 per cent load factor ⁷⁴	18.83	21.10	21.41	22.06	23.86
11	Break-even load factor considering traffic revenue	61.8	61.9	65.1	64.0	58.7

⁷² figures in Sl. No. 1 to 3 will not tally with figures given in the table under paragraph 3.2.11 as the same are for the Corporations as a whole and includes hired uses.

⁷³ this includes contract price *plus* conductors pay *plus* overheads.

⁷⁴ calculated based on the existing load factor of the Corporation.

3.2.56 Net revenue *per* effective KM from hired vehicles is more than that of own fleet. In view of the higher profitability from the hiring of vehicles, the number of hired buses should have increased over the years. However, the number of hired buses decreased from 1,450 in 2004-05 to 140 in 2008-09. It was stated by the Management of KSRTC (September 2009) that the private operators were cancelling the schedules abruptly for want of buses, crew, *etc.* The Management further stated that there was deterioration in the quality of services provided by the private operators and hence the Corporation was not in favour of hiring buses. Audit noticed that the Corporations were invoking the penalty clause as *per* the terms of contract entered into with the private operators and collecting the penal charges. However, this did not act as a deterrent for the operators to cancel the schedules as the amount of penalty *per* day was very low.

Body Building

3.2.57 The bus body building activity is undertaken at the Regional Workshops of KSRTC situated at Hassan and Bangalore besides getting the same fabricated through private contractors while NWKRTC has a body fabrication unit at Regional Workshop, Hubli. In NEKRTC, the bus body building is completely outsourced through private contractors. In KSRTC the in-house fabrication of different models of ordinary buses is done in two ways *i.e.*, completely by the Corporation and by outsourcing labour contract only with materials being supplied by the Corporation. NWKRTC does not outsource the fabrication of ordinary buses. During the period under review, 1,988 buses of different models were built completely by KSRTC at a total expenditure of Rs. 105.95 crore whereas 1,125 buses were built with outsourced labour at a total cost of Rs. 60.26 crore. 939 buses were got built from private contractors during 2004-09, for which KSRTC paid Rs. 48.25 crore. NWKRTC built 2,167 buses of different models in-house at a total expenditure of Rs. 111.13 crore during the period under review. However, none of the Corporations maintain adequate costing system to record model-wise details of expenditure incurred on in-house or outsourced fabrication costs. In the absence of model-wise details of cost of fabrication of different types of ordinary buses, Audit could not ascertain the cost effectiveness of fabrication of buses in-house *vis-à-vis* private contractors.

Financial Management

3.2.58 Raising of funds for capital expenditure, *i.e.*, for replacement/ addition of buses happens to be the major challenge in financial management of Corporation's affairs. This issue has been covered in paragraph 3.2.25. The section below deals with the Corporation's efficiency in raising claims and their recovery. This section also analyses whether an opportunity exists to realign the business model to generate more resources without compromising on service delivery.

Claims and Dues

3.2.59 The Corporations give their buses on hire for which parties are required to pay in advance the charges at prescribed rates *per kilometre* basis at the time of booking. Hire charges are revised periodically taking into account the increase in the cost of operations. The Corporations collect additional amount of 10 *per cent* of the estimated amount as security. All the vehicles, which are sent on casual contract, are fitted with speedometers and billing is made on the basis of actual kilometres recorded. Charges from the private parties are recovered immediately and charges from the Government are being recovered in due course. The balance amount in respect of NEKRTC receivable from the Government departments was Rs. 1.25 crore, which was less than one year old. However, there were no dues in respect of KSRTC and NWKRTC.

