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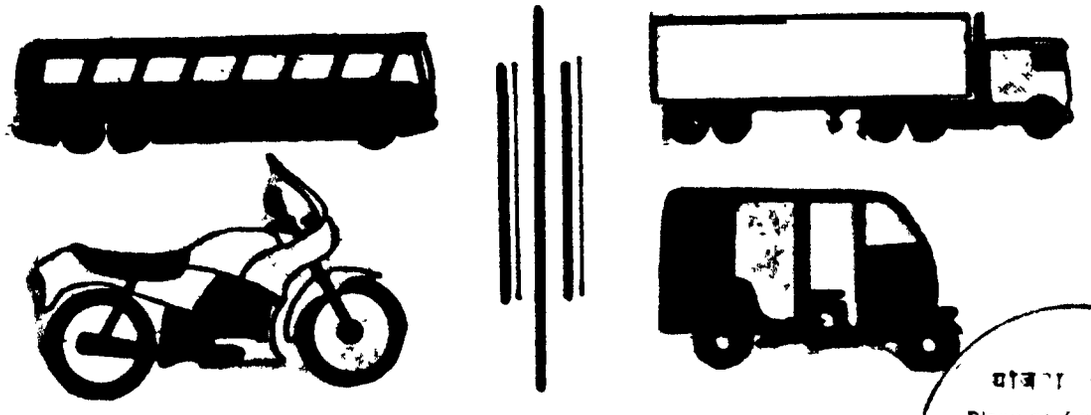
# REPORT
## OF
# THE WORKING GROUP
## ON
# ROAD TRANSPORT
## FOR THE
# NINTH FIVE YEAR PLAN
## (1997-2002)



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**REPORT OF**

**WORKING GROUP ON ROAD TRANSPORT**

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# CHAPTER-I

## INTRODUCTION

A Working Group on Road Transport for IXth Plan(1997-2002) was constituted by the Planning Commission in October 1995 under the Chairmanship of Secretary, Ministry of Surface Transport to formulate programmes for the IXth Plan. The composition and Terms of Reference of the Working Group are set out at Annexure-I.

2. In its first meeting, the Working Group constituted 5 Sub-Groups to examine the Terms of Reference allocated to them and report their findings to the main Working Group. The Terms of Reference and composition of each of the Sub-Groups are given at Annexure-II.

3. On receipt of the report of the Sub-Groups,the report for the IXth Plan has been prepared.

4. The Working Group places on record its appreciation of the work done by the various Sub-Groups. The Working Group also acknowledges the valuable assistance rendered by the Transport Research Wing of the Ministry in finalising this report.

## CHAPTER-II

## REVIEW OF VIII PLAN PERFORMANCE AND EMERGING ISSUES

1. Road Transport is the dominant mode of transport for both passengers as well as freight in India. It has been growing at a rapid pace since 1950s. In the 1990s, there has been an acceleration in the rate of growth leading to an explosive growth rate of about 15% overall in the road transport sector. This rapid pace of growth has generated a number of major issues confronting the sector. They relate to the quantity and quality of the road infrastructure itself, the quality of vehicles in terms of fuel efficiency, operational efficiency, axle strength etc., the tax structure of the transport industry, road safety, growing environmental issues etc.. In the context of the formulation of an infrastructure oriented plan in the wake of entry to the 21st century, therefore, as a predominant mode of transport and a crucial infrastructure, these issues deserve to be examined thoroughly and meaningful solutions found.

### Growth of Motor Vehicles

2. The growth in road transport can be seen from growth in all types of motor vehicles (Table 1). The growth in the index of the vehicle population is 9124 times compared to 1951.

Table I

Growth of vehicles in '000'

| Year | Two Wheelers | Four Wheelers | Buses | Goods Vehicles | Others | Total Vehicles | Index |
|---|---|---|---|---|---|---|---|
| 1951 | 27 | 159 | 34 | 82 | 4 | 306 | 100 |
| 1961 | 88 | 310 | 57 | 168 | 42 | 665 | 207 |
| 1971 | 576 | 682 | 94 | 343 | 170 | 1865 | 609 |
| 1981 | 2528 | 1117 | 154 | 527 | 847 | 5173 | 1690 |
| 1991 | 14047 | 3014 | 333 | 1411 | 2505 | 21310 | 6964 |
| 1994 | 18922 | 3686 | 390 | 1563 | 3356 | 27918 | 9124 |

3. The vehicle population is growing faster especially in the category of 2 wheelers and 4 wheelers. As on 31st March, 1994, the total vehicle population was about 279 lakh which is to increase substantially by the end of the century. About 70% of the total vehicle population are 2 wheelers, which has created a "Crowding out" effect in the road transport sector.

4. This has created new problems and issues on the roads and in the society for smooth mobility and has created hindrance in the free flow of traffic on the roads. The ideal transport policy should be such that one vehicle should carry more passengers as the road space becomes scarce. Roads and highways are not growing in proportion to the growth in automobile vehicles, thereby causing congestion, pollution, both air and noise, and creating health hazards to the society. The bus transport system is the cheapest and the most convenient mode of transport (over short and medium distance), which needs to be strengthened through appropriate Government policy . The 3 wheelers and 4 wheelers are also assuming importance as personalised modes of transport with an occupancy rate much below its capacity.

5. Apart from the congestion on the road, the rapid growth of road vehicle population is responsible for increase in prices of petrol, diesel and other petroleum products for which India is relying mainly on imports. In view of the huge and mounting import bill of POL, it is imperative to develop energy eficient modes of public transport such as Mass Rapid Transit System (MRTS).

6. The VIII five year plan period which witnessed an accelerated growth of vehicle population, the technological laggards in the sector, the mounting oil import bill, growing environmental awareness, therefore, can be called a phase of awakening on all these fronts. This calls for further examination and the need for evolving a policy frame which can help redirect and revitalise this sector to achieve the objectives of faster and sustained rates of economic growth.

Rationalisation of Taxation Policy

7. The multiplicity of the tax structure of motor vehicles and multiplicity of the agencies involved in the collection of taxes have for long caused hindrance to smooth operation of the inter-State movement of goods/passenger traffic. This issue has been examined by several Committees and also deliberated in a series of Transport Development Council (TDC) meetings held in the 80's. Their views were as follows:-

i) the State Governments, while revising the rates of motor vehicular taxes, should ensure that there is parity of taxes in neighboring States;

ii) that in place of different taxes, under various heads, there should be an amalgamation of various taxes such as passenger tax, goods tax and road tax; and.

iii) as for the basis on which specific rates of taxes are levied on different types of vehicles, the norms may be as follows:-

a) Stage carriages which have been built and used on the roads have different seating capacities and sizes. For these public service vehicles, the norms could be seating capacity along with authorised number of standees.

b) Contract Carriage by the very definition of the term, is required to be engaged as a whole, except a taxi cab, and hence a lumpsum tax depending on the registered seating capacity thereof would be suitable basis;

c) For personalised vehicles like cars, station wagons, jeeps, 2 wheelers etc., one time flat rate would be a convenient norm (collection of tax at initial registration stage);

d) Small public service vheicles should also have a flat rate for the same reason of convenience of payment;

e) In respect of goods vehicles including primemovers,GVW be the basis for levy of tax. The rate of tax should be based on its maximum propulsion capacity;

f) In respect of goods vehicles operating under National Permits and tourist vehicles under AITP Scheme, the basis of tax should be a composite fee in lieu of all tax payable per plying State/UT.

8. In its 21st meeting held on 18.11.88, the TDC endorsed the above views and urged the States to consider maintenance of parity rates of taxes with those in the neighbouring States. In the 19th and 20th TDC meetings, it was resolved that the States should adopt a lumpsum one time tax system in respect of personalised vehicles and bring suitable changes in their respective Motor Vehicle Taxation Act. A few States are yet to make necessary amendment in their Motor Vehicle Taxation Act in this regard.

9. Pathkar, one of the taxes which adversally affected smooth transport operation, has been abolished w.e.f. 1.9.93, consequent upon

a resolution passed by the TDC in its 24th special meeting held on 18.8.93. A Committee was also set up to look into the matter of abolition of Octroi; it opined that it could neither be abolished nor be substituted by virtue of Entry 52 of the State List.

10. Though the State Governments are very often urged by the Central Government to curtail the wide range of taxation on motor vehicles, yet it is seen that there exits a multiplicity of taxes as well as wide differential rates of taxes among different States. Moreover, the rates of such taxes are subjected to arbitrary increases from year to year. The States are primarily responsible for collection of Motor Vehicle taxes empowered under entry 57 of the State List in 7th Schedule of the Constitution. This item is generally looked at by them as one of the sources of their resource mobilisation. On the other hand, it is the primary duty of the State as well as the Centre to provide a smooth transport service to its public, since transport is in the Concurrent List.

11. There is thus a need to reduce the multiplicity of road transport taxes, rationalise the tax structure and simplify the methods of assessment. The Centre may consider the desirability of introducing a suitable legislation to be incorporated in the parent Motor Vehicles Act for reducing wide disparity in taxation between States in the interest of smooth flow of inter-State traffic. The taxes affecting motor vehicles should be collected by barest minimum number of agencies preferably by a single agency. Uniformity in tax procedure is to be followed in the direction of achieving rationalisation of taxes.

12. While determining the quantum of taxes, the uniform procedure should be adopted considering the factors such as (i) cost of operations; (ii) prevailing fare and freight rate; (iii) utilisation of vehicles such as distance travelled, pay load, area of operation, road construction programmes etc.

**Mass Rapid Transit System**

13. Given the policy of the Government to encourage mass rapid trasit system, a phased programme will have to be chalked out to reduce personalised vehicles on the road. It may not be possible to reduce the population of personalised vehicles immediately; these vehicles can be discouraged through the deliberate policy of strengthening the public transport. Once this is done, most of the problems of road transport will be resolved. It is high time that suitable Govt. policy be framed and enforced with firmness to save the environment in the country.

**Heavy Incidence of Motor Vehicle Taxation on SRTUs**

14. Motor Vehicle tax and passenger tax are levied by State Governments on passenger vehicles. There are wide variations in the structure, the rate and the manner of collection of these taxes. The highest burden of these taxes is borne by SRTUs as is brought out by the percentage share of such vehicles in the total vehicle population in the country and the tax paid. The percentage share of different

categories of vehicles in the total vehicle population is as follows:-

Table 2

| | Vehicle Category | Percentage share |
|---|---|---|
| 1. | Two wheelers | 67.35 |
| 2. | Four wheelers | 13.28 |
| 3. | Goods vheicles | 17.83 |
| 4. | Buses | 1.54 |
| 5. | Of which SRTUs buses | 0.40 |

SRTUs paid Rs. 1061 crore towards the motor vehicle and passenger tax out of a total Motor Vehicle tax collection of Rs.4072 crore in 1993-94. The incidence of taxes is very high on SRTUs since their fleet constitutes only 0.4% of the total vehicle population in the country. Thus, there is a case to rationalise the tax structure with a view to reduce its burden on SRTUs.

Need For Developing (MIS) For Private Sector

15. Presently, public sector operation is compared with that of the private sector without having any comparative data of private sector passenger road transport. Public Sector (SRTUs) have well developed Management Information system (MIS), which helps in monitoring their performance . There is no reliable data available about physical parameters, financial performance, provision of passengers amenities, maintenance of buses by the Private Sector Road Transport operators. It is, therefore, essential to develop a institutional machinery to develop MIS for the Private Sector Passenger Road Transport, so that a meaningful comparison with the Public Sector Transport can be made.

## Institutional Reforms for Road Safety

16. The Indian vehicle population constitutes 1% of global vehicle population whereas its share of road accidents is 6% of the total accidents. More than 62000 persons are killed every year and lakhs of them made disabled through such accidents. Details of accidents, persons killed and injured are given in the Table 3.

Table 3.
Road Accidents in India
('000s)

| Year | Road Accidents | Persons Killed | Persons injured |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 1970 | 114.1 | 14.5 | 70.1 |
| 1980 | 153.2 | 24.6 | 109.1 |
| 1990 | 282.6 | 54.1 | 244.1 |
| 1991 | 294 | 56.6 | 257.2 |
| 1992(P) | 276.4 | 59.7 | 277.6 |
| 1993(P) | 286 | 60.6 | 288.6 |
| 1994(E) | 290 | 62.0 | 300.0 |
| 1995(E) | 292 | 63.0 | 320.0 |

P - Provisional E - Estimated

17. It is seen that total accidents in the country have gone up to 2.92 lakh with 63000 persons killed. Several government agencies - judiciary, police, road authorities, motor vehicles departments, SRTUs, hospitals and social departments are involved in accident related issues. The total estimated economic loss, including damage to the property, due to road accidents is estimated at Rs. 6,000 crore per year. Thus there is a need

to strengthen research on road safety and to conduct training programmes for various agencies and departments, develop a data network through computers, innovative designing of vehicles for minimising accidents and improving safety and other related matters.

**Freight Transport:**

18. In India, road freight operations are almost entirely within the private sector. There is a two-tier structure prevailing in freight transport operations. The first tier is transport companies or agencies, which secure most of the freight contracts because of the following reason:

a) reputation for reliable and dependable service.

b) a network of branches or associated companies across the country.

c) recognition by Banks.

d) ability to offer security against loss or damage.

19. The second tier comprises the smaller operators, who actually carry bulk of the freight. It has been estimated that 80-90% of truck operators are single vehicle owners.

20. Longer distance freight movements are likely to be split into more than one leg using different operators and requiring transhipments between vehicles. The reasons for this include :-

a) restriction on the use of national Permits.

b) local operator is likely to be familliar with his area.

c) the higher probability of return loads for shorter hauls.

21. Another aspect of freight movement is that 90% of the total freight transport on both National and State Highways is carried on two-axle rigid trucks which are generally overloaded and cause significantly more damage than vehicles with more than two axles which have a better load distribution. If multi-axle trucks were to carry 25% of inter-district traffic, the damage to the roads would be considerably reduced.

**Modernisation of India's Truck Fleet.**

22. There are two ways to modernise the truck fleet which would benefit our country. These are:-

i) Design improvements which could be incorporated in a wide range of truck models; and

ii) Promoting the use of multi-axle vehicles.
While bringing design improvements, the following objective should be looked into;-

- high torque at low engine speed:
- slower engine speed, for durability:
- maximum horse power at less than 2,000 rpm:
- maximum forged range commencing at 1000 rpm; and
- low specific fuel consumption.

23. The high power/freight ratio found in many trucks in developed countries are not yet warranted in India. In most of

the MAVs currently offered to India, the power/wt ratio is also very low (3.8 to 5 h.p.). This needs to be increased to a minimum of six.

24. Apart from this, chassis and body design of the goods carriers should be improved to minimise road damage, reduce fuel consumption and increase volumetric capacity.

25. To reduce braking effort and increase safety, full air brakes should be standardised on vehicles exceeding 12 tonnes GVW. The system should be dual line, anti locking , with automatic brake wear adjusters.

26. According to an analysis conducted by VFMRVCS, USA, it is found that under all loading scenarios, substantial savings could be achieved if the share of three-axle rigid truck was to rise from its present level of 3% to 25%.

27. Bulk of the traffic is concentrated on the national and state highway systems' which accounts for 35% and 40% respectively of total tonne-km. by road in India. Therefore, there is urgent need to improve these national/state highways and to expand their network since at present these constitute 2% and 6% respectively of the total road length in the country.

**Road Network Development**

28. The road network in the country presently spreads to about 29 lakh Kms out of which broadly half the length is surfaced. This includes about 2 lakh Km urban roads and 34,000 Km of national HighWays. The total road network has increased by 6 times from 4 lakh Kms in 1950-51 to 29 lakh Kms in 1994-95. The growth of road network in the country since 1951 is given below:-

| Year | National Highways | State Highways | Other Roads | Total | % Increase Over 1950-51 |
|---|---|---|---|---|---|
| 1950-51 | 0.20 | 0.43 | 3.37 | 4.00 | - |
| 1960-61 | 0.24 | 0.62 | 4.39 | 5.25 | 31 |
| 1970-71 | 0.24 | 0.80 | 8.13 | 9.17 | 129 |
| 1980-81 | 0.29 | 0.95 | 13.80 | 15.04 | 276 |
| 1985-86 | 0.32 | 1.00 | 15.94 | 17.26 | 332 |
| 1989-90 | 0.33 | 1.24 | 18.27 | 19.84 | 396 |
| 1990-91 | 0.34 | 1.27 | 18.55 | 20.16 | 404 |
| 1991-92 | 0.34 | 1.29 | 18.78 | 20.41 | 412 |
| 1994-95 | 0.34 | 1.35 | 27.15 | 28.84 | 621 |

Source: Transport Research Wing

29. During the year 1951-1995, the total vehicle population increased from 3 lakh to 320 lakh, registering an increase of 105 times. The growth of road length, however, has not been commensurate with the growth in number of vehicels; it increased, as mentioned above only 6 times.

