CHAPTER V

OPERATIONAL PERFORMANCE OF NORTH BENGAL STATE TRANSPORT CORPORATION

Two kinds of appraisal can be attempted in case of road passenger transport undertaking :

a) operational performance

b) financial performance[1].

While financial performance is considered as an important indicator of efficiency, under competitive conditions, physical and operational parametres assume importance as criteria of efficiency[2]. Operational performance in the case of road passenger transport undertaking can be viewed in terms of physical performance which throws light on the

state of physical productivity. It evaluates the functioning of the Corporation. Moreover, a major part of capital is employed in a road transport undertaking in the shape of fleet, constituting the assessment of operational performance. Further one of the objectives of State Transport Corporation is economy in service. In this regard, the analysis of physical and operational performance is required in judging the Corporation's ability in attaining this objective. Moreover, if any attempt is made to interprete the financial performance it is also necessary to have an idea of the physical and operational performance of the Corporation because it has a notable influence in the financial performance of the Corporation[3].

Basically, a road passenger transport system produces "seat kilometres" for serving the higher number of passengers or community. Productivity will mean producing "seat kilometers", by keeping costs as low as possible and at the same time ensuring the desired level of passenger satisfaction. In order to achieve this, there are a number of action areas. It is in these areas that component of productivity exist and various factors relating to these areas have to be analysed. Productivity will engulf all areas as (a) Fleet utilisation (Average vehicular utilisation) (b) Vehicle -utilisation (c) Seat utilisation (d) Improving tyre performance (e) Conservation of fuel (f) Changes in the

number of routes, route kilometers, average route distance (g) Total passenger miles obtained (h) Passenger miles per bus per day (i) Avoidance of accidents (j) Minimisation of breakdowns etc.[4]. These indicators are taken up for study one by one.

5.1 Fleet Utilisation :

Fleet utilisation, also termed as vehicular utilisation, is the ratio of the number of vehicles on road to the fleet held by the organisation. A Corporation's ability to provide services is dependent on the number of vehicles, their average age, condition, seating capacity among other things. The vehicles owned by an organisation can not always be put on roads for routine maintenance/repairs besides the need to maintain traffic spares. According to the recommendations of the Study Group set up by the Association of the State Road Transport Undertakings, "the fleet utilisation should be as follows :-

(i)	Vehicles in operation	- 90 per cent.
(ii)	Road-worthy vehicles but not in operation	- 2 per cent.
(iii)	Off Road vehicles	- 8 per cent.
		100 per cent"[5].

Thus, at any point of time the number of fleet in scheduled services is likely to be less than the total number of fleet held by the Corporation.

Percentage of fleet utilisation is calculated as follows :

$$\frac{\text{No. of vehicles on road}}{\text{No. of vehicles held}} \times 100$$

The higher the percentage of vehicles on road to the number of vehicles held by the Corporation, the better is the performance. This is, also rightly regarded as the 'acid test of efficiency of the State Road Transport Undertakings"[6].

Thus, the higher the vehicular utilisation (fleet utilisation) the higher the percentage of vehicles available, requiring low/no cancellations in services and lower breakdowns. So it reflects the efficiency of the maintenance department of the Corporation[7].

Table 5.1 will show the fleet utilisation of NBSTC from 1967-68 to 1986-87.

The Table 5.1 speaks that the vehicular utilisation (Fleet utilisation) is improving gradually after 1985-86. The fleet utilisation in the year 1967-68 was 78.1% and 86.0% in the year 1986-87, recording a 0.8% improvement. Except the year 1972-73, the vehicular utilisation was

Table 5.1

Fleet utilisation of NBSTC

Year	Fleet utilisation
1967-68	78.1%
1968-69	80.5%
1969-70	83.0%
1970-71	83.0%
1971-72	82.0%
1972-73	92.0%
1973-74	61.0%
1974-75	60.0%
1975-76	66.6%
1976-77	62.3%
1977-78	68.4%
1978-79	76.2%
1979-80	72.0%
1980-81	68.0%
1981-82	64.0%
1982-83	57.0%
1983-84	59.0%
1984-85	55.0%
1985-86	85.0%
1986-87	86.0%

Source : Annual Administrative Reports, and Office Records of NBSTC.

below 90% and does not compare favourably with the 90 per cent fleet utilisation as the standard referred[8].

5.2 Comparative Fleet Utilisation :

The following table shows the comparative fleet utilisation of Six Corporations including NBSTC.

Table 5.2

Comparative Fleet Utilisation

Year	PRTC	APSRTC	Gujrat SRTC	Rajasthan SRTC	Kerala SRTC	NBSTC
1974-75	83.50	86.98	77.32	76.00	78.70	60.0
1975-76	91.00	87.51	76.40	76.00	83.80	66.6
1976-77	86.27	93.29	77.49	77.00	86.30	62.3
1977-78	93.00	93.30	79.34	79.00	84.00	68.4
1978-79	92.00	87.90	79.92	78.00	83.90	76.2
1979-80	95.00	87.50	80.00	77.00	81.50	72.0
1980-81	95.00	87.00	80.30	76.00	76.60	68.0
1981-82	93.00	88.00	80.30	73.00	89.20	64.0
1982-83	90.00	91.00	77.80	80.00	67.60	57.0
1983-84	87.00	91.00	78.80	84.20	73.70	59.0

contd ...