3.2.60 The Corporations provide free / concessional passes to various categories of public like students, senior citizens, freedom fighters *etc.* The State Government agreed (August 2004) to reimburse 50 *per cent* of the estimated travel cost for each student pass based on the formula devised by TNS Mode Company (an agency appointed to recommend the basis of calculating the operational cost incurred on the student passes). The number of student passes issued, amount recoverable from the Government as *per* the approved formula and the amount actually received are shown in the table below. During the years 2004-05, 2005-06 and 2008-09, KSRTC received Rs. 29.45 crore, Rs. 12.07 crore and Rs. 4.84 crore in excess of the amount receivable from the Government whereas there were unrealised claims in respect of NEKRTC and NWKRTC. However, the Government did not reimburse the claims of NEKRTC and NWKRTC completely though the Corporations had raised the claims as per the approved formula of TNS Mode Company.

Sl. No.	Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
1	No. of student passes issued (lakh)	7.89	6.17	7.81	7.59	7.37
2	Amount recoverable from the Government (Rs. in crore)	68.88	89.56	132.45	141.17	140.24
3	Amount actually received (Rs. in crore)	94.75	83.21	121.75	130.50	119.48
4	Unrealised claims (Rs. in crore) ⁷⁵	3.58	18.42	10.70	10.67	26.11

3.2.61 The amount due from the Government in respect of KSRTC, NWKRTC and NEKRTC were Rs. 0.26 crore, Rs. 46.43 crore and Rs. 22.79 crore respectively as of March 2009.

⁷⁵ this represents the amounts due by the Government to the individual Corporations in each year without setting off the amount paid in excess to KSRTC during 2004-05, 2005-06 and 2008-09, which is included in amount received.

Realignment of business model

3.2.62 The Corporations were mandated to provide an efficient, adequate and economical road transport to public. Therefore, the Corporations can not take an absolutely commercial view in running their operations. They have to cater to uneconomical routes to fulfil their mandate and keep the fares affordable. In such a situation, it was imperative for the Corporations to tap non-traffic revenue sources to cross-subsidize their operations. The share of non-traffic revenues (other than interest on investments) was nominal at 1.24 *per cent*; 0.72 *per cent* and 1.28 *per cent* in respect of KSRTC, NWKRTC and NEKRTC respectively, of total revenue during 2004-09. This revenue of Rs. 78.92 crore, Rs. 28.99 crore and Rs. 17.09 crore, respectively, mainly came from commercial establishments, advertisement, *etc.*

3.2.63 Over a period of time, the Corporations had acquired sites at prime locations in cities, district and tehsil headquarters. KSRTC and NEKRTC were holding 41.19 and 32.67 lakh square metres of land as on 31 March 2009. The details of land in terms of number of sites in cities, districts and tehsils were not made available to Audit. The total land holding by NWKRTC was not made available to Audit. However, the land occupied by it as on 31 March 2009 is as follows.

Particulars	Cities (Municipal areas)	District headquarters	Tehsil headquarters	Total
Number of sites	38	31	207	276
Occupied Land (lakh Sq. mtrs.)	8.46	4.98	13.33	26.77

3.2.64 KSRTC, NEKRTC and NWKRTC generated Rs. 75.06 crore, Rs. 26.49 crore and Rs. 17.09 crore, respectively from commercial establishments on these lands.

3.2.65 The Corporations generally use the ground floor / land for its operations, leaving an ample scope to construct and utilise spaces above. It is, thus, possible for the Corporations to undertake projects on public private partnership (PPP) basis for construction of shopping complexes, malls, hotels, office spaces, *etc.*, above (from first or second floor onwards) the existing sites so as to bring in a steady stream of revenues without any investment by it. Such projects can be executed without curtailing the existing area of operations of the Corporations, which can yield substantial revenue for the Corporations which can only increase year after year.

3.2.66 Audit observed that the Corporations have not studied this aspect to assess the likely benefits from such activities or framed any policy regarding tapping of non-traffic revenue sources by taking up large scale PPP projects in the vacant land. Since substantial non-traffic revenue will help the Corporations cross-subsidize their operations and fulfil the mandate effectively, the Corporations may like to study realigning their business model and frame a policy in this regard.

Corporations did not frame any policy for tapping non-traffic revenue sources through PPP projects.