30. At present, National Highways (NHs) constitute only 2% of the road network but carry approximately 40% of the road traffic. Thus NHs have a pivotal role in the road transportation. However, the system is experiencing congestion resulting in higher vehicle operating cost as well as higher consumption of fuel. It is thus imperative that the Nhs are improved to support and sustain economic growth. There is also a need to plan for a network of expressways for uninterrupted, fast and safe movement of passanger and freight traffic.

31 In the 8th Five Year Plan, an outlay of Rs. 12,833 crore consisting of Rs. 2,600 crore for the Central sector and Rs. 10,233 crore for State Sector Roads was made by the Planning Commission against the proposed outlay of Rs. 32,630 crore (Rs. 6,630 crore for Central Sector & Rs. 26,000 crore for State sector Roads) recommended by the Working Group on Roads. Due to the resource cut, the development of National Highways has been adversely affected. The resource requirement for removing deficiency in the National Highway system has been estimated at Rs. 52000 crore at 1994 price level.

32 Timely upkeep and maintenance is an inescapable necessity for road network built at a huge cost. Highway maintenance budgets in the past have not been adequate to meet the requirements. As a result,there has been general fall in maintenance standards and deterioration of service. The gap between re-

quirement and allocation of funds has been widening year after year. Even the Planning Commission, in their document on 8th Five Year Plan, have stated that the availability of fund for maintenance generally does not exceed 60% of the normal requirement and in case of rural roads it is still less. For example, only Rs. 245 crore was provided against the requirement of Rs. 474 crore for the maintenance of NHs during the year 1994-95.

**Requirement of Road Development in 9th Five Year Plan.**

33. In order to cope up with the increase in traffic demand, the development of NHs in high density corridors needs to be concentrated broadly on the quadrilateral with diagonals connecting the major cities of Delhi, Bombay, Calcutta and Madras. As per the present norms, sections of NHs carrying traffic volume of 15,000 PCUs (passanger car units) per day in the design year would qualify for the 4-laning. Accordingly, a length of about 22,000 Kms would qualify for 4-laning. The break-up is as under :-

| PCUs | Length in Kms. |
|---|---|
| 15,000-25,000 | 8,000 |
| 25,000-35,000 | 7,000 |
| More than 35,000 | 7,000 |

It would be desirable to plan for expressways in corridors where the traffic volume exceeds 35,000 PCUs by the year 2002. The Government has also identified the length of about 13,000 Kms for super NHs (expressways) and propose to carry out the feasibility studies in respect of these roads.

34. Keeping in view the huge requirement of funds for improving the overall road network and the limited budgetary resources, it is desirable to involve private sector in the development of Express-ways and NHs on BOT basis. Even though the proposal for private financing of some ROBs and bye passes are under consideration, not much headway has been made in this direction. Development of express highways is highly capital intensive and the gestation period is very long. This also involves land acquisition which is a very time consuming process. In this scenario, it is unlikely to have any significant length of express-ways completed and opened to traffic in the 9th Five Year Plan. Thus, the exphasis in the IX Plan should be on our arterial routes as well as 4-laning of NHs leading to ports.

35. At present, most of the NHs are deficient in terms of geometrics and way-side facilities to take care of MAVs and container traffic. With the opening up of the economy and increase in trade, the container traffic is bound to increase in the coming years. Therefore, there is a need to improve our arterial routes to cater to this requirement.

36. A scheme for providing basic way-side amenities like parking areas, drinking water, toilets, snack bar, restaurant, rest rooms, KIOSKS etc. for cars, buses has been launched for facilitating long distance travel by road and to enhance road safety along NHs. Presently, these facilities are being provided through Government and private financing. Keeping in view our

vast road network, a few way-side facilities which are in the pipeline, are totally inadequate to cater to the needs of traffic. There is thus the need to augment the way-aide amenities in a big way during the ensuing Five Year Plan.

37. For facilitating the freight traffic especially, there is a need to provide the amenities like Transport Nagars and Truck Parking Bays etc. A few such facilities have already come up; there is need to augment these facilities further.

38. The increase in number of road accidents along the NHs is a matter of concern. More than 60,000 lives are lost in 3 lakh accidents reported every year. As per the statistics, 25-30% fatalities are occuring on NHs. Emphasis should, therefore, be put on improvement of accident prone locations, replacement of level crossings by road over bridges, provision of retro-reflective road signs and thermo marking signs to improve the road safety standards.

39. National Highway Accident Relief Scheme has been launched since 1993-94 in selected portions which envisage stationing of rescue teams at 50 Kms intervals to remove ill fated vehicles and to move road accident victims to nearby medical centres. In view of the usefulness of this scheme, there is a need to extend the purview of this scheme to heavy traffic corridors on NHs and State Highways all over the country.

40. The Highway system of the country will be crippled unless the ribbon development along NHs near towns and cities is brought under control expeditiously. There is thus an urgent need to enact a suitable legislation at State level to enable speedy removal of encroachments and also to regulate land use.

Financing

41. Only 35-40% of the revenue generated from the road transport is being ploughed back in the development of road system in India, whereas in advanced countries like USA, Germany, and Japan, more than 100% of the revenue generated from this sector is ploughed back for the improvement of road network. There is, therefore, a strong case for increasing alocation in the road & road transport sector to the extent of atleast 70-80% of the revenue generated from the road transport industry. Alternatively, Government may consider levying some aditional cess on petrol, diesel, vehicles and their accessories, which can be exclusively used for road improvement.

R&D Training and Environmental Issues

42. Environmental concerns are growing more than proportionately with the vehicles population. This is because of the low level of environmental awareness prevalent in the country. Therefore, more attention needs to be focussed on engineering, education and enforcement of regulation relating to pollution emission norms. The engineering aspects call for an invigorated implementing mechanism. The attention of the States be focussed on those'public' issues rather than simply enhancing the number of vehicles due to the pressure of demand.

Review of Financial Performance -8th Plan

43. There has been a shortfall in the expenditure as compared the 8th Plan outlay for road transport under the central sector. The statement at Annexure-III gives the scheme wise details of outlays and expenditure on road transport.

44. The major shortfall is on account of slippage in expenditure on DTC, capital contribution to SRTCs, development of infrastructure for training, national highway patrolling etc. As regards DTC, its huge losses and large surplus staff were responsible for its slow growth. Under instructions from Ministry of Finance, the Plan outlay for DTC was utilised for payment of salary and wages. Consequently, no real effort could be made for the creation of capital assets..ls1

45. As regards capital contribution to SRTCs, in keeping with the Planning Commission's new guidelines on this subject, matching contribution to the SRTCs was stopped with effect from the second year of Plan. The limited plan funds were utilised for payment of past arrears on this account.

46. In view of the above reasons, the expenditure during the Plan has fallen short of the approved outlay.

## CHAPTER III

## A POLICY FRAME FOR THE 9TH PLAN

The various issues concerning road transport sector have been highlighted in the preceding chapter. They include the rapid acceleration in vehicle population, the inadequacy of the road infrastructure, the growing environmental concern, the proliferating personal modes of transport, the limited attention to research and development and thereby slow progress of the upgradation of vehicle and road infrastructure, road safety issues and above all a tremendous shortage of resources. With these issues at the background, the Working Group has proceeded to formulate the 9th Plan for the road transport sector.

### Need for Private Participation

2. The growing awareness relating to the resources gap has already made a new wave of thinking in planning for the transport sector as well. The public sector alone cannot meet the demand and an increasing role of the private sector is expected to bridge the gap in the transport service sector. Of course, the dominance of the private sector has already been there in the freight segment. With a declining share of the Public Sector State Road Transport Undertakings, the private sector is expected to accelerate their operation even in the passanger transport segment.

**Role of Private Sector**

3. The new wave of thinking envisages an active role for the private sector not only in the field of operation of transport services and in providing transport infrastructure on BOT basis, but in other areas such as environmental issues e.g. pollution control, road safety, R&D for upgradation of vehicles, improved passenger amenities etc. In all these areas, the private sector can perform and is expected to increase its presence at least in terms of supplementing governmental efforts.

4. Therefore. the policy frame has to be more of an indicative nature rather than encompassing all micro level programmes of action coupled with corresponding funding programme. In other words, the new policy envisages a move from micro level control to overall direction and regulation. The areas such as environmental related issues, road safety etc will, however, be the primary domain of the government and greater focus is to be made on these issues by the public authorities.

5. It may, however, be mentioned that privatisation does not mean a free for all situation. This will be unhealthy and unviable given the public utility character of the transport services . Rather such a policy approach will lead to total chaos and confusion. Therefore , in order to maximise the socal gains the transport sector has to be properly directed and regulated. This is underscored by the limited experience of privatsation;so far privatisation in this sector has not been found satisfactory . Of course, this is mainly due to the neglect of proper regulatory

and enforcement mechanism and thereby permitting private operators to function on ad hoc basis due to the demand-pull factor.

.Areas of concern

6. Moreover, the private sector participation in providing public transport services has opened up several issues. The most important one is the absence of a level playing field for the Public Sector Road Transport Undertakings,because the PSRTU are expected to bear the burden of many social obligations such as concessional fare to students and economically backward people, operation of uneconomic routes etc. The conservative estimate of the financial burden on account of social obligations is over Rs 400 crore in 1994-95. Another major handicap of the PSRTUs is the inordinate delays in revising the fares which make operational costs always riding above the operational revenues. All these necessitate a greater degree of flexibility and freedom in the operation of the PSRTUs if they are expected to function on commercial lines and compete with the growing private sector operations.

7. As seen above, the private sector participation has to be controlled and regulated . The operation of innumerable private parties result in difficulties in regulation. In view of this, the Working Group feels that private sector operation has to be 'corporatised'. The emergence of the 'corporate culture' will itself bring in some degree of discipline in their operation. Moreover, these companies will be able to employ skilled and trained people. Again, even for the enforcement authorities, it is easier to regulate a few companies rather than a large numner

of single or double bus owning private operators. Therefore. the Working Group reiterates the need for introducing the corporate culture while extending private sector participation in passanger services.

8. Another area which needs attention in the 9th Five Year Plan relates to the formulation of broad direction and guidelines with regard to environment and road safety aspect . India is on the threshhold of a transport revolution; the growing environmental concers are relatively unfamiliar. This calls for innovative thinking and the adoption of proper policy guidelines and institutional mechanism.

9. To recap, in the context of the increasing attention on the issues of financing, environment, safety, R&D etc.and particularly the growing resource gap, the private sector is expected to play a major role. However, that role should be played with responsibility. While the Plan cannot tackle all these issues through the public sector,it calls for developing a "responsible private sector participation" as the guiding spirit of the policy frame for the IXth Plan . The focus of the Government sector should be on framing the directions and institutional mechanism for achieving this and in designing R&D programmes for meeting the growing challenges much as safety, environment and quality upgradation.

## CHAPTER-IV

## TRAFFIC PROJECTIONS AND FLEET GROWTH

Road transport accounts for over 60% of the freight movement and 80% of the pasenger movement as of now. As mentioned earlier, since the beginning of the 90s, with the unleashing of the reform process, the transport sector has entered into a higher growth trajectory. In view of this, for taking appropriate and advance policy measures, it is imperative to have medium and long term projections relating to the growth of the road transport sector. This is all the more important since the road infrastructure, the quality and quantity of which determine an efficient transport sector along with the vehicles, need appropriate planning much in advance of its demand. As such the Working Group has made projections of the growth in transport during the 9th Five Year Plan and beyond upto the year 2007.

2. Before coming to the projection of the transport vehicles, it would be useful to examine the changing rail-road mix in moving passengers as well as freight over the years. For instance, in the case of freight movement while the rail-road share was 78.5:21.5% in 1951, currently it is estimated to be 27:73 (Annexure IV). Similarly, in passenger movement, the relative rail-road share has changed from 62:38 to 12:88 during the same period. This drastic change of the relative share has actually made all the predictions which were made in the early and late

80s (NTPC and Steering Committee) quite off the mark. Apart from bringing the road transport sector to an unassailable dominant position, it has opened up a number of issues relating to the surface transport sector in general and road transport sector in particular. Most of these issues have been examined in Chapter II.

3. While drawing up the latest share of pasenger and freight movement between rail and road, the Working Group has been extremely constrained by the lack of proper and up to date information on traffic movement in the road transport sector. The estimates given are based on projections using quite old data which was compiled in the 80s, again based on sample information. As such, the need for having regular flow of the traffic movement data has been stressed by all concerned which the Working Group also would like to reiterate. It is noted that a study on Traffic Flows by Road Transport is being commissioned shortly. This highlights the need for strengthening the data base system at the national level, which is further examined in Chapter IX.

4. The growth of vehicle population over the years is given in the statement at Annexure-V; the production data of motor vehicles, category-wise, is set out in Annexure-VI. The freight and passenger movement estimates are given in Annexure-VII. However, based on the available data, an attempt has been made to project passenger and freight traffic during the 9th Plan and upto 2007. Projections are done, based on the trend data for

1966-96 and by assuming different growth rates of GDP in future (6, 6.5 and 7%). Based on these methodologies, the projected passsenger Km for 2002 (terminal year of the 9th Plan) comes in the range of 4431 billion passenger Km. - 5900 billion passenger Km. Long term projections take it to 7104-12156 billion passenger Kms.in 2007. The details are given in Annexure-VIII.

5. As regards projections of freight movement, using the same methodology as explained above, the freight traffic is estimated to be in the range of 1276-1700 billion tonne Km. by the terminal year of 9th Plan. It is likely to be in the range of 2054 billion tonne Km.- 3480 billion freight Km. by 2007. Details are given in Annexure-VIII.

6. Similarly, estimates have been made regarding the number of automobiles which will be running on the Indian roads for each year of the 9th Five Year Plan and beyond upto 2007. The methodology used is again the same, i.e., the trend of 1960-96 and assuming differential GDP growth rates. The motor vehicle population, category-wise, has thus been estimated, the details of which are given in Annexure-IX. Accordingly, it is projected that the number of car population will be in the range of 6.9 - 8.8 million by 2002 and 10.2 to 16million by 2007. Similarly, the bus population will be in the range of 687000-857000 by 2002 and 942000-1414130 during 2007. The two-wheeler population is projected to grow in the range of 59 milion to 84 million by 2002; this is likely to be in the range of 130 million to 289 million by 2007 (Annexure-IX). Similarly, the three-wheeler

population will be in the range of 3362000 to 5154000 by 2002. This is estimated to grow to 9583000-15855000 by 2007. The LCVs and HCVs are projected to grow in the range of 1031000-1422000 and 2041000-2518000, respectively, by 2002 and further to 1713000-3091000 and 2822000-4148000 by 2007 (Annexure-X).

7. The projections given above, even if taken as just indicators of the potential growth of the road transport sector, are, however, alarming. This is particularly true in the case of personalised modes of transport, i.e., passenger cars and two-wheelers. Undoubtedly, this will put tremendous strain on the road infrastructure and will have extremely adverse impact on road safety and environment. This strongly points to the need for improving the public transport system which is the only way to restrict the growth of personalised modes of transport. In a growing economy, one cannot consider putting constraints on mobility as this will adversely afffect economic growth itself. As such, ways of mass movement rather than individual movement have to be resorted to particularly in the growing urban centres.

8. Considering the technological advancement taking place in trucking technology, particularly in the form of multi-axle vehicles, with higher tonnage capacity, just predicting the number may not be enough because a higher capacity truck can carry more freight. As such, an attempt has been made to project the tonnage of trucks needed for the terminal year of the 9th Plan as well as for 2007. Accordingly, the trucks tonnage will

be in the range of 21 million to 26 million in 2002 and 29 million to 45 million during 2007 (Annexure-XI).

9. Thus, looking at the projections for freight and passenger movement and the vehicle population, it is possible to foresee the extent of strain going to be on the road transport sector. It also highlights the need for incurring heavy investments in road infrastructure. Investment in vehicles will be primarily by private sector, except in the case of PSRTUs and Government vehicles. As mentioned earlier, it also highlights the need for massive investment in public transport modes which will be the only way of reducing congestion, over-crowding, pollution and other environmental issues which will assume serious dimensions in future.