Table 5.2 contd ...

1984-85	89.59	90.80	79.50	86.68	76.01	55.0
1985-86	90.4	93.0	79.5	89.8	73.3	85.0
1986-87	N.A	95.4	81.3	90.8	72.3	86.0

Source : Compiled from Office Records of NBSTC and Report on performance of Nationalised State Transport Undertakings.

The above comparative table shows that although the fleet utilisation of NBSTC of the 1984-85 is improving yet it is not satisfactory one as compared to Pepsu Road Transport Corporation, Rajasthan State Road Transport Corporation and Andhra Pradesh State Road Transport Corporation. Therefore, it can be said that NBSTC has not been able to keep a higher number of buses on the road at any time or in scheduled service and therefore its efficiency on this account has been consistently lower than those of PRTC, Rajasthan SRTC and APSRTC.

5.3 Comparative Fleet Utilisation Between NBSTC and STU as a Whole :

Table 5.3 will show the comparative Fleet Utilisation between NBSTC and STU as a whole :

It appears from table 5.3 that the fleet utilisation of NBSTC is much lower than the STU as a whole in almost all the years except 1985-86 and 1986-87.

Table 5.3

Comparative fleet utilisation between NBSTC and STU as a whole

Year	NBSTC	STU as a whole
1976-77	62.3%	79%
1977-78	68.4%	80%
1978-79	76.2%	79%
1979-80	72.0%	78%
1980-81	68.0%	84%
1981-82	64.0%	84%
1982-83	57.0%	82%
1983-84	59.0%	84%
1984-85	55.0%	84%
1985-86	85.0%	85%
1986-87	86.0%	88%

Source : Office Records of NBSTC and Reports on the performance of Nationalised State Transport Undertakings.

5.4 Vehicle Utilisation :

It refers to the number of kilometers done per vehicle on the road per day. It indicates the extent of use (in kms) of the vehicles on road. It indirectly reveals the efficiency of the traffic department. Higher vehicle utilisation helps in allocating the fixed costs like the cost

of personnel, motor vehicle taxes, and on interest on capital over a large number of kilometers thereby reducing the unit cost of operation and leads to better margins[9].

There have been no agreed standards about the vehicle utilisation. P.Sudarsanam[10] has pointed out "It is one of the unsolved riddles of the nationalised transport in the country that on such an important factor like vehicle utilisation,there have been no agreed standards. In rural transport, the vehicle utilisation (or effective kilometers per bus per day) varies between 200 kilometers to 300 kilometers. It is true that peculiar operating conditions like city operations, ghat roads, hill roads/tracks, narrow canal roads etc., limit vehicle utilisation." But there must be a suitable standard. It requires a closer scrutiny. Standards of vehicle utilisation will be fixed separately for, passenger service and express services and inter district and inter-state routes. Subhas Vaidya[11] has shown that vehicle utilisation in express services on inter state routes is higher than in passenger services on inter districts routes with the increase in speed limits, and better road conditions specially in the plains. Any passenger road transport undertaking, must be able to achieve a vehicle utilisation of 400 kilometers a day on an average[12].

Vehicle utilisation is worked out as follows :

$$\frac{\text{Gross/Effective Kms done per day}}{\text{No. of vehicles on road per day.}}$$

The following table will present the picture of vehicle utilisation of NBSTC from 1967-68 to 1987-88.

Table 5.4

Vehicle-Utilisation (in terms of kms.) of NBSTC

Year	Vehicle utilisation (in terms of kms.)
1967-68	153.79
1968-69	180.61
1969-70	159.43
1970-71	176.40
1971-72	189
1972-73	190
1973-74	222
1974-75	231.40
1975-76	209.00
1976-77	214.00
1977-78	210.00
1978-79	220.00
1979-80	218.06
1980-81	220.00
1981-82	210.00
1982-83	215.90
1983-84	220.00
1984-85	200.00

contd ...

Table 5.4 contd ...

1985-86	163.00
1986-87	209.00
1987-88	209.00

Source : Annual Administrative Reports, Office Records of NBSTC and Report on the performance of Nationalised State Road Transport Undertakings, Pune.

It appears from the table that the vehicle utilisation improved gradually from 153 kilometers (in 1967-68) to 209 kilometers by the end of the period of study (1987-88). This shows a 55.21 per cent improvement during the study period and the performance during the study period does not compare favourably with 300 kilometers standard referred to earlier.

5.5. Comparative Vehicle Utilisation :

Table 5.5 will show the comparative vehicle utilisation of six Corporation including NBSTC.