Fare policy and fulfillment of social obligations

Existence and fairness of fare policy

3.2.67 Section 67 of Motor Vehicles Act, 1988 empowered the State Government to fix the minimum and maximum rates for stage contract and goods carriages. The Government of Karnataka approved (September 2000) an Automatic Fare Adjustment Procedure to enable the Corporations to revise the passenger bus fares from time to time to offset increases and decreases in the price of diesel and revision of dearness allowances to employees. The revised fares are implemented after approval by the Government. Based on this order, during the period 2004-05 to 2008-09 the fare was increased four times and decreased once.

3.2.68 The table below indicates approximate fare that existed during the period under review in respect of ordinary buses.

Stages	2004-05	2005-06	2006-07	2007-08	2008-09
First 5 KMs	4.00	5.00	6.00	6.00	7.00
First 10 KMs	6.00	7.00	8.00	8.00	9.00
25 KMs	8.00	10.00	10.00	10.00	11.00
100 KMs	--	21.00	22.00	22.00	23.00

3.2.69 The fare policy of the Corporations had no scientific basis as it does not take into account the normative cost. However, the performance of KSRTC and NWKRTC with respect to manpower productivity and performance of NEKRTC with respect to fuel consumption *per* KM were considered the best during 2006-07 by the Association of State Road Transport Undertakings (ASRTU) under the above categories.

Adequacy of services on uneconomical routes

In the absence of norms, the adequacy of services on uneconomical routes could not be ascertained in audit.

3.2.70 The Corporations had about 18 *per cent* profit making routes / schedules as of March 2009 as shown in table under paragraph 3.2.39. Though the Corporations were required to cater to uneconomical routes, they had not formulated norms for providing such services. In the absence of norms, the adequacy of services on uneconomical routes could not be ascertained in Audit. An independent regulatory body to specify the quantum of services on uneconomical routes, taking into account the specific needs of commuters would be desirable.

Monitoring by top management

MIS data and monitoring of service parameters

3.2.71 For an organisation like a Road Transport Corporation to succeed in operating economically, efficiently and effectively, there has to be written norms of operations, service standards and targets. Further, there has to be a

Management Information System (MIS) to report on achievement of targets and norms. The achievements need to be reviewed to address deficiencies and also to set targets for subsequent years. The targets should generally be such that the achievement of which would make an organisation self-reliant. In the light of this, Audit reviewed the system obtaining in the Corporation. The status in this regard is given below.

3.2.72 Internal targets for various parameters are fixed by the Heads of the Department in consultation with functional Directors / Managing Director of each Corporation. Each Corporation has an MIS Cell headed by Chief Planning and Statistical Officer, which compiles monthly data on all the physical and financial parameters of each depot and prepares a monthly Performance Appraisal Report (PAR). The PAR is issued to all Head of Departments and functional Directors / Managing Director. The performance of each Depot / Division and Central Office is monitored by each Head of Departments through periodical internal meetings held at the depot and at Central Office. Directions are issued for remedial actions. The overall performance of the Corporations is being reviewed by the respective Boards on quarterly basis.

Acknowledgement

Audit acknowledges the co-operation and assistance extended by the staff and the Management of the Corporations at various stages of conducting the performance review.

Conclusion

Operational performance

- **The Corporations could keep pace with the growing demand for public transport in terms of number of vehicles *per* lakh population, which increased from 20 in 2004-05 to 25 in 2008-09.**
- **While KSRTC was able to recover the cost of operations in all the years under review, NEKRTC could not recover the same in any of the years. NWKRTC was able to recover the cost of operations only during 2006-07.**
- **During 2004-05 and 2008-09, fleet utilisation in respect of KSRTC declined from 95.05 *per cent* to 88.87 *per cent*, in NEKRTC it declined from 96 *per cent* to 93 *per cent*. In NWKRTC it declined from 95.64 *per cent* to 92.46 *per cent*. This was due to increase in spare fleet held at depots and delay in repair of vehicles besides shortage of crew.**
- **Load factor in KSRTC was above all India average whereas it was below all India average in NEKRTC and NWKRTC due to**

unauthorised operation by private operators and operation of obligatory schedules by the Corporations.