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## CHAPTER-V

### PUBLIC SECTOR ROAD TRANSPORT UNDERTAKINGS(PSRTUs):

Road transport passenger services are provided both by the public and private sector in the country. In the public sector, there are at present 71 PSRTUs. While many States have established these undertaking under the Road Transport Corporation Act(1950), some States have preferred company form of organisation for their undertakings. Yet some States like Haryana, Sikkim and Nagaland have set up departmental undertakings to provide transport services.

2. The 8th Plan provides Rs.264 crore in the Central Sector; the outlay is mainly for the (i) programme of DTC, (ii) payment of arrears of centre's capital contribution to the SRTUs and (iii) financing the road safety programme. The Plan outlay in the State sector is Rs.3,585.53 crore mainly for purchase of buses and the development of infrastructure by the SRTUs.

3. Over the years, the share of nationalised passenger transport services has been declining on account of larger participation by the private sector. As on 31.3.95, there were around 1,11,538 buses in the public sector with a total capital investment of Rs.6,256 crores. The public sector transport undertakings employed a total staff of 7,73,491 at the end of 1994-95. These undertakings performed passenger kms of

43,231 lakh during that year. On an average, they carry about 6 crore passengers daily.

**Policy Measures:**

4. The Government initiated the following policy measures during the 8th Plan for the improvement in the performance of SRTUs:

(a) Emphasis on replacement of overaged fleet.

(b) In-service training of staff engaged in operations and maintenance.

(c) Technological upgradation of design of buses, introduction of State-of-the art engine which is fuel efficient and causes less pollution.

(d) Emphasis on traffic safety measures.

(e) The incremental demand for passenger traffic can well be met by the private sector. Therefore, there is no need for the public sector to add to their fleet of buses. However, exceptions, in specific difficult areas where private sector may not be willing to operate, can be made;

(f) Budgetary support for capital requirements to meet expansion of bus fleet/services would, therefore, be confined to exceptional areas only;

(g) If a public sector SRTU is functioning well and generates sufficient resources for expansion of its service and fleet, without dependence on budgetary support, it may do so;

(h) A mechanism should be evolved to facilitate auto-

matic revision of passenger fare on annual/bi-annual basis to compensate for the increase in costs of inputs.

(i) The private sector would need to be regulated to ensure safe, efficient, and reliable transport services.

**Thrust Areas in the Eighth Plan:**

5. The 8th Plan identified the following thrust areas for improving the performance of SRTUs:

(1) Technological upgradation in the automotive sector;

(2) Consolidation of operations of SRTUs;

(3) Replacement of overaged buses;

(4) Private Sector participation in Passenger Transport;

(5) Improvement in overall productivity;

(6) Adoption of energy conservation measures; and

(7) To have integrated transport services by both the Public Sector and the Private Sector.

In the following paras, we discuss the progress made in the above areas during the plan period.

**(1) Technological Upgradation:**

6. The country has experienced a boom in vehicle population since 1980. A spate of collaboration agreements for manufacturing new brand of motor vehicles have been entered into over the years. As a result, there has been an introduction of fuel efficient and environmentally clean vehicles. However, the technological upgradation has been limited to personalized

modes of transport. Its impact on passenger buses has been minimal. While the major manufacturers in the country have made R&D effort for modernisation of bus chassis, they are hesitant to come forward for commercialisation of their prototypes in the absence of firm demand from the industry for the new products. So the upgradation of commercial vehicles has been limited to the introduction of fuel efficient engines so far.

7. The bus chassis is the same as for the trucks and as such does not provide riding comfort to the users; bus body is not built on modular concept which reduces tare weight, saves on fuel consumption and reduces the down time of vehicles. The thrust should therefore, be on improving driving and riding comfort, optimising fuel efficiency, improving aesthetics, ensuring high standards of safety etc. These requirements could be met through upgradation of existing technology rather than going in for high tech high cost options.

(2) Consolidation of Operations:

8. In the context of the policy guidelines that incremental traffic demand be met through the private sector, it is easy to infer that SRTUs should concentrate on consolidation of their operations. This would help them improve their performance-both physical and financial and prepare them to face competition more effectively.

Replacement of Overaged Buses:

9. Substantial progress was made by the SRTUs in the 7th Plan in the area of replacement of overaged buses. However, the 8th Plan policy guidelines that replacement of buses be funded from Depreciation Reserve Fund(DRF) maintained by the SRTUs, impaired the achievement of this objective. It is a common knowledge that majority of the SRTUs are incurring losses, some of them even cash losses. Consequently, they are not able to set apart funds towards depreciation. The entries for DRF in their accounts are 'notional'. In the circumstances, these undertakings have no funds to replace their overaged fleet which has risen during the 8th Plan on account of accumulated arrears of replacement. This is a matter of real concern since the increase in overaged fleet leads to frequent breakdowns, poor fleet utilisation and fall in revenue earnings.

(4) Private Sector Participation:

10. The role of the private sector in providing passenger bus services has considerably increased due to deliberate policy of the Government to encourage their participation in this industry. The transport undertakings in certain States such as Andhra Pradesh, Maharashtra and Gujarat where the bulk of the routes are nationalised, are doing well and have even expanded their fleet during the 8th Plan. But a large number of States where SRTUs are not doing well, have encour-

aged private sector participation in road transport industry.

11. While the competition from the private sector is congenial for the growth of the road transport industry, SRTUs have benefitted only to a limited ex tent. The basic reason for this phenomenon is that there is absence of level playing field for the SRTUs. They have an obligation to issue concessional passes to students and others and operate service on uneconomic routes under Government's instructions. The loss on account of the social burden is estimated at over 400 crores per annum. Besides, there is excess manpower in most of the undertakings. The last but not the least is the lack of autonomy in the fixation of fares. The increase in fares is administered by the respective State Government.

12. While the need for private sector participation is considered unavoidable since majority of the SRTUs do not have their internal resources for augmentation of their fleet, there is a need to grant greater autonomy to the SRTUs if they have to discharge their social obligations.

13. At present, most of the private operators own a bus or two. These small operators have scant regard for the welfare of the employees, road safety, punctuality of services etc. On account of large number of such operators, the State transport Authority is not

able to regulate them effectively. Having regard to these social and legal problems, the State Government consider issuing requisite guidelines in this regard. It would be desirable that these private operators run on corporate lines operating a minimum size of fleet to be determined by the State. Such an entity is expected to be more responsible in discharging its social and legal obligation and also would be amenable to regulation under the Motor Vehicles Act.

14. Another area of concern is the private sector generally has the sole objective of making profits. Therefore, private operators make all-out efforts to obtain permits for operating on lucrative routes leaving unremunerative routes to the SRTUs. It is common knowledge that SRTUs have been operating on both remunerative and unremunerative routes and their losses on unremunerative routes are cross-subsidised by surplus on remunerative routes. Once remunerative routes are taken over by the private operators, who are expected to work for it, the SRTUs would not be in a position to subsidise the losses on uneconomic routes. Consequently, their losses would increase with larger participation of the private sector. It is therefore recommended that States should frame guidelines with regard to privatisation of routes; it should be a mix of remunerative and unremunerative routes. Alternatively, State Government could consider earmarking of the routes in a Region/Zone/Circle to the private sector and allowing

SRTUs to operate in another region(s). Karnataka State has already issued the guidelines in this regard. It is imperative that other State Governments also come out with specific guidelines in the interest of unfettered growth of transport services in the country.

(5) Improvement in Productivity:

15. There has been consistent improvement in the physical productivity parameters of the SRTUs. The details in this regard are discussed in the chapter III.

(6) Integrated Transport Services:

16. The 8th Plan envisages integrated road transport services involving both the private operators and the public sector SRTUs. The basic approach of the plan is that incremental traffic demand should be left to be met by the private operators; the SRTUs should consolidate their operations and the two together should provide adequate transport services for the public at large.

17. Most of the State Governments have taken steps to encourage private operators to supplement the services provided by their respective SRTU. However, in most of the cases, the routes lengths given to the private operators are rather restricted. Efforts need to be made to integrate the two operators appropriately to meet the demand for such services. There is need for an appropriate regulatory framework for both the

operators to maximise the social welfare.

(7) Energy Conservation:

18. Transport is a major consumer of energy. Hence, energy use planning is a critical aspect of the transport sector. Over the years, SRTUs have been making endeavours in minimising the consumption of fuel. Despite a large number of over-aged buses in their fleet, which has increased during the VIII Plan, SRTUs in general could maintain their fuel efficiency around 4.48 km per litre(KMPL) for the last four years. The average kms operated per litre of HSD is 4.52 in rural SRTUs, 3.39 in SRTUs operating in hilly regions and 3.4 in urban SRTUs.

19. Fuel conservation measures include various technical and managerial controls, apart from creating a culture in the organisation where everyone right from cleaner/driver/mechanic to top executive participates in the efforts to improve fuel conservation. APSRTC has developed a philosophy to bring total change in the attitude of a worker, Supervisor and Manager through the process of training, counselling and dialogue with them. The Working Group could not obtain information on fuel conservation measures introduced by the various SRTUs in the country for want of adequate time at its disposal. It was noted that APSRTC has been performing excellently in the matter of fuel efficiency; it has been consistently getting Trophies for the best fuel performance.

20. It will be useful to list the technical and managerial controls introduced by APSRTC in the area of fuel conservation. These measures could be introduced with advantage by the sister SRTUs to improve their fuel efficiency. These are briefly discussed below.

Technical Controls:

(1) Better fueling practices using automatic cut off nozzles to avoid any spillages.

(2) Fitment on HSD Oil tank caps with seals ensuring filtration of dirt and dust particles into the tank and leakage of the product.

(3) Overflow connection, fuel filters, breathers, pipiline clampings and HSD oil tank strainers are maintained to the required standards.

(4) Tappet adjustment, FIP timing by spillcut method and Cylinder head nuts tightening is being carried out regularly or effective engine tuning.

(5) Strict quality standards are enforced for Overhaul of Fuel Injection equipment, Engines, Self Starters and Alternators.

(6) Sufficient floats of the Injectors and FIPs provided to all the depots for timely change of defective Injectors and FIPs.

(7) Effective maintenance of Air Cleaners with Rubber Seals.

MANAGERIAL CONTROLS

1. Extensive periodical training to Drivers, Driving Instructors, Maintenance Staff, Supervisors and Officers on maintenance of Vehicles at Regional Staff Training Colleges.

2. Depot/Region-wise targets are fixed well in advance based on the past performance. Performance of the units is monitored periodically vis-a-vis the targets fixed at Regional and Head Office level and action plan to bridge the gap are prepared and executed.

3. Identification of low performing Drivers on Daily / Weekly / Monthly basis and counseling by the Depot Managers to awareness on fuel conservation.

4. Two Asst. Engineers one for TATA and one for Leyland fleet are exclusively posted to look after fuel management, to provide assistance to the low performing depots. They review the measures and systems followed at these Depots and suitably guide the field staff, educate them on the latest developments that are taking place in fuel injection equipment and other technological changes in the Vehicles, in close coordination with the Service Engineers of M/s Ashok Leyland and Telco.

5. Driving habits play major role in conservation of fuel. The low performing Drivers are withdrawn from service and they are subjected to intensive training as per the PCRA guidelines.

6. Incentive Schemes for Drivers and Maintenance staff for motivation towards fuel conservation.

7. Group Award schemes to the depots are also instituted to inculcate competitive spirit amongst to achieve higher fuel performance.

8. Effective Lubrication of Transmission and Suspension sys tems.

9. Maintenance of correct type inflation pressures.

10. Improved Battery and Self Starter maintenance. None of the Vehicles start with push starting.

11. Enforcement of Vehicle speed controls to operate at economical speeds, by supplying Speedometers to all depots for carrying out periodical checks.

12. The line Managers from Depot Manager to Regional Managers are made to get involved in checking a certain percentage of Vehicles for their condition in the pit so as to rectify the defects so identified for improved vehicle performance.

13. Provision of Compression Testers to depots for timely checking of Compression Pressures in the Cylinders.

14. Provision of gadgets at the depots for testing of the speed limits of the vehicle land the smoke levels have been made to improve the performance of the vehicle.

15. Inspection standards and procedures have been tightened at Workshop level. Periodical checks are being conducted of the overhauled units before being dispathed to depots for ensuring quality.

16. The essential spares required for the upkeep of Fuel system and healthy air intake system and for KMPL attention are identified and their availability is ensured at all the depots.

17. Correct receipt of HSD product without any loss on enroute, Strict decanting procedures are laid down. Daily checks are being conducted to ensure correct accountal of issues and stocks.

18. Reduction in Body weight through usage of Aluminum, FRP and other lighter materials.

19. Fitment of 2300 Fuel efficient Hino Engines on Leyland Buses and 2400 fuel efficient 697 engines on Tata Buses.

20. By fitment of Radial tyres, an improved performance of 3% in KMPL is obtained.

21. 13 Smoke Density measuring meters procured to check smoke emission levels periodically.

22. Vehicle Testing Equipment has been aquired for testing the Steering Geometry, Brake efficiency, Wheel alignment, Head lights, Smoke emission level, Noise level, Speed of the Engine of the Buses.

21. The Working Group understands that in the matter of energy conservation, the private bus operators' contribution is pretty little. Generally, these operators, for reasons of minimising staff cost, engage semi-skilled drivers; their driving habits coupled with overaged buses they ply result in high fuel consumption. Consequently, their performance in terms of KMPL compared unfavourably with that of SRTUs. It is, therefore, suggested that State Governments should consider steps to motivate private bus operators to arrange for the training of their drivers in national interest. Renewal of driving licenses could be linked to their proper and periodical training. States also need to set up model driver training schools for imparting training especially to professional drivers.

22. It is interesting to note that at the national level, the Oil Conservation Week is being observed every year since 1991 to strengthen the oil conservation movement all over the country; this is being done under the aegis of Ministry of Petroleum and Natural Gas.

## Performance of State Road Transport Undertakings

23. At present, there are 71 State Road Transport Undertakings(SRTUs) in the country. Of these, the performance of 46 (SRTUs) is discussed in depth in Planning Commission every year to assess their internal resources. These 46 SRTUs include 20 Corporations, 20 Companies and six Departmental Undertakings. Together, these represent 92% of the fleet held in the public sector. The details of these undertakings are at Annexure- XII

24. There has been steady improvement in the overall physical performance of the SRTUs during the VIII Plan as brought out in the following table:

Review of Productivity Indicators in the Eighth Plan

| Parameter | 91-92 | 92-93 | 93-94 | 94-95 (Lat. Est.) | 95-96 (Est.) | 96-97 |
|---|---|---|---|---|---|---|
| Fleet Utilisation (%age of buses on road to buses held) | 87 | 87 | 87 | 89 | 90 | 90 |
| Vehicle productivity(kms. per bus held per day | 253 | 259 | 265 | 271 | 278 | 283 |
| Bus staff ratio (staff on fleet operated) | 8.16 | 8.07 | 7.95 | 7.86 | 7.82 | 7.78 |
| Staff productivity (kms. per worker/day) | 34.8 | 36.2 | 37.5 | 38.6 | 38.7 | 41.1 |
| Fuel Efficiency (kms. per litre) | 4.46 | 4.48 | 4.48 | 4.50 | 4.52 | 4.54 |

25. On a macro level, the SRTUs have consistently improved the performance as revealed by the various productivity parameters. At the micro level, there are wide variations in the performance of various SRTUs. State-wise SRTU's performance is given in the Annexure XIII-XVII. It may be mentioned that the form of organisation, the terrain and area of operation, bus-staff ratio, maintenance infrastructure etc., affect the efficiency of the undertakings.

26. The Planning Commission's 'Status paper on SRTUs' examines the impact of improved performance of these undertakings on their physical/financial results. The findings of the study are summed up as follows - (i) Improvement in fleet utilisation by three points from 87% in 1991-92 to 90% during 1995-96 , reflects a saving of around 4000 buses in one year. In financial terms, it works out to a saving in investment of about Rs.300 crore. (ii) Likewise, improvement in vehicle productivity of 25 kms per bus/day from 253 kms. to 278 kms. is estimated. It is partly due to increased fleet utilisation and partly due to improvement in bus schedule planning. (iii) Staff productivity during the same period increased by 5.1 kms. i.e.from 34.8 kms. to 39.9 kms. per worker day; this improvement is on account of reduction in bus staff ratio and also the increase in volume of operations. In financial terms, improved staff productivity results in a saving of around Rs.500 crore in a year. (iv) As regards improved fuel efficiency from 4.46 KMPL to 4.52 KMPL, it has brought about a net saving of Rs.25 crore to the SRTUs in one year.