It is followed from the table 5.5 that the vehicle utilisation of NBSTC is lower than that of all Corporations which are taken for comparison. The performance as regards vehicle utilisation of NBSTC is no where near the standard set by P.Sudarsanam and S.P.S.Routhy that the daily utilisation per bus shall be around 300 kilometers a day

Table 5.5

Comparative Vehicle Utilisation

Year	PRTC	APSRTC	Gujrat SRTC	Rajasthan SRTC	Kerala SRTC	NBSTC
1974-75	197.00	306.72	269.90	279.00	272.80	231.40
1975-76	191.00	302.02	166.90	266.00	284.00	209.00
1976-77	172.00	305.97	270.12	268.00	282.12	210.00
1977-78	184.00	306.49	280.11	264.00	270.80	210.00
1978-79	208.00	309.00	286.40	249.00	269.13	220.28
1979-80	228.00	333.00	292.06	269.73	292.13	218.06
1980-81	231.00	305.50	265.70	265.00	266.00	220.00
1981-82	228.00	294.40	303.90	277.00	269.70	210.00
1982-83	246.90	290.00	302.60	256.00	271.10	215.90
1983-84	246.00	286.00	301.40	255.00	274.10	220.00
1984-85	238.00	294.75	305.50	264.00	270.80	200.00
1985-86	233.00	304.00	305.10	266.00	273.00	163.00
1986-87	NA	302.00	300.10	268.00	296.50	209.00

Source : Compiled from Annual Administrative Report, Office Records of NBSTC and Report on performance of nationalised State Road Transport Undertakings, Pune.

for local services and 500 kilometers a day for express service"[13]. There is a need to improve the vehicle utilisation of NBSTC, because it falls far below the standard.

5.6 Comparative Vehicle Utilisation Between NBSTC and State Transport Undertakings as a Whole :

The following table will show the comparative vehicle utilisation between NBSTC and STUs as a whole.

Table 5.6

Vehicle utilisation between NBSTC and STUs as a whole

Year	Vehicle utilisation of NBSTC	Vehicle utilisation of STUs as a whole
1976-77	214.00	239.7
1977-78	210.00	243.6
1978-79	220.08	249.7
1979-80	218.06	254.8
1980-81	220.00	257.5
1981-82	210.00	261.3
1982-83	215.00	257.0
1983-84	220.00	262.6
1984-85	200.00	261.4
1985-86	163.00	267.1
1986-87	209.00	272.4

Source : Compiled from Office Records of NBSTC and Report on performance of Nationalised State Transport undertakings.

The above table shows that the vehicle utilisation of NBSTC is lower than the State Transport undertakings as a whole. It again justifies the need to improve the vehicle utilisation of NBSTC.

5.7 Comsumption of Diesel, Lubricants and Oils :

Operational performance of a road transport undertaking can be evaluated in terms of the effective use of major inputs viz.diesel, lubricants and other oils. A higher number of kilometres per litre will mean lower cost of production and therefore shall be termed as a higher level of efficiency.

The following table will depict the consumption of fuel in NBSTC i.e. kilometres obtained per litre of fuel :-

Table 5.7

Kilometres obtained per litre of fuel in NBSTC

Year	Kilometres obtained per litre of fuel
1967-68	3.78
1968-69	3.84
1969-70	3.75
1970-71	3.80
1971-72	NA
1972-73	NA
1973-74	NA
1974-75	4.00
1975-76	4.00
1976-77	3.90

contd ...

Table 5.7 contd ...

1977-78	3.70
1978-79	3.80
1979-80	3.70
1980-81	3.70
1981-82	3.60
1982-83	3.60
1983-84	3.50
1984-85	3.60
1985-86	3.70
1986-87	3.85
1987-88	4.00

Source : Compiled from Administrative Reports of NBSTC, Office Reports of NBSTC and Report on performance of Nationalised State Road Transport Undertakings, Pune.

The above table shows that the performance of NBSTC has been poor in respect of consumption of diesel, lubricants and oils per effective kilometers during the period of 1967-68 to 1987-88. The data table shows a slight improvement since 1984-85. It can be concluded that the performance of NBSTC is not satisfactory and it has a long way to go to achieve a satisfactory performance and comparable efficiency.

5.8 Comparative Statement of Kilometres Obtained per Litre of Fuel :

The following table will depict the comparative statement of kilometres obtained per litre of fuel of six Corporations including NBSTC.

Table 5.8

Comparative Statement of kilometres obtained per litre of fuel

Year	PRTC	APSRTC	Gujrat SRTC	Rajasthan SRTC	Kerala SRTC	NBSTC
1974-75	3.62	4.00	4.22	4.51	4.00	4.00
1975-76	3.55	4.02	4.35	4.40	3.95	3.90
1976-77	3.57	4.02	4.44	4.16	4.00	3.70
1977-78	3.57	4.30	4.47	4.05	3.90	3.80
1978-79	3.57	4.19	4.52	3.99	3.85	3.70
1979-80	3.60	4.15	4.55	4.02	3.85	3.70
1980-81	3.70	4.09	4.66	4.27	3.90	3.60
1981-82	3.85	4.17	4.74	4.50	3.70	3.60
1982-83	4.00	4.40	4.00	4.30	3.70	3.60
1983-84	3.91	4.49	4.83	4.39	3.70	3.50
1984-85	3.91	4.58	4.86	4.48	3.70	3.60
1985-86	3.93	4.75	4.85	4.59	3.66	3.70
1986-87	NA	4.85	4.90	4.61	3.68	3.85

Source : Compiled from Annual Administrative Report, Office Records of NBSTC and Report on the performance of Nationalised State Road Transport undertaking.