- Though the Corporations carried out periodical review of schedules not making profit and modified them, the percentage of schedules not meeting variable costs increased from 35 to 50 during 2004-09 due to augmentation of obligatory schedules.
- None of the Corporations carried out timely preventive maintenance schedule. Test check in Audit revealed that of 9,604 buses docked, there was delay in respect of 4,574 buses. This affected the road worthiness of the buses. The repair and maintenance expenditure *per bus* increased from Rs. 2.05 lakh in 2004-05 to Rs. 2.58 lakh in 2008-09.
- The manpower cost *per effective KM* decreased from Rs. 5.77 to Rs. 5.58 during 2004-09. Also, manpower *per bus* declined from 5.59 to 4.89 due to increase in number of buses.
- The Corporations could not ensure economy in fuel consumption, which had decreased from 5.44 KMPL in 2004-05 to 4.92 KMPL in 2008-09.

Financial Management

- The liquidity position of NWKRTC was so poor that even employees related payments were being made belatedly. NEKRTC was utilising the Government dues for meeting the current liabilities.
- The share of non-traffic revenue was nominal at 1.24 *per cent*, 0.72 *per cent* and 1.28 *per cent* of total revenue during 2004-09 in respect of KSRTC, NWKRTC and NEKRTC, respectively.
- The Corporations had not studied the aspect of tapping non-traffic revenue by taking up large scale PPP projects on their vacant land.
- The Government is not reimbursing fully the claim towards subsidy in respect of concessional student passes though the Corporations are raising the claims as per an accepted formula.

Fare policy and fulfilment of social obligations

- The automatic Fare Adjustment Procedure prescribed by the State Government does not take into account increase in costs other than fuel and Dearness Allowance.
- In the absence of norms, the adequacy of services on uneconomical routes could not be ascertained in Audit.

Monitoring by top management and future needs

- The MIS system of the Corporation is effective to exercise sufficient control over its operation and monitor key operational parameters.

The three Corporations increased the reach of public transport but also together incurred a loss of Rs. 172.25 crore during 2004-09. The weak areas are cost of fuel and repairs and maintenance expenses. Achieving the internal targets for fuel consumption could have saved them Rs. 171.35 crore. The repairs and maintenance expenditure of Rs. 1,397.74 crore during 2004-09 (Rs. 2.58 lakh *per bus* in 2008-09) is very high and needs to be controlled. The Corporations can enhance the revenue by avoiding controllable cancellations and undertaking projects under PPP. Full reimbursement of subsidy in respect of concessional passes will also help. Thus, on the whole, there is scope to cut down costs and increase revenue.

Recommendations

Operational performance

- The Corporations should carry out timely preventive maintenance in respect of docking and EOC thereby enhancing the road worthiness of vehicles.
- The Corporations can enhance fleet utilization by taking action to reduce off-road vehicles by undertaking timely repairs and avoid cancellation for want of crew.
- The Corporations may examine the reasons for excess consumption of fuel and take remedial measures to control it.
- The Corporations need to analyse the reasons for high cost of repairs and maintenance to take corrective actions.

Financial Management

- The Corporations may have a re-look in favour of hiring more buses by attracting private participation as the same is economical in operations.
- The Government may consider reimbursing in full the subsidy in respect of concessional student passes based on the accepted formula.
- The Corporations may consider devising a policy for tapping non-conventional sources of revenue by undertaking PPP (Public Private Partnership) projects.

Fare Policy and fulfillment of social obligations

- **The Government may consider creating a regulator to regulate fares and also services on uneconomical routes.**
- **A policy yardstick to decide on the operation of uneconomical routes / schedules needs to be laid down.**