27. During the Annual Plan 1993-94, Planning Commission issued the following guidelines to all State Governments and State Road Transport Undertakings:

(a) Incremental demand for passenger traffic, as far as possible, should be met by the private sector;

(b) Budgetary support for capital requirement to meet expansion of bus fleet/services should be confined to exceptional areas; and

(c) If an SRTU is functioning well and generate sufficient resources for expansion of its services and fleet, without dependence on budgetary support, it may do so.

28. In the light of these guidelines and faced with financial constraint, SRTUs had no option but to slow down their programme of fleet acquisition and fleet replacement. The VIII Plan target and the latest estimate of purchase of buses including on replacement account, the fleet strength and volume of operations in terms of bus kms are given below:

Vehicle Procurement & Volume of Operations during the Eighth Plan

| Item | 1991-92 Actual | Eighth Plan Target | Likely Achievement | Variation (Col.4-5) |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| Vehicles purchased (Nos.) | 11,258 | 80,091 | 57,282 | (-) 22,809 |
| Vehicles replaced (Nos.) | 9,680 | 64,194 | 53,242 | (-) 10,952 |
| Fleet strength (Nos.) | 97,619 | 1,09,626 | 1,02,218 | (-) 7,408 |
| Volume of Operations(Crore Kms.) | 901.50 | 5065.91 | 4981.49 | (-) 84.42 |

It is observed from the above table that there is likely to be a shortfall in the purchase of buses to the extent of 22,809 buses; the replacement will be less by 10,952 buses compared to the Plan target.

29. The shortfall in total fleet strength in VIII Plan works out to 6.75%, from 1,09,626 buses to 1,02,218 buses. However, its impact on the volume of operations of SRTUs has not been proportional. The volume of operations were only marginally lower by 1.67% from 5065.91 crore kms. to 4981.49 crore kms; the achievement was made possible basically on account of improvement in vehicle productivity.

Financial Performance:

30. In 1994-95, the gross revenue earned by the SRTUs whose per formance is reviewed every year in the Planning Commission was Rs.8231 crore including Rs.7867 crores of operating revenue and Rs.364 crore of non-operating revenue. The overall average earning per km(EPKM) works out to Rs.8.21.

31. The corresponding total cost incurred by the SRTUs was Rs.8674 crores which worked out to Rs.8.66 per km. The break -up of the cost into its various components is as follows:

Components of Bus Cost in 1994-95

(in paise)

| Item | Average cost per bus km |
|---|---|
| A. Operating Cost | |
| 1. Staff | 330 |
| 2.Materials | |
| (a) Fuel, diesel, mobile oil | 189 |

| | |
|---|---|
| (b) Tyres & Tubes | 53 |
| (c) Other materials | 50 |
| Sub-Total | 292 |
| B. Non-Operating Cost | |
| 3. Taxes(MV Tax, Passenger Tax) | 112 |
| 4. DRF | 65 |
| 5. Interest | 32 |
| 6. Others | 34 |
| Sub-Total | 244 |
| C. Total(A+B) | 866 |

32. Considering the higher cost of operation compared to the revenue earnings of SRTUs and the social burden these have to carry, their financial position is not satisfactory. The total net loss as well as the net loss per bus are indicated in the following table:

Net Loss Suffered by SRTUs

| Item | 91-92 | 92-93 | 93-94 | 94-95 | 95-96 | 96-97 |
|---|---|---|---|---|---|---|
| Net Loss (Rs. crore) | -341 | -359 | -384 | -373 | -658 | -716 |
| Index of Net Loss | 100 | 105 | 113 | 109 | 193 | 210 |
| Net loss per bus (Rs. '000) | - 36 | - 37 | - 38 | - 37 | - 65 | - 70 |
| Index of Net Loss per Bus | 100 | 103 | 106 | 103 | 181 | 191 |

33. It is seen from the table that both the net loss and net loss per bus steadily increased during the VIII Plan. The pri-

mary reason for upsurge in net loss during 1995-96 and the projected upsurge in loss in 1996-97 is the rigid and unchanged fare level in a number of SRTUs, notwithstanding rising cost of their operations.

**Causes for Losses:**

34. Broadly speaking, the losses of SRTUs are on account of (i) free/concessional passes to various sections of the society as decided by the Government, (ii) operation of socially obligatory but uneconomic routes, (iii) uneconomic fares and (iv) high motor vehicle tax and other taxes. It will be useful to discuss each of these causes to appreciate their impact on the financial performance of the SRTUs.

**Loss on account of concessions in fare:**

35. According to one estimate, the impact of various concessions given by certain selected SRTUs for which data is available works out to Rs.421 crores per annum including Rs.200 crores on account of students' concessions. The Planning Commission paper gives, state-wise, details of such concessions as follows:

**Concessions Extended by Selected SRTUs**

(Rs.crore)

| State/SRTU | Students | Physically handicapped | Journalists | Freedom fighters | Others | Total |
|---|---|---|---|---|---|---|
| Andhra Pradesh | 59.41 | 8.93 | 0.62 | 2.03 | 3.01 | 74.00 |
| Gujarat | 42.00 | 0.00 | 0.00 | 0.00 | 0.00 | 42.00 |
| Karnataka | 118.32 | 0.45 | 0.05 | 7.64 | 0.97 | 127.43 |
| Kerala | 7.50 | 3.52 | 2.90 | 6.40 | 1.84 | 22.16 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Maharashtra | 56.47 | 0.05 | 0.05 | - | 0.26 | 56.83 |
| Rajasthan | 8.09 | 0.55 | 0.00 | 0.77 | 7.79 | 17.20 |
| Tamil Nadu | 34.92 | 0.57 | - | - | - | 35.49 |
| All SRTUS | 347.85 | 14.89 | 3.83 | 17.98 | 35.99 | 420.54 |

It is noted that SRTUs in the States of Karnataka and Tamilnadu are reimbursed the losses on account of concessions, albeit partially.

Uneconomic Routes:

36. Almost all SRTUs are subject to social obligation to run trips to remote areas where load factors are low and as such operations are uneconomic to the undertaking. These routes involve losses since cost of operation is higher compared to the revenue earnings. Quantification of losses on these routes at national level is not readily available.

37. The analysis of the routes in terms of their profitability shows that only 20% of the total number of routes operated by SRTUs earn net surplus; 60% of the routes cover only the variable cost and the remaining 20% of the routes do not cover even variable cost. Details in this regard may be seen in the statement at Annexure-XVIII.

Uneconomic Fares:

38. SRTUs have no autonomy in the matter of fixation of passenger fares. The fares are fixed by the concerned State Government and allowed to be revised by the State on the basis of proposals made in this regard by SRTUs.Experience over the years reveals that there are often delay extending to 18-24 months in fare

revisions and the extent of allowed increase is not commensurate with the increase in cost of inputs. Hence the losses.

39. If losses are to be eliminated, SRTUs need rational and economic fare structure which, besides covering the cost of operation allows generation of adequate surplus to meet the higher replacement cost of assets on account of continuing inflation and also for the self-sustained growth of the SRTUs. There is an urgent need to evolve a method/formula for automatic revision of fares based on increase in cost of inputs.

40. The Group understands Maharashtra SRTC have evolved a model for automatic fare revision whenever there is an increase in expenditure over which SRTUs have no control. These items of expenditure relate to (i) DA to staff, (ii) Diesel prices, (iii) Tyre prices, and (iv) Store prices. Their proposal is now with the State Government for consideration and approval. Once it is cleared by the State Government, it would help the undertaking to improve its financial performance considerably by cutting down the normal delays involved in formulating the proposal, submitting it to the State Government and getting their approval. **The Group strongly favours the formulation of automatic fare revision formulas in all the States in the interest of improving the financial health of the public sector undertakings.** The formula may also take into account the increase in motor vehicle taxes and increasing replacement cost of the buses.

**Incidence of Motor Vehicle Tax, Other Taxes :**

41. At present, there are wide variations in the level of taxes motor vehicles and the passenger tax levied by different States.

Details of Motor Vehicle Tax/Passenger Tax paid/payable by SRTUs in respect of some selected Undertakings are given below:

**Taxes paid in 1994-95 by State Road Transport Undertakings**

| Name of SRTU | Total Taxes | Taxes | | |
|---|---|---|---|---|
| | MV Tax+ Pass.Tax (Rs. cr.) | Per Bus (Rs.'000) | Per Bus Km. (Paise) | As %age to Traffic Revenue |
| Haryana | 109.24 | 287.5 | 250 | 30.63 |
| PEPSU RTC | 26.12 | 236.1 | 251 | 28.11 |
| Punjab Roadways | 45.39 | 191.6 | 210 | 26.32 |
| Himachal Pradesh | 34.83 | 208.9 | 285 | 30.00 |
| Maharashtra | 236.66 | 152.2 | 154 | 17.12 |
| Rajasthan | 57.51 | 128.7 | 126 | 15.19 |
| Gujarat | 108.15 | 120.8 | 117 | 16.36 |
| Karnataka | 104.44 | 103.5 | 106 | 14.83 |
| All SRTUs | 1153.95 | 114.3 | 116 | 14.90 |

In 1994-95, 46 SRTUs who hold discussions with the Planning Commission(and own around one lakh buses) paid about Rs.1154 crores towards motor vehicle and passenger tax to the exchequer. It is interesting to point out that the total tax collections by the Government from the Road Transport industry (which had over 27 million vehicles including 4.19 lakh buses and 16.5 lakh goods vehicles) was Rs.4072 crores. This clearly brings out the fact that the incidence of taxes on the SRTU is quite high. As a

matter of fact, most of the SRTUs would have finished with profits but for the payment of these taxes.

42. A broad comparison of financial performance before and after tax in respect of selected SRTUs for the year 1994-95 is given below:

**Comparative Financial Performance of SRTUs in 1994-95**

(Rs.crore)

| SRTU | Average fleet | Profit/Loss after tax | Total Taxes (MV Tax/ Passenger tax | Profit/Loss Before Tax |
|---|---|---|---|---|
| Maharashtra | 15548 | 39.83 | 236.66 | 276.49 |
| Andhra Pr. | 15248 | 12.83 | 126.76 | 139.59 |
| Tamil Nadu | 14946 | -40.02 | 132.97 | 92.95 |
| Karnataka | 10086 | -69,65 | 104.44 | 34.79 |
| Gujarat | 8956 | -77.54 | 108.15 | 30.61 |
| Uttar Pr. | 8130 | -35.62 | 80.31 | 44.69 |
| Rajasthan | 4470 | 22.65 | 57.51 | 80.16 |
| Haryana | 3800 | - 3.12 | 109.24 | 106.12 |
| Madhya Pr. | 2615 | -36.13 | 19.58 | -16.55 |
| Punjab Rways | 2369 | - 9.42 | 45.39 | 35.97 |
| PEPSU RTC | 1064 | - 0.70 | 25.12 | 24.42 |
| Himachal Pr. | 1668 | -32.00 | 34.83 | 2.83 |
| Goa | 299 | - 3.96 | 1.00 | - 2.96 |
| All SRTUs | 10938 | -372.64 | 1153.95 | 781.31 |

43. There is a net loss of Rs.372.64 crore in respect of 46 SRTUs after taking into account an amount of Rs.1153.95 crore towards the payment of motor vehicle tax/passenger tax paid by SRTUs to the respective State Government. It is seen that 46 SRTUs made a net profit of Rs.781.31 crore before tax.

Contribution to the Plan:

44. The contribution to the Plan by the SRTU is the sum total of retained profit and depreciation fund minus repayments of term loans. Details of contribution by SRTUs during the Eighth Plan

period, both target and the latest estimate are given in the following table :

**Contribution to Plan by State Road Transport Undertakings**

(Rs. crore)

| Item | Eighth Plan | | |
|---|---|---|---|
| | Plan Estimate | Latest Estimate* | Variation |
| Contribution to Plan at 1991-92 rates of fare/prices | -546.01 | 631.94 | +1177.95 |
| Contribution to Plan at current rates (fares/price) | 5721.24 | - 787.22 | -1359.46 |
| Additional Resource Mobilisation(A.R.M.) | 6197.64 | 5394.19 | -803.45 |
| Impact of price increase | 5079.39$ | 6813.35 | +1733.96 |

* Based on Working Group discussions for Annual Plan 1996-97

$ Based on assumed of price increase of 7% p.a.during Eighth Plan.

45. Details of contribution to Plan by different SRTUs during the Eighth Plan period are at Annexure-XIX. It is observed that contribution during VIII Plan at (1991-92 prices) has shown an improvement by Rs.1178 crore. The latest estimate for contribution is Rs.632 crore against the Plan estimate of (-) Rs.546 crore. The improvement is mainly due to improved performance of SRTUs. However, contribution at current levels of fare/prices has deteriorated by Rs.1359 crore - the latest estimate being (-) Rs.787 crore compared to Plan estimate of Rs.572 crore. The main causes for this deterioration are (i) the actual increase in cost

of inputs has been much higher compared to the modest 7% per annum increase assumed while formulating the Plan estimate; the excess cost is of Rs.1734 crore and (ii) shortfall of Rs.803 crore in the ARM over the Eighth Plan estimate of Rs.6198 crore.

46. The above estimates hold good provided there is no change in the Annual Plan 1996-97 estimates. It may be mentioned that passenger fares in a number of States have not been revised since 1992-93. Most of these SRTUs are expected to revise passenger fare after the elections. In that event, there will be a corresponding improvement in ARM, profitability and contribution to the Plan.

47. With regard to ARM, it is observed that revision of passenger fare in States having a larger fleet like Karnataka (with 10,053 buses), Maharashtra (16,658 buses) and Tamil Nadu (15,412 buses) is long overdue. Passenger fares in the States were revised in 1993. Assuming the fare is suitably revised before June, 1996 in these three States, ARM of the order of Rs.425 crore is possible during 1996-97; (Karnataka (Rs. 80 crore), Maharashtra (Rs.125 crore) and Tamil Nadu (Rs.220 crore).

48. Though the original Plan estimate was not achieved, it is observed that some SRTUs have made positive contribution to the Plan. The details of such SRTUs are given below:

(I) SRTUs with Positive Contribution to Plan:

(Rs. crore)

| Name of SRTU | 8th Plan Estimate | 8th Plan Lat. Est. | Variation over Plan Est. |
|---|---|---|---|
| Rajasthan SRTC | 25.23 | 112.78 | + 87.55 |
| Andhra Pradesh SRTC | 656.00 | 652.90 | - 3.10 |
| Haryana Roadways | 213.27 | 38.88 | -174.39 |
| Maharashtra SRTC | 553.46 | 145.48 | -407.98 |

(II) SRTUs with Negative Contribution but Improvement over Plan Estimates:

(Rs. crore)

| Name of SRTU | 8th Plan Estimate | 8th Plan Lat. Est. | Variation over Plan Est.(%) |
|---|---|---|---|
| Gujarat | -210.18 | -126.24 | + 83.94 |
| Kerala | -131.42 | - 76.65 | + 54.77 |
| Himachal Pradesh | -200.18 | -154.15 | + 46.74 |
| Punjab | - 61.09 | - 16.24 | + 44.85 |
| PEPSU | - 61.84 | - 27.69 | + 34.15 |
| North Bengal | - 41.33 | - 22.61 | + 18.72 |
| Bihar | -109.27 | - 96.26 | + 13.01 |
| Assam | - 88.15 | - 79.53 | + 8.62 |
| Tripura | - 21.71 | - 17.58 | + 4.13 |
| Nagaland | - 25.45 | - 23.11 | + 2.34 |

(III) SRTUs with Negative Contribution to Plan and showing Deterioration over Plan estimates:

(Rs. crore)

| Name of SRTU | 8th Plan Estimate | 8th Plan Lat. Est. | Variation over Plan Est. |
|---|---|---|---|
| Manipur | - 7.75 | - 8.88 | - 1.13 |
| Meghalaya | - 1.13 | - 2.86 | - 1.73 |
| Orissa | - 25.41 | - 29.44 | - 4.03 |
| Mizoram | - 17.63 | - 22.09 | - 4.46 |
| Calcutta STC | - 26.67 | - 32.21 | - 5.54 |
| South Bengal | - 4.36 | - 13.67 | - 9.31 |
| Arunachal Pradesh | - 7.31 | - 17.52 | - 10.21 |

| | | | |
|---|---|---|---|
| Sikkim | - 1.46 | - 11.89 | - 10.43 |
| Goa | 6.82 | - 8.57 | - 15.39 |
| Madhya Pradesh | 8.62 | - 19.89 | - 28.51 |
| Jammu & Kashmir | - 74.66 | -103.31 | - 28.65 |
| Karnataka | 164.36 | -248.05 | -412.41 |
| Uttar Pradesh | 273.46 | - 54.09 | -327.55 |
| Tamil Nadu | -211.27 | -524.73 | -313.46 |