The above table shows the comparative operational performance of Corporations in terms of kms obtained per litre of fuel. Low consumption of fuel indicates an economy in fuel consumption and higher productivity and better performance. The comparative table does not show NBSTC in a favourable light. Most of the times it falls much below the "standard" set by other Corporations except Kerala State Road Transport Corporation. Therefore, it can be said that the performance of NBSTC is not satisfactory. However it has been showing signs of improvement after 1984-85; but it has a long way to go to achieve a satisfactory performance and comparable efficiency.

5.9 Kilometre Obtained Per Litre of Fuel Between NBSTC and STUs as a Whole :

Table 5.9 will depict the kms obtained per litre of fuel between NBSTC and STUs as a whole. Table 5.9 also shows that the performance of the NBSTC as regards kilometers obtained per litre of fuel as compared to the State Transport undertakings as a whole is not satisfactory and has to go a long way to achieve a satisfactory performance.

The cost of H.S.D. had gone above the "roof" in the seventies and prospects of any downward trend are not in sight. It is, therefore, advisable to do everything

Table 5.9

Kilometres obtained per litre of fuel between NBSTC and STUs as a whole

Year	Kms. obtained per litre of fuel in NBSTC	Kms. obtained per litre of fuel in STUs as a whole
1976-77	3.70	4.07
1977-78	3.80	4.10
1978-79	3.70	4.08
1979-80	3.70	4.10
1980-81	3.60	4.10
1981-82	3.60	4.10
1982-83	3.60	4.02
1983-84	3.50	4.07
1984-85	3.60	4.07
1985-86	3.70	4.13
1986-87	3.85	4.21

Source : Compiled from NBSTC Office Records, Report on performance of Nationalised State Road Transport Undertakings, Pune.

possible to ensure that vehicle does the maximum number of kilometres in one litre of H.S.D. The country, is facing energy crisis and state transport undertaking must take prompt measures for efficient utilisation of diesel oil. To save valuable foreign exchange to the country, the transport undertakings must play a vital role in reducing the consumption of H.S.D. at this critical juncture. The

need to achieve better fuel efficiency i.e. to achieve the maximum kilometres per litre cannot therefore, be over -emphasised[14].

The fuel economy can be achieved by the following measures :

(a) The combined study conducted by 1)C, Ashok Leyland and Pallavan Transport Corporation at Madras, in the year 1975, indicates that a vehicle running between 50-60 kph can save fuel to the extent of 20% compared with the consumption of the same vehicle running between 60-85 kph. Further, warming up the engine before running the vehicle, avoiding jack rabbit starts, going slow in low gears, avoiding fast acceleration and sudden deacceleration, anti-cipating stops, avoiding unnecessary stops, avoiding racing the engine before stopping, avoiding overspeeding, avoiding needles idling etc. fuel economy has been observed. Drivers are required to be educated continually on the importance of these.

b) Proper Maintenance of Vehicles :

Maintenance of vehicles is important to attain better fuel efficiency. A study reveals that 10% fuel can be saved by proper maintenance of the vehicle alone. Poorly maintained engines and other parts cause extra fuel consumption. Good maintenance procedure includes checking of tyre pressures, elimination of wheel and brake drags, cleaning

the filters, cleaning of mufflers, adjustment of tappet clearance, tuning of fuel pump and injection system, tuning of engine, adjustment of idling speed,etc.

c) Derating of Fuel Pumps :

Derating of the fuel pump adversely affects the characteristics of a vehicle.

d) Avoiding Wastage, Spillage and Leakage :

About 4 per cent fuel economy is observed by avoiding wastage, spillage and leakage of fuel.

e) Replacement of Old Vehicle :

The study carried on by CIRT based on a sample of 750 vehicles in Maharashtra SRTC indicates that the first reconditioning of a vehicle shall be done at about 3.5 lakh km. and the second one at 4.45 lakh km. for better economy of the fuel.

5.10 Total Passenger Carried :

One of the outputs of a road transport undertaking is the number of passengers carried per bus during the year.

The higher the number of passengers carried per bus, the higher will be the efficiency of the undertaking other things remaining the same. An increase in the total number of passengers carried becomes a doubtful criteria because it is possible that this increase in the number of buses may be more than the per cent increase in the number of total passengers. Therefore, number of passengers carried per bus per day is a better criteria for judging the efficiency of the undertaking.