Additional Yield from Fare Revisions(ARM)

49. As stated earlier, there has been a shortfall of Rs.803 crore in the revenue from fare revisions over the Plan estimate of Rs.6198 crore. SRTU-wise details of ARM target and likely achievement during Eighth Plan are given at Annexure-XX. Despite the overall deterioration, some of the SRTUs are likely to exceed their targets. The details of selected SRTUs who have exceeded the targets and also those lagging behind are given below:

(a) SRTUs which exceeded the ARM Target

(Rs. crore)

| SRTU | 8th Plan Target | 8th Plan Lat. Est. | Improvement |
|---|---|---|---|
| Rajasthan | 163.30 | 315.36 | +152.06 |
| Maharashtra | 790.00 | 934.34 | +144.34 |
| PEPSU RTC | 60.68 | 80.74 | + 20.06 |
| Uttar Pradesh | 620.75 | 634.83 | + 14.08 |

(b) SRTUs Lagging Behind the ARM Target

(Rs. crore)

| SRTU | 8th Plan Target | 8th Plan Lat.Est. | Variation |
|---|---|---|---|
| Karnataka | 771.44 | 427.84 | -343.60 |
| Tamil Nadu | 867.00 | 536.91 | -330.09 |
| Haryana | 268.90 | 196.23 | - 72.67 |
| Kerala | 284.70 | 221.37 | - 63.33 |

| | | | |
|---|---|---|---|
| Himachal Pradesh | 88.58 | 32.13 | - 56.45 |
| Gujarat | 393.84 | 344.58 | - 49.26 |
| Punjab | 123.55 | 98.85 | - 16.24 |

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50. It is seen that the Karnataka with ARM deficit of (-) Rs. 343.60 crore and Tamil Nadu with (-) Rs. 330.09 crore are the important SRTUs with larger fleet which show poor efforts in ARM . SRTUs which have not raised passenger fare since 1992-93 are Arunachal Pradesh (last fare revision on 1.8.1992), Sikkim(10.11.1992), Maharashtra(10.1.1993), Karnataka(18.2.1993), Manipur(1.4.1993), Gujarat(8.4.1993), Nagaland(1.6.1993), Goa(1.10.1993), Haryana(8.10.1993), Tamilnadu(1.12.1993). De tails of fare structure prevalent in different SRTUs are at Annexure-XXI.

Suggested Policy Measures for Improving Performance:

51. In order to improve in the performance of State Road Transport Undertakings, the following policy measures are suggested for consideration:

(i) Government should reimburse the losses suffered by SRTUs on account of grant of concessions to students and other sections of the society and operation on uneconomic routes as decided by the Government.

(ii) Rationalisation of taxes paid by the SRTUs.

iii) Evolving an automatic fare revision formula to compensate SRTUs for increase in cost of inputs over which these undertakings have no control.

(iv) While Government should provide level playing field for SRTUs to effectively face the competition from private bus operators, these undertakings should set standards of behaviour for improvement of customer services and their own performance, both physical and financial.

(v) The increase in competition from private operators and consequent loss in load factor etc., suffered by the SRTUs make it necessary for them to formulate suitable marketing strategy to win back the customers weaned away by the private operators. Introduction of special services as required by the customers is an example of such a strategy. This will also help SRTUs to usefully deploy a part of excess staff. Training of manpower and their deployment in activities requiring additional staff would also help in reducing the number of excess staff. Side by side, efforts need to be made to offer VRS to trim the surplus manpower.

(vi) Last, but not the least, efforts need to be continued to further improve the physical performance of SRTUs through route rationalisation, higher vehicle productivity, staff productivity, fuel efficiency etc., and reduction in cost of operation. This is feasible through management efforts and the cooperation of the labour.

**Projected Programme of SRTUs and its Funding during the Ninth Plan**

52. At the beginning of the VIII Plan, the 46 SRTUs had a fleet strength of 97,619. On the bsis of exercises done in the Planning Commission in consultation with the SRTUs, the fleet strength at the end of 1995-96 works out to 1,02,168. It is estimated to increase marginally to 1,02,218 by the end of VIII Plan. Accordingly, the net addition to the fleet of the SRTUs during the Plan works out to 4599.

53. The SRTUs are expected to purchase 57,282 buses during the VIII Plan. Of the new buses purchased during the Plan, 53,242 were on replacement account. Thus the addition to the fleet has been small on account of constraint on resources and the Government policy to involve private sector in the passenger road transport industry for meeting the incremental traffic demand.

**Augmentation of Buses:**

54. During the VIII Plan, Planning Commission issued guidelines to the States and SRTUs not to expand their fleet except in difficult areas where private sector is hesitant to bring in appropriate investment. These difficult areas are the hill areas and the north-eastern States. This policy is expected to continue in the IX Plan. On this basis, on an average, an annual increase of 1,000 buses could be assumed for the IX Plan

period; the total augmentation in 5 years, thus, would be 5000 buses(Alternative-A).

55. Considering the historical perspective and the expansion requirement of SRTUs which are able to fund the purchase of buses from their internal and extra budgetary resources, it was felt that these undertakings would be able to expand their fleet at the average rate of 3% per annum during the plan period. As regards other SRTUs which do not have sufficient funds for expansion, the Sub-Group suggested annual growth at the rate of 2% of their fleet. On this basis, the requirement of augmentation(Alternative-B) would be as follows:

| Item | Number of Buses |
|---|---|
| (1) Total fleet at the end of 1996-97 | 1,02,218 |
| (2) Fleet of SRTUs which have their own resources to finance the purchase | 78,900 |
| (i) Additional buses at the rate of 3% of above per annum | 2,367 (say 2,400) |
| (3) Fleet of other SRTUs | 23,318 |
| (ii) Additional buses at the rate of 2% of above per annum | 466 (say 500) |
| (4) Total buses for augmentation per annum(i+ii) | 2,900 |
| (5) Augmentation during IX Plan | 14,500 |

**Replacement of Buses:**

56. At present, SRTUs are following different norms for replacement of their buses. The replacement policy is based either on 'distance covered' or the 'age of the bus'. Statement at Annexure XXII gives replacement norms followed by the various SRTUs in the country.

57. In the absence of information on projected replacement from each of the SRTU, the Group decided to adopt the age norm of 8 years to work out the replacement needs of SRTUs. Given the projected fleet of 1,02,218 at the end of 1996-97 and having regard to the assumption aforesaid, the annual replacement requirement works out to 12,777.

**Projected Purchase Programme of Buses:**

58. The total requirement of buses for expansion and on replacement a/c by the SRTUs, year-wise during the IX Plan are estimated under 2 alternatives as discussed above.

**Infrastructure Development:**

59. Besides purchase of buses, SRTUs are required to develop infrastructure through purchase of land, plant and machinery for the workshops, construction of depots and bus stands. The Group noted that Andhra Pradesh SRTC has taken a lead in the matter of privatisation of cleaning and sanitary work at bus stations, sweeping and washing of buses, management of lounge, cafetarias etc. Andhra SRTC has also given contract to handle

parcel services at bus stations to a private party. This has helped them to increase the amenities to passengers without employing additional staff. The bus stations constructed by them also earn revenues through lease of shops etc. The Group strongly feels that other SRTUs should emulate Andhra SRTU and privatise the activities and mobilise additional resources. If this is done, the expenditure on infrastructure development could be retained at the current level; the various SRTUs are expected to spend around 10% of their investment on buses towards infrastructure development. The same level of expenditure has been retained for infrastructure development during the IX Plan under Alternativ-A.

60. Some of the members mentioned that a few of the large undertakings are presently spending only 8% of their 'investment on buses' towards infrastructure development. It was, therefore, decided to work out the requirement for infrastructure at a lower rate of 8% as above under Alternative-B.

**Requirement of Funds:**

61. SRTUs need funds for (i) purchase of buses, (ii) development of infrastructure. The cost of a bus in 1995-96 was Rs.7.5 lakh. As per the representative of the Planning Commission, the price increase be taken at 7% per annum; thus a standard bus would cost about Rs.8 lakh in 1996-97, Rs.8.59 lakh in 1997-98, Rs.9.19 lakh

in 1998-99, Rs.9.83 lakh in 1999-2000, Rs.10.52 lakh in 2000-2001 and Rs.11.26 lakh in the last year of the IX

Plan. The Group has worked out the funds requirements under two scenarios namely, (i) at 1996-97 (constant prices) (ii) at current prices assuming a flat 6% increase per annum during the IX Plan. The fund requirement under the two Scenarios has been worked out, with details as follows:

(Rs.crore)

| Item | Estimated Cost | |
|---|---|---|
| | Alt(A) (Based on minimum growth in fleet) | Alt(B) (Based on 3%/2% growth in fleet) |
| At Constant Prices(Scenario-I) | | |
| (A) Purchase of Buses | | |
| (1) Replacement of 63,885 buses @ Rs. 8 lakh per bus. | 5,111 | 5,111 |
| (2) Augmentation 5,000(A)/ 14500(B) buses @ Rs.8 lakh per bus. | 400 | 1,160 |
| Sub-Total | 5,511 | 6,271 |
| (B) Development of infrastructure 10% of 5,511(A) 8% of 6271(B) | 551 | 502 |
| (C) Total requirement | 6,062 | 6,773 |
| or say | 6,100 | 6,800 |

At Current Prices(Scenario-II)

| | | |
|---|---|---|
| (A) Purchase of Buses | | |
| (1) Replacement of 63,885 buses @ Rs.8 lakh per bus in 1996-97 assuming 7% escalation per annum thereafter. | 6,311 | 6,311 |
| (2) Augmentation 5,000(A)/ 14500(B) buses @ Rs.8 lakh per bus in 1996-97 & assuming 7% escalation per annum thereafter. | 494 | 1,432 |
| Sub-Total | 6,805 | 7,743 |
| (B) Development of infrastructure 10%(A)/8%(B) of investment on buses as above. | 680 | 619 |
| (C) Total requirement | 7,485 | 8,362 |
| or say | 7,500 | 8,400 |

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The Statement at Annexure XXIII gives the details of buses to be purchased, the requirement of funds at constant and current prices year-wise during the IX Plan.

**Sources of Funding:**

62. The present sources of funding the programme of SRTUs comprise (i) Internal Resources/Contribution to Plan of SRTUs, (ii) State Government contribution, (iii) LIC loans, (iv) IDBI loans and (v) Loans from Commercial Banks/Road Transport Finance Corporations in Tamilnadu, Kerala, and Karnataka, State Financial Corporations, Leasing Finance in some States, Public

Deposits in Maharashtra etc. In the absence of any Government guidelines on the amounts to be made available from these sources in the IX Plan, the Group decided to adopt a conservative approach and generally use the current levels of amounts available from each of these sources. However, based on larger availability of loan from LIC in 1995-96, a step up in annual releases has been assumed in the case LIC loans during the IX Plan.

63. Source-wise availability of funds during the IX Plan is estimated as follows:

**Estimated Availability of Funds - IX Plan**

(Rs.crore)

| Item | IX Plan Estimate |
|---|---|
| (1) Net Internal Resources at current prices/fares | 4,950 |
| (2) State Government Contribution @ Rs.20 crore per annum | 100 |
| (3) LIC Loan @ Rs.70 crore per annum | 350 |
| (4) IDBI Loan | 500 |
| (5) Others(including loans from State Road Transport Finance Corporations, Lease Finance etc.) | 900 |
| | 6,800 |

64. Separate Net Internal Resources(IR) under Alternative(B) have not been worked out. It has been as-

sumed that generation of net IR under Alternative(B) would not vary much since operational cost is expected to rise faster compared to the assumed rate of 6% after the elections. Even otherwise, any increase in IR would be adjusted against the loans to be raised by SRTUs which are rather expensive.

**Estimated Deficit in Resources:**

65. Given the estimated requirement and the likely availability of funds as discussed in the foregoing paras, SRTUs are likely to face a shortfall in their resources as given below:

(Rs. crore)

| | | Alt.A | Alt.B |
|---|---|---|---|
| (1) | Requirement of Funds | 7,500 | 8,400 |
| (2) | Availability of Funds | 6,800 | 6,800 |
| (3) | Deficit | 700 | 1,600 |

66. Having regard to the projected deficit in resources, it is essential to consider innovative measures to mobilise additional funds to sustain the projected investment programme which, in the view of the Group, is the minimum essential and must be implemented.

**Measures for Additional Resource Mobilisation:**

67. The Group considered several options for addi-

tional funds. The following suggestions are made for the consideration of the Government.

(1) Reimbursement of losses on account of concessions to students and other sections of the society - It is felt that the State Government should consider sympathetically the case for reimbursement of losses on account of various concessions as decided by the State Government. This could bring in a minimum of additional resource of Rs.400 to Rs.500 crore to the SRTUs per annum.

(2) Privatisation of activities at bus stands also could bring in additional revenues to the SRTUs, though it is difficult to quantify these at this stage.

(3) The State Government should consider allowing the SRTUs development of properties on the surplus land available with them.

(4) On the pattern of State Road Transport Finance Corporations in Tamilnadu, Kerala and Karnataka, other States should consider setting up such Corporations to give loan assistance at reasonable rates to their SRTUs. The SRTUs could also resort to lease financing for new buses. This would save considerable capital investment to be made by SRTUs as envisaged in our calculations.

## ASSESSMENT OF INTERNAL RESOURCES

68. As already noted, the financial health of majority of the SRTUs is not satisfactory. It is expected that during the VIII Plan, the contribution by the SRTUs to the plan at current levels of fares and prices would deteriorate by Rs. 1359 crores, primarily on account of a) higher increase in the cost of operation compared to the assumed rate of 7 percent per annum and b) slippage in Additional Resource Mobilisation (ARM) to the extent of Rs. 803 crore during the Plan period.

69. As at present, Planning Commission have not come out with any guidelines with regard to anticipated rate of inflation during the IX Plan. In the absence of these guidelines and going by the existing policy on the expansion of fleet by the SRTUs which is restricted to the requirement of difficult areas in which private sector may be hesitant to invest , the Group has made the following assumptions for estimating the Internal Resources (IR) of PSRTUs in the 9th Plan:

(i) The volume of operations (passenger kms) is worked out, taking into account the average fleet of buses in each year of the 9th Plan and assuming an increase of 5 kms annually in vehicle productivity.

ii) Cost escalation has been assumed at 6 per cent per annum : the estimated cost per km on this basis works out to 965 paise in 1996-97, the last year of the VIII Plan.

iii) Fare revision is also assumed at 6 percent per annum for working out ARM by the SRTUs.

iv) Considering that the passenger fares have not been increased by a number of SRTUs since 1992-93, it is expected that the

possibility, the estimated ARM in the current year 1996-97 would correspondingly increase, reducing the estimated losses from Rs. 716 crore to around Rs. 300 crore. This revised level of losses has been used as the basis for projecting the losses in the 9th Plan and for arriving at net internal resource generation by SRTUs.

70. The estimates of buses, vehicle productivity and volume of operations during each year of the 9th Plan have been worked out in consultation with the Transport Division, Planning Commission and are given below:

| Year | Average number of buses | Vehicle productivity (kms) | Volume of operation (lakh kms) |
|---|---|---|---|
| 1997-98 | 103000 | 288 | 108270 |
| 1998-99 | 104000 | 293 | 111220 |
| 1999-2000 | 105100 | 298 | 114320 |
| 2001-2002 | 106100 | 303 | 117340 |
| 2002-2003 | 107200 | 308 | 120510 |

71. On the basis of the above parameters and the assumed fare revision profile as under para 2(iii) above, the gross ARM during the 9th Plan works out to Rs. 9880 crores. An alternative scenario has been worked out assuming fare revision by the SRTUs at 10% per annum during the plan period. Under this alternative scenario, the estimated gross ARM increases to Rs. 16,125 crore. Year-wise details of ARM under the 2 alternative scenarios may please be seen in the statement at Annexure-XXIV. These details were worked out and made available by Shri S.C. Vohra, Member of

the Group from the Planning Commission.

**Net Internal resources**

72. Adjustments to the Gross IR are required to be made for (i) impact of cost increase during the 9th Plan, which has been estimated at 6 per cent per annum (Total Rs. 3430 crores); (ii) Net losses in each year of the Plan after adjustment for likely fare revision in 1996-97; the net loss is worked out at Rs. 300 crore p.a or Rs. 1500 crores during the IX Plan.