The following table shows the passenger carried for a period of more than 20 years 1967-68 to 1987-88. Column 2 of the table depicts the total passenger carried, column 3 shows total passengers per bus and column 4 the number of passengers carried per bus per day.

Table 5.10

Total passenger carried, passenger carried per bus, passenger carried per bus per day

Year	Total passenger carried (in lakhs)	Passenger carried per bus	Passenger carried per bus per day
1968-69	170.04	94,900	260
1969-70	181.54	98,185	269
1970-71	200.84	1,05,485	389
1971-72	202.08	1,04,390	286

contd ...

Table 5.10 contd ...

1972-73	223.91	97,090	266
1973-74	255.50	1,32,495	363
1974-75	248.20	90,520	248
1975-76	260.03	94,900	260
1976-77	322.75	1,55,125	425
1977-78	358.58	1,36,875	375
1978-79	408.90	1,63,885	449
1979-80	474.17	1,63,520	448
1980-81	547.93	1,62,790	446
1981-82	591.22	1,69,725	465
1982-83	583.25	1,99,655	547
1983-84	615.49	2,23,015	611
1984-85	606.01	2,50,390	686
1985-86	666.78	2,97,475	815
1986-87	856.63	2,44,915	671
1987-88	941.31	2,34,695	643

Source : Office Records of NBSTC, Administrative Reports of NBSTC and Report on performance of Nationalised SRTU.

The table shows that the number of passengers carried per bus per day has increased by 147.30% over a period of 20 years, while the number of passengers travelling by NBSTC buses increased by 453.58% per cent over the same period. This clearly shows that the undertaking is carrying more passengers than before and it shows that due to

lack of train and other services, there has been a tendency of over-crowding in the buses.

5.11 Comparative Statement of Passenger Carried per Bus Per Day :

The following table will show the comparative statement of passenger carried per bus per day of six Corporations including NBSTC.

Table 5.11

Comparative statement of the passenger carried per bus per day by various Transport Corporations

Year	PRTC	APSRTC	Gujrat SRTC	Rajasthan SRTC	Kerala SRTC	NBSTC
1974-75	272.72	506.00	564.00	254.00	709.00	425.00
1975-76	279.67	512.00	569.00	245.00	825.00	375.00
1976-77	267.38	541.00	589.00	290.00	708.00	449.00
1977-78	278.57	558.00	615.00	277.00	731.00	448.00
1979-80	315.21	590.00	640.00	272.00	810.00	465.00
1980-81	352.75	621.00	643.00	279.00	836.00	547.00
1981-82	357.70	609.00	659.00	249.00	870.00	611.00
1982-83	393.00	611.00	628.00	259.00	869.00	594.00
1983-84	411.00	619.00	625.00	248.00	820.00	585.00
1984-85	423.00	631.00	585.00	248.00	797.00	815.00
1985-86	374.00	639.00	567.00	240.00	885.00	671.00
1986-87	NA	635.00	609.00	225.00	941.00	643.00

Source : Compiled from NBSTC Office Records and Report on the performance of Nationalised State Road Transport Undertaking.

The above table shows that the passenger carried per bus per day by the NBSTC is higher than many of the corporations. It has achieved these results than the other Corporations taken for comparison except Kerala State Road Transport Corporation.

5.12 Occupation Ratio :

Occupation ratio is the percentage of seat kms. occupied to seat kms. offered. It is also termed as "load factor". If the "load factor" is low, it means that there are a number of vacant/unoccupied seats and consequent loss of revenues. Again, if the load factor is high and beyond hundred it represents a situation of overcrowding which, of course, is financially profitable but as regards quality of service, reveals that there is considerable scope of augmentation of buses[16].

Percentage of occupation ratio is calculated as follows:

Percentage of occupation

$$\text{Ratio} = \frac{\text{Seat Kms. occupied}}{\text{Seat Kms. offered}} \times 100$$

If the ratio is in between 70% and 100%, it is generally considered as suggesting some scope for improvement

and if it is more than hundred it is not generally acceptable[17].

The following table will show the seat kms. offered, seat kms. occupied and percentage of occupation ratio of NBSTC from 1967-68 to 1987-88.

Table 5.12

Seat kms. offered, seat kms. occupied and percentage of occupation ratio in NBSTC

Year	Seat kms. offered (in lakhs)	Seat kms. occupied (in lakhs)	Percentage of occupation Ratio
1967-68	3,675.20	2,131.52	58.00%
1968-69	4,152.00	2,449.68	59.00%
1969-70	4,460.40	2,676.24	60.00%
1970-71	5,893.65	3,536.19	60.00%
1971-72	6,505.00	3,968.05	61.00%
1972-73	8,762.00	5,532.44	62.00%
1973-74	8,693.00	5,302.73	61.00%
1974-75	6,964.19	4,946.88	71.03%
1975-76	7,394.50	5,760.00	77.89%
1976-77	7,717.46	5,865.27	76.00%
1977-78	9,000.49	6,300.34	70.00%
1978-79	10,273.81	7,808.09	76.00%
1979-80	11,281.71	6,769.03	60.00%
1980-81	11,315.88	7,015.84	61.99%

contd ...

Table 5.12 contd ...

1981-82	11,380.14	6,714.28	58.99%
1982-83	11,587.71	6,952.63	60.00%
1983-84	10,490.70	6,294.42	60.00%
1984-85	9,242.73	5,638.06	60.99%
1985-86	9,434.49	5,943.73	63.00%
1986-87	14,096.91	8,881.05	62.99%
1987-88	16,071.63	10,446.56	65.00%

Source : Annual Administrative Reports and Office Records of NBSTC.

The table reveals that the occupation ratio of the NBSTC improved gradually from 58.00 per cent (in 1967-68) to 65.00% per cent (in 1987-88), recording 7 per cent improvement. Except the years 1974-75 to 1978-79, the occupation ratio was below 70 per cent and does not compare favourably with the 70 per cent occupation ratio standard referred to earlier.

5.13 Comparative Statement of Occupation Ratio :

The following table will show the comparative statement of occupation ratio of NBSTC with Kerala SRTC.

Table 5.13

Comparative Statement of Occupation Ratio

Year	Kerala SRTC	NBSTC
1980-81	92.10	61.99
1981-82	94.00	58.99
1982-83	94.20	60.00
1983-84	87.30	60.00
1984-85	92.70	60.99
1985-86	93.20	63.00
1986-87	96.20	62.99

Source : Compiled from Office Records of NBSTC and Report on Performance of Nationalised State Road Transport Undertakings, Pune.

The above table shows that comparison of NBSTC with Kerala SRTC in terms of occupation ratio is not favourable to NBSTC. So NBSTC needs to improve its performance substantially in order to come near the standards set up by Kerala SRTC. Apparently, the occupation ratio does not reflect the actual condition of the overcrowding of buses. It has been estimated earlier, number of passengers per bus and number of passengers per kms. have increased by leaps and bounds. Overcrowding and the vehicles ratio are not mutually consistent. Therefore an explanation is necessary. Apparently, the STCs conceals the figure in order to hide their in-efficiency. Therefore, the data given by the

NBSTC has to be taken an interpreted with caution. Another factor that might be important to understand is that various unauthorised passengers are taken by the conductors in lieu of certain financial consideration. And this corruption money is well distributed among the staff of the NBSTC. Further many officials move with their families and friends without buying any ticket and this is never reflected in the occupation ratio. In other words, overcrowding is the rule but overcrowding had led to financial losses. Apparently this paradox has been artificially solved by the NBSTC by showing a low occupation ratio. This occupation ratio as calculated does not really reflect the nature of the situation in the NBSTC. In this connection we may compare with KSRTC and the NBSTC and the data from KSRTC shows the occupation ratio is as high as 96% where as the NBSTC is as low as 60%. KSRTC perhaps gives the true picture but the NBSTC is not that honest.

5.14 No. of Routes, Route Kms. (Scheduled), Effective Kms.

The following table will show the number of routes, route kms (scheduled) and effective kms in NBSTC.

Table 5.14

No. of Routes, Route Kms., Effective Kms.

Year	No. of Route	Route Kms.	Effective Kms. (in lakhs)
1967-68	138	9,382	102.16
1968-69	152	9,969	115.41
1969-70	167	11,333	124.57
1970-71	169	11,730	144.87
1971-72	178	13,738	144.51
1972-73	205	18,552	196.52
1973-74	205	18,552	182.79
1974-75	206	18,680	165.38
1975-76	209	19,114	175.83
1976-77	210	19,230	181.98
1977-78	225	20,766	195.09
1978-79	231	21,355	220.28
1979-80	186	20,757	235.62
1980-81	189	21,059	234.36
1981-82	191	21,165	233.77
1982-83	191	21,165	234.85
1983-84	194	21,982	210.50
1984-85	194	21,982	186.40
1985-86	207	25,696	190.92
1986-87	236	37,200	286.71
1987-88	268	41,172	326.08

Source : Annual Administrative Report of NBSTC and Office Record of NBSTC.

The above table shows that the number of routes increased from 138 (1967-68) to 268 (1987-88) i.e. only 130 routes have been opened during the study period. The route kms. are also increased from 9382 kms (1967-68) to 41,172 (1987-88) recording 338.84% increase during the study period. The total effective kms. are also increased from 102.16 kms. (in lakhs) to 326.08 kms. (in lakhs) during the study period and recording an increase of 219.18%.

The extent of nationalisation of passenger transport shows considerable variations from State to State. While in Gujrat all the routes in rural areas and in Maharashtra more than 80% of the routes have been nationalised, in West Bengal the extent of nationalisation is less than 20%. Nationalisation of routes cannot be over-emphasised from the point of view of providing much needed services to the masses and also creating additional employment opportunities. On an average acquisition of a bus provides direct employment to at least eight persons in the State undertaking.