73. Accordingly, the Net Internal Resources or Contribution to the Plan by the SRTUs during IX Plan would work out as follows, under the two scenarios :

(Rs. Crore)

| Item | Scenario I (Assuming 6% fare hike p.a.) | Scenario II (Assuming 10% fare hike p.a.) |
|---|---|---|
| 1. Gross Internal Resources | 9,880 | 16,125 |
| 2. Less Cost Increase during IX Plan at 6% pa | 3,430 | 3,430 |
| | 6,450 | 12,695 |
| 3. Less Net Losses during IX Plan as in para 5. | 1,500 | 1,500 |
| 4. Net Internal Resources | 4,950 | 11,195 |

74. The Working Group felt that political expediencies of the State Governments would favour the first alternative; alternative II is not feasible under the existing procedure followed for revising the fares. Further, empirical evidence clearly brings out that cost increase is generally higher compared to increase in operating revenues of the undertakings. Accordingly the Working Group decided to adopt scenario I for the purpose of determining the funding of the IX Plan programme of the SRTUs.

Depreciation Reserve Fund(DRF) as a Source of Funding Replacement of Buses

75. Commercial entities are expected to charge depreciation on their assets to their P&L A/c during the accounting period. The charge on depreciation has two facets; it is both an expenditure as well as a resource for the undertaking. State Road Transport Undertakings (SRTUs) are expected to set apart funds on this account for financing replacement of over-aged buses. Some of the financially sound SRTUs even set apart additional funds through additional depreciation to make available sufficient resources for replacement to meet inflation in the prices of assets.

76. Despite consistent improvement in the physical productivity, the SRTUs in general have been losing on account of (i) social burden they carry in the form of concessional fares and operation on uneconomic routes; (ii) Uneconomic fares: The fare revision proposals are to be submitted to the State Government concerned. The time usually taken from the proposal-stage to the clearance by the State Government ranges between 18 to 24 months, with the result the SRTUs have to contend during the interregnum with higher cost and constant fares; (iii) High cost of operation on account of excess staff employed by these undertakings and the high interest liability on the loans raised from financial institutions since contribution from the Central

and State Governments is stopped. As a result of losses, most of the SRTUs are not in a position to set apart funds for depreciation on buses and other assets. However, since these undertakings are maintaining accounts on commercial principles, they do show an entry for depreciation unsupported by any actual fund. For all practical purposes, therefore, the entry for depreciation is "notional" in the case of losing undertakings. In the absence of DRF and the Planning Commission's ban on State Government's contribution to their SRTU, the replacement of over-aged buses has slowed down. Against the target of 64,194 buses, only 53,242 are expected to be replaced during the VIII Plan.

77. The issue, therefore, is how do the losing SRTUs without DRF replace their buses? This issue was discussed at length by the Group. The unanimous view of the Group is that if the Government does not contribute its capital to the SRTU and the SRTU has no real DRF, the resources of the SRTUs need to be augmented as suggested below:

(i) Most of the SRTUs are performing badly compared to a few efficient ones; it indicates the need and feasibility of improving their physical performance. Therefore, these SRTUs need to make concerted efforts to reduce their cost of operation through continued efforts at improving their physical productivity. This will contain the quantum of their losses.

(ii) SRTUs are losing heavily on concessions to

students and other sections of the society. They are also losing in their operations on uneconomic routes under the State Government's decision. The undertaking has no control on the losses incurred under this Head. It would, therefore, be appropriate that the concerned State Government reimburses such loss to their SRTU. This will improve their financial health and facilitate creation of DRF.

(iii) Short of capital contribution to the SRTUs, State Governments should promptly clear the proposals for fare revision if justified for increasing cost of inputs. The time gap between the submission of the proposal by the SRTUs and clearance by the State Government needs to be drastically brought down. The Group felt that the SRTUs should evolve an automatic fare revision formula duly approved by the State Government to compensate for the increase in the cost of inputs, such as Dearness Allowance to staff, hike in disel price, tyres etc over which the undertaking has no control.

(iv) State Governments should consider setting up a separate financial institution as in Tamilnadu, Kerala and Karnataka to provide loans to the SRTUs to augment their fleet and replace their over-aged buses and develop infrastructure. The issue regarding setting up of Road Transport Finance Corporations has been examined separately, in depth in the following paras.

Institutional Finance for State Road Transport Undertakings

78. The public sector passenger transport came into being after Independence with the enactment of Road Transport Corporation(RTC) Act, 1950. The basic objective of setting up State Road Transport Corporations was to provide an efficient, economical and coordinated system of road transport services.

79. The RTC Act envisages provision of capital contribution in the form of loan assistance to the Corporations through State and Central Government in an agreed ratio; this was to help them augment their fleet for providing efficient and economical services to the people. Subsequently, the State and the Central Government agreed to contribute to the Corporations in the ratio of 2:1. The capital contribution helped the SRTUs to grow; their share in public transport grew to 40% by 1983. Then the decline set in and by 1992, their share had come down to around 30 percent. The growth of SRTUs suffered further when (i) the criteria for Central Government contribution was changed and linked to productivity of the Corporation and (ii) States were advised to induct private sector in the road transport industry. The following policy guidelines were announced by the Planning Commission:

(1) For the year 1987-88, the release of capital loan assistance will be only to such SRTUs which have earned a net profit during 1986-87 or which have brought down their net losses by 20% or more during the year as compared to the previous year i.e. 1985-86 and

(2) Release of capital loan assistance to the SRTUs in respect of the year 1988-89 & onwards will be only to those STUs which do not incur any net loss or breakeven. Subsequently, the policy of Central Government contribution was dispensed with. Even with regard to State contribution to the Corporations, it was mentioned that budgetary support for expansion of bus fleet would be confined to exceptional areas only.

(3) SRTUs should gradually make room for private sector except in cases where private sector is unlikely to come.

80. The above guidelines had an adverse impact on the Corporations; the capital contribution from State governments was stopped except for SRTUs operating in difficult areas. Moreover, as per the existing guidelines, the replacement of over-aged buses is required to be funded from Depreciation Reserve Fund (DRF). Since most of the SRTUs are incurring losses, they are not in a position to set apart funds for DRF. The entry in the books of accounts for depreciation is only notional. With freeze on capital contribution from the Central and State governments and the non-availability of funds under DRF, SRTUs are not in a position even to

replace the over-aged buses. Consequently, the breakdowns of buses have increased, operational costs have gone up resulting in higher losses for undertakings.

81. It is observed the financial help to the road transport Corporations has been eroded on account of (i) losses incurred by the SRTUs (ii) non-availability of capital contribution from central and state governments (iii) uneconomic fare structure which is decided by the concerned State Government and the mismatch between the cost of operation and the revenue earnings of these undertakings. (iv) Operation on uneconomic routes and concessions to various categories of people under government orders and (iv) high incidence of taxation. At present, therefore, SRTUs are in a difficult financial position. The normal source of funds for majority of them have dried up. These undertakings are not in a position to generate adequate internal resources; they do not get Government capital contribution; loans from IDBI are difficult since the institution insist on guarantees from the Corporations. Some of the undertakings have resorted to lease finance. This is, however a costly source of finance which the SRTUs are not in a position to service. It has, therefore, become essential to consider alternative sources of funds for these undertakings.

82. Tamilnadu have set up State Passenger Road Transport Finance Corporation to provide soft loans to the

SRTUs. The Corporation is assisting 20 passenger road transport companies. Recently, Kerala and Karnataka States also set up a Road Transport Finance Corporation to assist their SRTU.

83. The Working Group obtained the details of Tamilnadu Development Finance Corporation(TDFC). It was set up in March 1975 under the Companies Act. It is registered with Reserve Bank of India as a hire purchase company. The company accepts deposits from the public; it also received deposits from the Government and local bodies. From the deposit base of Rs.1.35 crore in 1975-76, the aggregate deposits stood at Rs.319 crore at the end of 1994-95. Besides, it receives short term deposits from Government and public sector undertakings. It has a share capital of Rs.15.34 crore including Rs.7.9 crore from the Government and Rs.7.44 crore from the Transport Corporations in the State.

84. TDFC uses its funds for lending to State Transport Corporations for financing their programme of procurement of buses, infrastructural development and for meeting their working capital requirements. At present, it charges interest of 17%, allowing rebate for prompt payment; the effective rate works out at 15.5%. The recovery of the loan is in 60 monthly instalments. Over the years, State Transport Undertakings in Tamilnadu have been able to purchase 21,500

buses through funds arranged by TDFC.

85. TDFC has been making profits right from its inception. In 1994-95, the net profit after tax was Rs.52,00,000 which is estimated to increase to Rs.2.58 crore during 1995-96. The Working Group feels that other States should also consider setting up captive Finance Corporations for rendering financial assistance to their respective SRTU. Considering the company form of organisation attracts the disability of limiting mobilisation of its deposits to 10 times of net-worth as per RBI guidelines; the Working Group suggest that States could consider establishing Transport Development Finance Corporation on the pattern of IDBI under a separate Act. RBI guidelines do not apply to such an entity.

86. The issue of setting up Transport Development Finance Corporation at the central level was also examined. However, the Working Group feels that State level Corporation be preferred inter alia for the following reasons:

(a) State Government's representative on the Board of the Corporation could ensure implementation of the Government policy in the matter of providing transport services through channelisation of funds to SRTUs as per their requirement;

(b) Since the major source of funds for such Corporations is deposits, State level Corporations could

provide better service to the depositors. Besides, on account of its branch offices in the State, it could mobilise larger resources and tune its deposit schemes to suit the requirements of the depositors. It could also mobilise deposits from State PSUs. The matter with regard to Apex Transport Finance Corporation could be considered for re-financing State level Corporations. Alternatively, re-financing function could be entrusted to an existing Financial Institution such as IDBI.

87. The Working Group reiterates the need for State level Finance Corporation since the SRTUs in general are facing the resource crunch. This has become essential particularly after the issue of guidelines by the Planning Commission stopping State Governments' from contributing capital to their respective SRTU.

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## CHAPTER VI

## ROAD SAFETY

With the growing density of vehicle on Indian roads and the consequent increase in the number of accidents and fatalities, road safety is becoming a major issue of the road transport sector. In the last couple of years, more than 60000 people have lost their lives each year. Over the years, the number of accidents and number of fatalities have been rising making India one of the most unsafe countries to travel on roads.

2. Analysis of road accidents suggest that there are many reasons for this alarming trend of rising accidents. These vary from poor condition of the roads, poor condition of the vehicle, lack of traffic education, poor driving skills and lack of traffic awareness among the public, etc., in additon to natural conditions, such as, poor sight, rains etc.

3. Road safety is a multi-disciplinary area where engineering, education and enforcement come into inter-play. Moreover, it has to cover all categories of road users from drivers to passengers to pedestrians.

4. Considering the importance of the issue and the growing awareness, several efforts have already been undertaken in the 8th Plan in enhancing road safety. The focus of attention of the programmes were mainly in terms of educating the masses through

distance education, television and other media and appropriate advertising campaigns. Efforts were also made to undertake road safety education to the schools as well. The following are some of the areas which need specific attention relating to road safety:

(a) Ensuring proper road signs and road marks.

(b) Systematising the analysis of various accidents.

(c) Computerisation of traffic licensing system.

(d) Enhancing the provision of accident distress facilities, such as, cranes, ambulances, etc., at least in the accident prone stretches of national highways and other busy corridors.

(e) Upgradation of primary health centres with ambulance facilities on critical sections of highways.

(f) Involving the local bodies, such as, Panchayats, Municipalities in ensuring reflectors on non-motorised vehicles, such as, bicycles and bullock carts.

(g) Ensuring at least 10 mtrs. wide carriage-way for highways having more than 10000 pasenger car units (PCUs) and 15 mtrs. with separators on NH with more PCUs.

(h) Widening of bridges to conform to the highway carriages.

(i) Upgradation of safety monitoring practices in tune with those prevalent in advanced countries, through induction of modern technology, such as, scanners and communication facilities.

(j) Creating highway facilities which could lessen fatigue on the part of drivers.

(k) Creating proper facilities for training of drivers

including retraining (refresher training) of drivers involved in accidents.

(1) Massive efforts in training road users on road safety issues involving local bodies, police and other concerned agencies.

5. Operation of the national highway patrolling scheme needs to be strengthened in tune with the increasing traffic. Moreover, as it is operational today, the scheme envisages the State Governments to fund the programme and get the refund from the Centre. In view of the shortage of funds with the State Governments, it is proposed that Centre may provide the finances in advance. It is proposed to examine the feasibility of involving major vehicle manufacfurers by introducing the scheme of "adopting" a highway or a stretch of highway under the scheme. The manufacturers may take up a stretch and put up sign boards, paintings, dedicated telephone lines, maintain the cranes and ambulances etc. While the Central Government will provide the capital equipment, the manufacturers should bear the other expenses in lieu of using the highway facilities for their advertisement.

6. Proper traffic planning, particularly in urban areas, is also important for road safety. This involves, among other things, provision of truck terminals, inter-state bus terminals, parking facilities etc. In the emerging megapolis, provision of these facilities via modern technologies assume significance not only because of the alarming growth of vehicle population, but

also because of the shortage of land. This calls for adopting modern technology like building multi-storeyed parking lot and bus terminals etc. which are ideal candidates for private sector participation, multilateral assistance and foreign investment. Another area which deserves attention is relating to highway signalling system. The existing system of signalling is very often quite old and illegible. In view of the increasing traffic, particularly night traffic, illuminated overhead signalling in all major corridors would help the uninterrupted flow of traffic and facilitate reduction in accidents.

7. As far as drivers' training is concerned, the need for developing modern training facilities need not be emphasised. Under the scheme, the Central Government had formulated a programme of giving simulators to a few States which have been found quite useful. It is suggested that this scheme may be extended to cover all States in the 9th Plan. Despite the constraint of resources, the Working Group strongly feel that at least one simulator per State need to be provided. An outlay of Rs.25 crore is recommended for this purpose.

8. In order to streamline issue of driving licence on a national basis which will facilitate identification of the driver in case of accidents etc., the Working Group proposes introduction of electronic card based driving licence. This sort of driving licence, through the system of punching, facilitates defaulting drivers to be identified easily. In case of an offence, the card would be returned to the driver only after undergoing the prescribed refresher training. This would make the drivers

more responsive to the road safety which will help in reducing the number of accidents.

9. As far as generating public awareness is concerned, the need for involving institutions, such as, NCERT, through school curricula, organisations such as National Cadet Corps, Central Schools etc. is proposed. Moreover, voluntary agencies are to be roped in in a big way. An assistance scheme is provided in bringing out literature and equipment on road safety by different agencies.

10. The efforts on road safety need to be coordinated properly. At present, there are two different Divisions in the Ministry working on the issue of road safety. This dichotomy has been artificially brought in, considering that the safety aspect relating to roads per se is something different from the safety aspect relating to road transport. This dichotomy has not only created overlapping of schemes and programmes, but also generated many grey areas. While road safety, as far as those affected are concerned, is a single issue though complex. It has to be coordinated by a single agency. This calls for pooling of resources of the two divisions in the Ministry and strengthening road safety programme in tune with the emerging requirements. This division can in turn coordinate the efforts at the national level with the various insitutes and the State Governments. The formation of the strengthened division will need extra funds and the Working Group suggests Rs.5 crore for the same.

11. Similarly, at the State level also, there is the need for such a well coordinated effort on aspects relating to road safety. This is particularly imperative because the implementing agencies are very often under the State Government. For enhancing and strengthening the State/field level set up, a provision of Rs.30 crore as grants-in-aid is provided by the Working Group.

12. To sum up, the Working Group recommends an outlay of Rs.102 crore for the various schemes proposed above to improve road safety in the country.

| | Scheme | Proposed Outlay (Rs./Crores) |
|---|---|---|
| (i) | Strengthening of road safety wing. | 5.00 |
| (ii) | National highway patrolling scheme. | 25.00 |
| (iii) | Grants-in-aid to States/UTs for road safety programmes. | 30.00 |
| (iv) | Training Programme - | |
| | (a) Training of Instructors of driving skills. | 5.00 |
| | (b) Training of drivers in organised sector. | 2.00 |
| (v) | Road Safety Equipment. | 25.00 |
| (vi) | Publicity. | 10.00 |
| | Total: | 102.00 |

13. In a nutshell, road safety has become an issue of

enormous significance. Growing vehicle population and the acceleration in the growth of accidents and fatalities and no let up of this trend in the near future, have already made the situation quite alarming. Considering the importance of this problem, a well coordinated effort for at least reducing the problem has to be thought of. Different programmes relating to the engineering aspect of roads and vehicles, the educating aspect by involving institutions, school, police and voluntary agencies and the implementing aspects by strengthening agencies, such as, police, tribunals and even vehicle manufacturers are being thought of for

These activities involve lot of research studies, provision of equipment and facilities in a country of continental dimension. This in turn requires huge amount of funds. However, being fully aware of the limitations of Central finances, the Working Group is constrained to recommend only Rs.102 crores for these programmes. However, assuming a positive response from the State Governments, the vehicle manufacturers and other agencies, the budgetary funds could be supplemented which would facilitate improving safety on Indian roads.

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# CHAPTER-VII

## PRODUCTIVITY AND HUMAN RESOURCE DEVELOPMENT

### PRODUCTIVITY IN TRANSPORT

Productivity in transport is basically judged on the basis of resource utilisation and input efficiency and the kilometres operated by a vehicle per day, manpower employed for certain number of kilometres operated, consumption of spare parts, petroleum products and tyres occupy an important position in evaluating transport performance. While in the case of goods transport, the tendency is to operate newer vehicles on longer routes and phase them slowly to shorter distances, in the case of bus transport which is essentially route-bound, scheduling of vehicles becomes very important. Although it is estimated that over 25 lakh heavy vehicles operate in the country, in view of the industries fragmentation and wide dispersal of ownership, the authentic figures available pertain to the public sector road transport corporations in India.

2. Traditionally, the productivity and performance of road transport corporations is judged on the basis of the physical than financial performance parameters. This is mainly because the financial performance depends heavily on the fares which are sanctioned by the government and the social costs with which the organisations are obliged to bear. It is therefore not unusual that an organisation which has very good physical performance may end up in losses if its fares are pegged down below economic levels. An overview of the performance of STUs in the country

show that during the last ten years, there has been a steady increase in physical performance and productivity. For instance, vehicle utilisastion, which is a measure of the number of kilometres operated per day - has gone up from 250 kms. to 283 kms. The fleet utilisation which is a ratio of the number of vehicles held to the number of vehicles operated has gone up from 80% to 90% in respect of input efficiency, since conservation of petroleum production is an important matter, the kilometres per litre of diesel oil has gone up from 3.6 to nearly 4.3. There is, therefore, considerable increase in performance which was basically because of higher productivity. The National Productivity Council, ASRTUs have instituted productivity awards to STUs in order to recognise and encourage better performance.

3. In terms of financial performance, however, STUs have not been doing well. It may be mentioned that the concessional passes which STUs have been giving at the behest of Government are estimated to cost over Rs.600 crore thus off-setting the losses incurred. In addition, the latest review of the Planning Commission on the performance of STUs has pointed out that the tax burden of STUs is very high. Hence, while the financial performance of STUs in the books of accounts may reveal losses, when off-setted by concessions, social obligations and taxes, the performance of STUs is well above average.

4. The assistance that STUs will need is mainly in the shape of influencing state governments for periodic revision of fares to economic levels so that they have a wider chance to survival. In addition, training of manpower at all levels, including, drivers, conductors, mechanical staff etc. should be given higher priority and appropriate allocation should be made for this purpose.

MANPOWER PRODUCTIVITY

5. Manpower productivity is judged on the basis of persons employed either per vehicle or for certain volume of operations. In the private sector, where the fleet-size is very low, most of the employees do not attract the provisions of the Motor Trade Workers Act. It is therefore common that workers are on duty for long hours and may not be paid adequate compensation. The only way to obviate such exploitation will perhaps be to reorganise the industry into units operating not less than 25 vehicles. While this will await debate and legislative action, it could only be assumed that better skills and higher education will enable motor trade workers to bargain for higher remuneration even in the unorganised private sector.

6. In the case of STUs, the general norm has been to peg down manpower at around 8 employees per bus and to stretch manpower productivity within the limits of legislation.

7. The wage costs constitute about 38 per cent of the total cost incurred by STUs as per the performance statistics published by the Central Institute of Road Transport for the year 1994-95. The total wage bill in STUs alone was about Rs. 3810.92 crores for the same year. The average manpower productivity went up from 35.31 kms. per employee per day in the year 1993-94 to 37.10 kms. in the year 1994-95. While the increase may not be very significant, the trend is positive and with financial and institutional support, it should be possible for STUs to gain substantial productivity advantages.

**Financial requirement**

8. The Group noted that the main hurdle for improving productivity in the sector is the low levels of educational skills. Inspite of relatively higher compensation, qualified and better skilled manpower is not attracted to the industry at present. In view of the transport sector playing a major role in economic and social development and its contribution to the overall objectives of the plan, the sub-group is of the opinion that an amount of Rs. 200 crores should be set aside during the 9th plan period for encouraging higher productivity and performance. The detailed programmes and schemes will be invited from appropriate institutions for utilising plan allocations to further the objectives of higher productivity.

**HUMAN RESOURCE DEVELOPMENT**

9. The road transport sector and the automobile industry which depends on it are slated for a massive induction of new and higher technologies. So far the technology invasion is by and large confined to smaller vehicles but with the entry of world leaders in automobile manufacturing, the goods and passenger vehicles will soon be the targets for technology upgradation. In order to match the impending innovations, it is necessary to prepare appropriate human resource development strategies. It may be mentioned that the road transport sector is highly labour-intensive and has the capacity to create employment both in terms of volume and quality. In addition, employment opportunities are almost evenly spread across the country without much of concentration in urban centres.

the quality of transport workers in the country and the efforts so far made by the industrial training institutes and polytechnics, while laudable, are nowhere near the requirement. It is therefore necessary to strengthen the existing institutional framework with better teaching skills and equipment in order to attract talented youth to be later absorbed into the industry.

11. It is estimated that there are over 25 lakh heavy vehicles operating in the country of which majority are trucks. Even a rought estimate of four employee per vehicle would put the total employment figure to over one crore. In additon, there are auxilliary trades and employment opportunities in the shape of garages, way-side facilities etc. which may be employing a similar number of people. The bus population is estimated to be over 300,000 while those in STUs constitute just about a third.

12. The table below gives the estimated bus population and the manpower required both in private as well as government sector for the ninth plan.

| Year | Total Bus population 1966-96 trend ('000) | Fleet strength in Govt. held buses ('000) | Manpower* for govt. held buses ('000) | Fleet in private sector ('000) | Manpower** for private buses ('000) |
|---|---|---|---|---|---|
| 1997 | 502 | 131 | 1048 | 371 | 1855 |
| 1999 | 569 | 147 | 1176 | 422 | 2110 |
| 2000 | 606 | 156 | 1248 | 450 | 2250 |
| 2001 | 645 | 165 | 1320 | 480 | 2400 |
| 2002 | 687 | 175 | 1400 | 512 | 2560 |

* 8 staff per bus ** 5 staff per bus

Source : Projections for growth in bus population is taken from the report of the sub-group on traffic forecasts and fleet requirement of road transport

13. The training and education facilities required in the industry will be basically of two types. The first is at the induction levels of basic workers such as drivers, conductors, mechanics etc. The industrial training institutes spread all over the country do have motor mechanics as a trade. However, in view of lack of equipment and even a vehicle to demonstrate much of the education rests at theoretical level and skills are not imparted in the desired level. Provisions should therefore be made to equip the industrial training institutes for developing the trade of motor mechanics since this trade has a large labour potential, what with the burgeoning vehicle population in the country.

14. While the polytechnics and engineering colleges have the discipline of mechanical engineering, efforts will be needed to shape the Institutes to constitute the emerging needs of automobile industry so that adequate supervisory and managerial manpower comes out of these institutes. Appropriate schools should be established in this regard and special funding wherever necessary should be made available.

15. In the case of STUs, appropriate training cells should be established in each undertaking to impart skills required for bus operation. Development of trainers and programmes for identifying them will need higher priority.

16. In the case of drivers, it must be mentioned that this category has the highest potential for employment. Due to lack of adequate facilities and absence of rigour in the licensing system, those coming into the market are indifferently trained and inadequately equipped. Although attempts have been made to encourage setting up of driving training schools, they are few and far between and could not make any impact in the face of the large drivers that are required to drive the burgeoning automobile population. It should be examined whether every industrial training institute should have driving as a trade. Appropriate changes should be made in the legislative framework to absorb such trained drivers. The Institute of Road Transport in Madras has not only developed appropriate curricula but is also running full-fledged driver training centre near Madras. As a private initiative, the country's leading automobile manufacturer, M/s Ashok Leyland, has also opened a driver training centre in Tamil Nadu. It should be possible to encourage the existing institutions not only to help in setting up driver training institutons but also in preparing manuals for trainers and training the driver trainers. In the case of supervisory and managerial personnel, there are several engineering colleges in the country which are offering programmes in transport management and transport engineering. The future supervisors and managers should be coming from these institutes and STUs should be directed to absorb well qualified transport professionals from such institutes.

17. The Central Institute of Road Transport (CIRT) which has been set up almost 30 year ago with the primary objective of spreading management education in the transport sector should be encouraged not only to meet the current needs of STUs but also to help the emerging private sector. As the quality of manpower improves at the induction level, it is expected that more and more institutes of higher learning will be required both for technical and managerial education. The thrust should be to aid and finance existing institutions rather than to create new instititions.

18. Considering the projected high growth in the road transport industry, it is essential to develop human skills to cater to the increasing demand for manpower. The following areas for developing manpower skills would need to be considered.

(1) There is a need for training on issues such as fuel conservation, pollution and road safety through ITI, polytechnics, engineering colleges and other institutions, the curriculum in police training schools should also be revised if necessary in order to make the public authorities an enabling mechanism and help the road transport sector to play its legitimate role as part of social and economic infrastructure.

(2) Apart from the regular training efforts, the new channels of media should be involved in providing distance education on a wide variety of topics ranging from defensive driving to traffic education and pollution control.

(3) A certain percentage of the tax realised from this sector should be ploughed back into training and education so that the productivity and efficiency of this sector could be anhanced.

(4) A certain percentaga of taxes should be assigned for extending traffic eduction to children and identified segments of the society.

(5) The ITIs, polytechnics, etc, are needed to be properly assisted and funded to train the vast manpower required by this sector.

(6) There is a need for continuous training and research in the areas of road safety, transport administration, etc. In this connection, it is required to identify certain existing institutions and give grant so that the proceeds could be utilised to develop manuals, conduct research, organise training programmes and develop softwares on specific topics. For instance, Central Institute of Road Transport has so far been addressing itself to the needs of public sector passenger road transport organisations. CIRT's infrastructure can adequately accommodate the requirements of road safety, goods transport and transport administration not only in terms of training but also in data collection and analysis. Similarly the Institute of Road Transport in Madras which is engaged in driver and driver-trainer training will be the appropriate agency both for training and for preparation of training materials for use in driver training schools across the country.

19. In view of the foregoing, one can easily conclude that there is an urgent need to develop multi-disciplinary skills to match the growing demand for such skills. Considering the constraint on resources, the Working Group does not recommend setting up of greenfield institutions. Instead, it recommends strengthening of the existing institutions in the country imparting training in different skills. For this purpose, an outlay of Rs.10 crore is considered an absolutely minimum to augment the facilities at the existing institutions.

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## CHAPTER-VIII

## RESEARCH AND DEVELOPMENT

Research and development play a vital role in evolving and running an efficient transport system. For formulating transport planning system, availability of adequate and accurate data as well as undertaking periodic research studies on transport planning and problems cannot be overemphasised. Besides, R&D effort aimed at improving technical inputs and productivity in road transport is an urgent necessity.

2. In the context of development of road transport industry on line with the growth of the industry in the world, it is essential to consider upgradation of vehicle technology, improvement of vehicle maintenance systems, improvement of fuel efficiency and minimising vehicle pollution. Lot of work has been done in the recent past on these

aspects. Mention may be made of the studies conducted by Central Institute of Road Transport on "Development of Fuel Efficient Passenger Bus', study done under the aegis of Asian Institute of Transport on "Technology of Road Vehicles", Study on "Revision of Bus Body Specification Etc." by the Standing Committee of the ASRTUs, study on "Vehicle Fleet Modernisation - Road User Charges" undertaken under the World Bank Aid and study on "Modernisation of Vehicle Fleet and Road Infrastructure" commissioned by Ministry of Surface Transport. We discuss the various developments in the following paragraphs.

## 3. UPGRADATION OF VEHICLE TECHNOLOGY

### 3.1 UPGRADATION OF PASSENGER VEHICLES.

The Advisory Board on Energy, Government of India, desired to review the design of chassis and bus bodies so as to have a streamlined design of the bus with an eye on e nergy conservation. As a culmination of this, a project was assigned to CIRT. The CIRT in association with Automobile Research

Association of India (ARAI) have made a project report detailing specifications for various major aggregates to be used in buses and trucks. The matter was further pursued with major chassis manufacturers like M/s. Ashok Leyland and M/s. Tata. Both the vehicle manufacturers have come out with prototype buses nearer to the specification formulated in the project report.

Though a few State Transport Undertakings tried these prototype vehicles, but, however not much significant progress could be achieved partly due to reluctance on the part of STUs to switch over to these new design, perhaps driven by cost considerations. Another possible reason could be the prototype developed mainly meant for city applications. As the STUs do switch moffusil buses after some time to city/town routes, they might have felt that conversion of a standardised design for a particular application to another application may be little difficult. This could be one of the reason for not going in for buses meant for specific requirement.

The design of vehicle could be modular in construction with the following modules. 1. Power Module 2. Control Module and 3. Load Module with all the three modules fully integrated. The vehicle manufacturers always try to justify the present ladder type chassis, which is a hybrid variety of vehicle both for passenger and freight appplications on the grounds of poor road conditions, lesser speed limit etc. Unless policy level intervention is there, it may be difficult to bring in any perceptile change in the technology adopted. Atleast wherever better road conditions exist, the State Transport Undertakings can buy upgraded vehicles so as to derive the benefit of better

technology.

The bus market in India is quite high compared to many countries. There is no reason why design of vehicles to suit to different applications are not made by manufacturers. Similarly vehicles to meet freight road transport requirement could be produced in India. Liberalisation of economy and globalisation has brought in lot of competition in Light Commercial Vehicles (L.C.Vs) and cars. A variety of cars have come in to meet varied requirement. But, unfortunately there is not much of competition either in bus market or in truck market. It is therefore highly imperative that the State should intervene so that better technology vehicles are made available to the operators.

The Group emphasise that the Government and vehicle manufacturers may take into consideration the following in particular:

- For metropolitan/city applications with too many start/stop operations, traffic density and congestion waranting more efforts on the part of driver, either semi-automatic or fully automatic gear box with power steering should be made mandatory.
- Soft suspension should be there for passenger application atleast in city and intercity vehicles. Tapper spring or parobolic spring or air bellow suspension may be adopted.
- Automatice chassis lubrication system so as to lubricate at fixed intervals of certain kilometers of operation may be introduced to improve the maintenance and to reduce wear and tear of vehicle.

- Alternatively centralised lubrication facility may be provided by linking all lubricating points in the chassis to enable lubrication at one stroke during regular maintenance in the Depot. Thus lubrication is properly ensured to all points.
- Fitment of hollogen lamp bulbs to vehicle Head light along with auto dipper be provided to reduce glare so as to minimise avoid head on collisions.

3.2. Bus Body Design.

With regard to the bus body, the Group felt that there is a need to improve the bus design accross the board for all the different types of duties. The bodies are built on bus chassis by coach builders and many of them do not have adequate engineering expertise either in design or in manufacture. Consequently, the bodies are poor in design and quality. At the time of accident involving head on collision, many passengers inside the bus suffer severe injuries and sometimes fatal too. We, therefore need bus bodies with more structural regidity, aerodynomically efficient, aesthetially attractive, better finish and providing maximum comfort and safety.

The Integral Concept has been talked for more than one decade, but not much progress has been made so far. Therefore, the Group suggest, that it is better the manufacturers themselves supply fully built buses involving 'Integral Technology'. If need be, necessary legislative support in the Motor Vehicle Act with adequate incentive to the manufactuers would go a long way in fulfilling this need. There have been

arguments of the suitability of this type of vehicle on rural roads, but, however atleast in the urban areas and in intercity applications, we can introduce such buses. When the volume of requirment goes up, the unit cost will come down to an affordable level by the fleet operators and others.

3.3. Multi-Axle Vehicles (MAVs)

Regarding introduction of Multi axle vehicles for freight transport, studies made in the past has categorically established that the cost of operation per tonne-km is the lowest for Multi-axle-vehicles (MAV) compared to regid axle vehicles.