5.15 Routes and Schedules :

The following table will depict the number of routes, schedules and ratio of routes to schedules from 1967-68 to 1987-88.

Table 5.15

Statement showing the number of Routes, Number of Schedules and Ratio of Number of Routes to Number of Schedules in Different Years.

Year	Number of Routes	Number of Schedules	Ratio of Schedules to Routes
1967-68	138	155	1.12
1968-69	152	153	1.00
1969-70	167	182	1.06
1970-71	169	191	1.12
1971-72	178	NA	..
1972-73	205	NA	..
1973-74	205	NA	..
1974-75	206	160	0.8
1975-76	209	190	0.9
1976-77	210	197	0.9
1977-78	225	219	0.9
1978-79	231	253	1.08
1979-80	186	271	1.46
1980-81	189	274	1.45
1981-82	191	274.	1.43
1982-83	191	278	1.45
1983-84	194	254	1.31
1984-85	194	242	1.24
1985-86	207	303	1.46
1986-87	236	350	1.48
1987-88	268	393	1.43

Source : Compiled from the different Annual Reports of NBSTC and Office Records.

The above table reveals that there were 155 schedules on 138 routes in 1967-68. In 1968-69 the number of schedules decreased to 153 without corresponding decrease in the number of routes i.e. 152. In 1969-70, the number of schedules increased to 182 on 167 different routes. It further increased to 191 in 1970-71 and decreased thereafter. Thus, the number of schedules was 160 in 1974-75. The interesting point to be noted here is that the number of routes has shown an increasing trend from 1967-68 to 1978 -79 without corresponding rise in the number of schedules. But from 1976-77 the number of schedules are increasing continuously without corresponding rise in the number of routes. Between 1976-77 and 1987-88, the number of schedules increased by 116 per cent.

The movement in the number of schedules has not always been in accordance with that of the number of routes. From 1967-68 to 1978-79, the number of schedules has increased at aslower rate than the number of routes resulting in the fall in the ratio of schedules to routes. The ratio of schedules to routes was 1.12 in 1967-68 and it decreased to 1.00 in 1968-69, 1.06 in 1969-70, 1.12 in 1970-71, 0.8 in 1974-75, 0.9 in 1975-76, 1976-77 and in 1977-78, 1.08 in 1978-79. The ratio increased thereafter, decreased again in 1980-81, 1981-82, 1982-83, 1983-84 and in 1984-85 and further increased in 1985-86, 1986-87, and decreased in 1987-88. The ratio is in no way satisfactory. It must be

increased substantially in order to improve the efficacy of the transport services by the corporation. It will help a lot if the ratio is increased and routes are utilised to the extent, if possible. It will solve the problems faced by the corporation than the extension of bus services on new routes.

SUMMARY

Two kinds of appraisal can be attempted in case of road transport undertaking : (a) operational performance and (b) Financial performance. While financial performance is considered as an important indicator of efficiency, under competitive conditions, physical and operational performance as indicator of efficiency.

Operational performance can be interpreted in terms of fleet utilisation (Average vehicular utilisation) vehicle utilisation, seat utilisation, consumption of fuel per kms. Total passenger carried and passenger carried per bus per day, changes in the number of routes, route kms, effective kms. performed, etc.

Fleet utilisation also termed as venicular utilisation, is the ratio of the number of vehicles on road to the fleet held by the organisation. According to the recommendation of the study group set up by the Association of

State Road Transport undertakings, the fleet utilisation shall be 90 percent. It is calculated as follows :

$$\frac{\text{No. of vehicles on road}}{\text{No. of vehicles held}} \times 100$$

The higher the percentage of vehicles on road to the number of vehicles held by the Corporation, the better it is. This is also rightly regarded as the acid test of efficiency of the State Road Transport undertakings. The higher fleet utilisation reflects the efficiency of the maintenance department of the corporation.

The fleet utilisation table of NBSTC speaks that it is improving gradually after 1985-86 and records a 0.8% improvement during the study period. Except the year 1972 -73, the fleet utilisation was below 90 percent and does not compare favourably with 90 per cent fleet utilisation standard referred.

The comparative fleet utilisation tables of six corporations including NBSTC shows that although the fleet utilisation of NBSTC is improving after 1985-86 yet it is not satisfactory one, as compared to PRTC, Rajasthan SRTC and APSRTC. The comparative table of fleet utilisation between NBSTC and STUs as a whole speaks that the fleet utilisation of NBSTC is much lower than STUs as a whole in almost all the years except 1985-86 and 1986-87.

Vehicle utilisation refers to the number of kms. done per vehicle on the road per day. It indicates the extent of use (in kms.) of vehicles on road. It indirectly reveals the efficiency of the traffic department P.Sudarsanam and S.P.S.Pruthi set the standard of vehicle utilisation as follows :

a) 300 kms. a day for local services.

b) 500 kms. a day for express services.

It is worked out as follows :

$$\frac{\text{Gross/Effective kms. done per day}}{\text{No. of vehicles on road per day}}$$

The vehicle utilisation table of NBSTC shows a 55.21 per cent improvement during the study period and the performance during the study period does not compare favourably with 300 kms. Standard referred to earlier. The comparative vehicles utilisation table of six Corporation including NBSTC shows that the vehicle utilisation of NBSTC is lower than that of all the Corporations which ate taken for comparison. The vehicle utilisation table of NBSTC and STUs as a whole also present the same picture and justifies the need to improve the vehicle utilisation of NBSTC.

Operational performance of a road transport undertaking can be evaluated in terms of the effective use of major

inputs viz., diesel, lubricants and other oils. A higher number of kms. per litre will mean lower cost of production and therefore shall be termed as a higher level of efficiency.

The table prepared for kms. obtained per litre of fuel in NBSTC shows that the performance of NBSTC has been poor in respect of utilisation of diesel, lubricants and oils per kms. during the study period. The data table shows a slight improvement since 1984-85. It can be concluded that the performance of NBSTC is not satisfactory and it has a long way to go to achieve a satisfactory performance. The comparative table of kms. obtained per litre of fuel does not show NBSTC in a favourable light. Most of the times it falls much below the standard set by other Corporations except Kerala State Road Transport Corporation. The comparative table as regards kms. obtained per litre of fuel between NBSTC and STUs as a whole shows that the performance of NBSTC is not satisfactory and has a long way to go to achieve a satisfactory performance.

Oil economy can be achieved by the following :

a) Avoiding wastage, spillage and leakage;

b) Tapping up only to the required level;

c) By better dispensing;

d) Increasing the oils change period;

e) Decreasing the sump oil temperature at 85^{o}C;

One of the outputs of a road transport undertaking is the number of passengers carried per bus during the year. The higher the number of passengers carried per bus, the higher will be the efficiency of the undertaking. An increase in the total number of passengers carried becomes a doubtful criteria, because it is possible that this increase in the number of buses may be more than the per cent increase in the number of total passengers. Therefore, the number of passengers carried per bus per day is a better criteria for judging the efficiency of the undertaking. The table prepared in this regard shows that the number of passengers carried per bus per day has increased by 147.30 per cent over a period of 20 years, while the number of passengers travelling by NBSTC buses increased by 453.58 per cent over the period. This clearly shows that the undertaking is carrying more passengers than before and its efficiency is increasing since it is adding to its traffic load. The comparative table prepared in this regard shows that the passenger carried per bus per day of NBSTC is favourable as it is near the top. It has achieved better results than other Corporations taken for comparison except Kerala State Road Transport Corporation.

Occupation ratio is the percentage of seat kms. occupied to seat kms. offered. It is also termed as load factor. If the load factor is low, it means there are a number of vacant/unoccupied seats and consequent loss of revenues. Again, if the load factor is high and beyond hundred, it represents a situation of overcrowding which, of course, is financially profitable but as regards quality of service, reveals that there is a considerable scope of augmentation of buses. Percentage of occupation ratio is calculated as follows :

$$\text{Percentage of occupation ratio} = \frac{\text{Seat kms. occupied}}{\text{Seat kms. offered}} \times 100$$

If the ratio is in between 70% and 100%, it is generally considered as suggesting scope for improvement and if it is more than hundred it is not generally acceptable.

The occupation ratio table of NBSTC shows an improvement of 7 per cent during the study period. Except the years 1974-75 to 1978-79, the occupation ratio was below 70 per cent and does not compare favourably with the 70 per cent occupation ratio standared referred to earlier. The comparative table prepared in this regard shows that comparison of NBSTC with Kerala SRTC in terms of occupation ratio is not favourable to NBSTC. So NBSTC needs to improve its performance substantially in order to come near the standards set up by Kerala SRTC.

The number of routes of NBSTC increased from 138 (in 1967-68) to 268 (in 1987-88) i.e. only 130 routes have been opened during the study period. The route kms. are also increased from 9382 kms. (i.e. 1967-68) to 41,172 (in 1987-88), recording 338.84 per cent increase during the study period. The total effective kms. are also increased from 102.16 km. (in lakhs) to 326.08 kms. (in lakhs) during the study period recording an increase of 219.18%. In this context it is relevant to note that in Gujrat all the routes in rural areas and in Maharashtra more than 80 per cent of the routes have been nationalised, in West Bengal the extent of nationalisation is less than 20%.

As regards the ratio of number of routes to number of schedules, it is observed that the movement in the number of schedules has not always been in accordance with that of the number of routes. The number of routes has shown an increasing trend from 1967-68 to 1978-79, without corresponding rise in the number of schedules. But from 1976-77 the number of schedules are increasing continuously without corresponding rise in the number of routes. The ratio is in no way satisfactory. It must be increased substantially in order to improve the efficicacy of the transport services by the Corporation. It will help a lot if the ratio is increased and routes are utilised to the extent, if possible. It will better solve the problems faced by the Corporation than the extension of bus services on new routes.

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