A comparison of vehicle operating cost reported in a study recently gives details of cost between 2 axle regid, 3 axle regid, 3 axle semi articulated and four axle semi articulated as given follows:

| Details | GVW in Tonnes | Per tonne-km in Rs |
|---|---|---|
| Two axle regid | 16.2 | 0.43 |
| Three axle regid | 25.0 | 0.35 |
| Three axle semi articulated | 26.4 | 0.33 |
| Four axle semi articulated | 35.2 | 0.31 |

Moreover, the MAVs has got substantially less Road demaging effect with lower Road Demage Factor (RDF) as compared to the existing regid axle vehicles, because the weight carried is spread over more axles. For a given volume of goods to be transported, fewer multiaxle vehicles will be required resulting in less traffic density. For an overloaded two axle vehicle with 15 tonnes pay load and a GVW of 21.2 tonnes, the RDF will be 199.8, whereas for the same pay load and GVW of 24.0 tonnes,

three axle regid body vehicle, the RDF is only 60.1. Hence, this needs to be taken into consideration while encouging the use of Multi Axle Vehicles.

The reasons for not going in for Multi axle vehicle appears to be inadequate road width, poor geometrics at many places and surface quality. Since nearly 70% of freight road traffic is on the National Highways and State Highways, it should not be difficult to operate better technology freight vehicls on these roads. While the Central Government may allocate more resources for investment on these two types of roads which account for only about 4%, legislative measures should also be brought in the Motor Vehicle Act & Rules to accelerate the introduction of these types of MAVs in our country. Since, there will be considerable savings in the cost to the system by way of lower freight rate, less wear and tear on roads resulting in less upkeep cost of road, the Government should provide adequate incentive by way of lower taxation, cheap finance for the purchase of such vehicles.

## 4.0. MAINTENANCE OF ROAD TRANSPORT FLEET

### 4.1. The Present Practice

Another important issue is to review the exiting arrangements for maintenance of Road Transport Fleet in the State Road Transport Undertakings and to suggest guidelines for the future. Most of the public sector State Transport Undertakings in India adopt preventive maintenance system duly supported by unit replacement concept. No doubt this reduces down time of vehicles docked for repairs but it consumes lot of manual labour. With increasing wages and fares not commensurate

with the operational costs, ways and means of reducing maintenance costs will have to be explored. In some of the State Transport Corporations, even the infrastructural facilities available for maintenance are sub-optimal.

4.2. Suggested approach.

The Group feel that gradually we should switchover to condition Monitored Maintenance (CMM) system with emphasis on Maintenance Prevention as far as possible. This means right from design of components for the vehicle, this concept should be adopted. Since, the establishment cost on maintenance goes up year by year, we have no other alternative but to switch over to mechanised maintenance using gadgets and monitoring equipment . No doubt, this will add to the cost of the vehicle and infrastructural facilities, but over a period of time, the benefits that accure by way of better maintenance, operation of reliable and safe services will offset the initial cost of investment.

With the liberalisation and globalisation of economy, it should be possible to get the necessary equipment from abroad. Introduction of condition monitoring and diagnostic equipment the quality of maintenance will improve considerably. Though, it may not be possible for smaller organisations to go in for such sophisticated items, atleast the larger State Transport Undertakings can think of adopting this concept.

4.3. Improving of Infrastructure.

As already stated in some of State Road Transport Undertakings, the quality of maintenance suffers for want of

adequate infrastructural facilities, proper design of depots. Hence, emphasis should be more on strengthening the infrastructural facilities required for maintenance of vehicles in these organisations.

## 5.0. IMPROVING OF FUEL PERFORMANCE.

### 5.1. Fuel Performance of STU Buses.

On the question of improving the fuel performance of road transport vehicle, the Group has taken note of the fact that there are wide variations between various transport undertakings in India. The difference between lowest achieved KMPL and highest achieved KMPL by the STUs are as follows:

| | Lowest | Highest | Variation |
|---|---|---|---|
| Mofussil organisations | 3.18 | 4.95 | 55.6% |
| City organisations | 2.99 | 3.76 | 25.8% |
| Hilly organisations | 3.28 | 3.60 | 9.7% |

While the variation in KMPL between the lowest achieved and highest achieved corporation in mofussil group is as high as 55.6%, in city group the variation in achievement of fuel performance is 25.8%. In Hilly operation, the variation between undertakings is 9.7% perhaps, the number of Corporations are less. The factors affecting fuel performance can be grouped into three viz: a) Vehicle related b) Fuel related c) Maintenance related.

### 5.2. Vehicle related aspects.

As far as vehicle is concerned, the Group is of the view that the vehicle should be designed from the point of

operationl requirement. The Group feel that attention need to be made on the following as far as vehicle is concerned

- availability of right type of vehicles for a particular operation.
- continuously variable transmission or automatic transmission for certain type of applications.
- improved and trouble free turbo charged system.
- introduction of radial tyres for commercial vehicles.
- improved cooling system design.
- improved fuel filter.
- introduction of adiabatic cycle.
- caliberation of Fuel Injection pump to suit for different aplications.
- fitment of altitude pressure compensator wherever necessary.
- introduction of corbon fibre based piston to improve the compression ratio.

5.3. Improving the qualify of Fuel.

The fuel quality and specification has an important bearing on engine/vehicle fuel performance. There are two aspects to this problem viz: 1. Fuel quality as produced at the refinaries 2. Fuel quality as available at pumps. The Octane number of the gasoline determines the highest compression ratio of the spark ignition engine to burn the fuel without 'knocking' The higher the compression ratio the better is the fuel consumption. Typically if the compression ratio is reduced from 10.5 to 9.5, the fuel consumption increases by 3 to 5%. Therefore there is an

urgent need to raise the Octane number of petrol from 87 to 91.

The cetane number of diesel fuel determines the ignition characteristics and hence fuel efficiency and exhaust emissions. The Cetane number of fuel should be increased to 58 atleast. The sulpher in the fuel gives rise to particulates in the exhaust gas. Both in USA and in Europe, sulpher has been restricted to 0.05% whereas the specification for Indian fuel is currently 1%. It should be reduced to 0.25% by the year 2000 atleast.

With regard to quality fuel, the Group suggest that it should as far as possible comply with Indian Standards Institute specifications. In fact, it is the view of the Group that we should adopt early the International specifications especially with regard to sulpher content, cetane no, etc.

5.4. Improving of Vehicle Maintenance.

On the vehicle maintenance related aspects, the Group note that the fuel comsumption varies with the nature of operation, weight of bus body, etc. There are wide variation between State Transport Undertakings. The Group feel that by proper attention on the following aspects, considerable saving could be achieved.

- Better management control
- By effecting better Technical Control
- By proper operational control
- Effective improvement in Driving habits.

6.0. POLLUTION CONTROL OF VEHICLES

6.1. Fitment of Catalytic Converters.

Yet another item Group is to suggest a

programme including use of catalytic convertors on Motor Vehicle for pollution control to reduce the efferts on environment. The Group note that the catalytic convertors are not available in large numbers for diesel vehicles in our country. But, however the Group felt : that vehicle pollution could be minimised in the long run by taking the following measures.

The retro fitment of catalytic convertors for diesel vehicles may be taken up only if such convertors are available in large numbers in India. Hence, no specific programme is suggested at present. No doubt, the unburnt bydro carbon can be minimised in the exhaust emission with the retro fitment of catalytic convertors, whether this will reduce suspended particulate emission is to be examined further.

6.2. Improving Engine Design.

By effecting improvements in the design of engine a long term solution can be found out to reduce smoke pollution. The design of engine should be such that appreciable degradation should not be there before the engine is due for next reconditioning with the normal standard of maintenance to the injectors and FIP, etc.

6.3. Improving Maintenance of F.I.P. & injectors.

However, the Group strongly felt the smoke pollution can be minimised in the short run by proper maintenance of Fuel injectors and F.I.P. besides periodic overhauling of engines. The drivers should also be taught properly so that the sudden acceleration and decceleration could be minimised. Not only belching of black smoke can be minimised but also considerable fuel saving could also be ensured.

7. Thus while embarking on the IXth Plan with substantial emphasis on technological upgradation on different fronts-vehicle technology, pollution abatement, environmental concerns etc - R&D assumes critical significance. Technology and technology policy continue to be an area where the Central Government has to support and augment the efforts by the private sector as well as State Governments. Therefore, research studies on all the above issues and real physical research in the various institutes such as CIRT, IRT, IITs and even through public-private participation (in Manufacturure's Testing Centers) etc assumes importance. R&D efforts are futuristic and continuous. Many schemes evolve out of past experience, a sort of learning by doing. Therefore, it may not be possible to visualize the full course of action in the form of schemes/projects in advance. Hence there is the need for earmarking enough funds so that it should not become a constraint for continuous R&D efforts, thereby aborting the benefits half way through.

8. In the light of the foregoing discussions, an outlay of Rs 50 crore is recommended for R&D in the IXth Plan for the Central sector Road Transport programme .

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## CHAPTER IX

## NATIONAL LEVEL MANAGEMENT INFORMATION SYSTEM

A well chalked out, fast retrievable information base is an essential pre-requisite for evolving policies, implementing these properly through a good monitoring mechanism.In a fast expanding road transport sector such as in India, the need for such a national level information system has been felt for quite a long time. However, nothing concrete could be achieved so far due to mainly the resource constraint. While embarking on an information based policy regime, it is imperative to develop a comprehensive management information system at the national level.

2. The present system of issuing driving licences, permits and registration of motor vehicles was designed years ago;it is predominantly manual in nature. This prevents effective and speedy communication and coordination among different agencies; it hinders information based policy formulation too. Moreover, it leads to considerable amount of duplication of work, involving excess costs.Moreover, in the case of road accidents the authorities face the problem of tracing the records and papers in time, consequently the existing system works against speedy disposal of the cases .

3. The working of the office of the RTOs/ATOs is also quite archaic. Therefore,the Working Group emphasises the need for strengthening these Offices on modern lines by

introducing computer based systems. The need has been highlighted time and again by all concerned including the Transport Development Council.

4. Once the strengthening of computerisation in the field level offices is implemented, the system can be hooked to a national level net work with the Ministry of Surface Transport. This would make available on line information relating to registration of vehicles, details of driving licences, national and zonal permits etc. Bringing the data of about 600 RTOs of the country on a single net work will be a considerable achievement in evolving a national data base system which will facilitate timely formulation of policies and provide for corrective action in implementation, if necessary.

5. This highlights the need for regular on going studies on traffic flows (origin -Destination) . National Transport Policy Committee and other experts recommended such OD studies to be undertaken at regular intervals to make available valueable data for planninhg of different modes of transport. However, this area has not taken the seriousness it deserves. It is proposed that Ministry of Surface Transport commissions such studies periodically to make available traffic data flows required by planners, scholars and administrators.Once a proper harmonised system of registration is implemented, periodic traffic flow studies become easier and information can be retrieved at the national level for planning future

transport scenario in the country at the macro level and in urban areas and busy corridors at the micro level.

6. Some of the states have already taken up a system of computersiation of transport commissioners' office. This needs to be extended to all states and union territories. At the same time, for a national level net work, the format of the programme has to be the same .The uniform format is to be developed by a central agency such as the National Informatic Centre. If need be, a dual format could be evolved with certain parametres for part I of the format which is the national level requirement and also part II which represents the state specific requirement.

objectives of national level MIS

7. In brief, the objectives of the National level MIS on road transport are :

(i) To evolve a standardised up- to- date information on motor vehicle registration, driving licences etc. simultaneously at the level of RTO/STA and at the national level.

(ii) Networking all RTOs/STAs with computer communication network of NICNET and

(iii) to access aggregate data by the Ministry of Surface Transport for evolving an information based policy approach.

8. In the case of certain states where computerisation is not yet resorted to, due to extreme financial constraint,

grants need to be given for procuring computer. hardware. In other cases, software assistance and training may have to be imparted to their personnel. The Working Group has estimated that the schemes may require a minimum of Rs 25 crore during the next 5 years. Therefore, it recommends earmarking of Rs 25 crore as a minimum allocation in the IXth Plan for National level MIS.

Strengthening of Transport Research Wing

9. As is seen earlier, stregthening the data base in other areas such as traffic flows and that in the Transport Research Wing is to be re-emphasised. While a provision of Rs 5 crore has been recommended for regular studies under the Transport sector , strengthening of the TR Wing is to be funded as a different project. Once the national level data becomes available for examination, the Transport Research Wing would need to further analyse and make use of this information for purpose of policy formulation. As is well known,it is the only authentic source of information for data on different modes of transport;the Wing brings out a number of pulbications on yearly and quarterly basis. There is a need for enhancing the quality and content of these publications through better and more information and use of modern techniques such as computer and NICNET facilities for bringing out the publications in time.

The Working Group suggest that for streamlining the functioning of TR Wing, a provision of Rs 1 crore may be ear marked in the 9th Five Year Plan.

## CHAPTER-X

## Summary of Major Recommendations

The major recommendations of the Working Group are summarised below, Chapter-wise.

Chapter-II

(1) There is multiciplity of taxes in the Road Transport Industry. It is therefore, necessary to rationalise the tax structure. For this purpose, national norms be developed and implemented for maintaining inter-State parity in taxation of road transport industry.

(2) Abolish mobility restricting taxes and other measures which adversely affect the free flow of goods and passengers.

(3) Shift/redirect emphasis from personalised modes of transport to public modes of transport. In this context, re-structuring of urban transport system on the lines of Mass Rapid Transport Systems is strongly recommended.

(4) There is a need to develop a sound information base, a Management Information System, covering the private sector as well.

(5) Upgradation of vehicle technology, perticularly that of trucks by shifting to multiaxle vehicles is an area which needs stronger attention.

(6) The National and State Highway network needs im-

provement and expansion. The maintenance aspect as well as provision of wayside amenities such as for parking, transport nagars etc., needs to be created.

(7) In order to increase the investment in the transport industry, a major share of the tax collected from the industry needs to be ploughed back. Similarly, 1-2% levy on the sale proceeds of vehicle manufacturers for improving aspects relating to road safety can be considered.

(8) The Central Government should focus more attention on R&D, training, safety and environmental related issues.

Chapter-III

(1) The policy frame of the IX Plan is formulated in a contextual manner in tune with the macro economic concerns and the emerging issues in the road transport sector. This calls for private sector participation in all the realms of the transport industry because of the inadequacy of public resources. However, the private sector participation needs to be properly guided and directed for maxmising the social gains. The Working Group feels that a 'corporate culture' has to be brought in the field of private sector participation.

(2) While going for an expanded role of the private sector, even in the passenger transport segment, a level playing field has to be ensured for the PSRTUs.

(3) While moving from active participation to more of direction and guidance(indicative planning), however, issues such as technology and technology policy, R&D road safety, pollution and other environmental concerns continue to be the focus of Government attention and fundings.

Chapter-IV

(1) The explosive growth of road transport belieing the past projections, has necessitated regulating this by emphasising public modes of transport.

(2) For facilitating advanced planning, it is imperative to have a regular flow of traffic data in the country. Therefore the Sub-Group recommends that periodic studies have to be instituted for this purpose and the Transport Research Wing needs to be strengthened.

(3) The freight traffic has to move on multi modal system and on the road transport sector, the truking technology has to get on to the multi-axle one.

(4) Consequent on the growth of road vehicles, the environmental problems are also increasing rapidly. Remedial measures needs to be taken to offset these adverse social impact.

## CHAPTER-V

1. Over the years, the share of public sector SRTUs in terms of bus fleet owned and operated has been declining(Chapter V.3)

2. Several suggestions have been made by the Government during the 8th Plan for improving the road transport services including improving the performance of SRTUs. These suggestions include (i) encouraging competition, (ii) allowing expansion of SRTUs having adequate internal resources, (iii) the need for an automatic fare revision mechanism, (iv) regulation of private sector to ensure safe, efficient and reliable transport services, (v) environmental safeguards etc. (Chapter V.4)

3. Several thrust areas have been identified for priority action during the 8th Plan; these include technological upgradation, replacement of overaged buses, private sector participation, productivity improvement, energy conservation, introduction of integrated transport services etc.(Chapter 5.5)

4. Though attempts of technological upgradation at different levels have been made, concrete results have been achieved only in developing fuel efficient engines(Chapter V.5(1)

5. Replacement of overaged buses is a thrust area; it has been slowed down during the 8th Plan on account of resource constraint(Chapter V.5(3)

6. The success of private sector participation has been limited/confined to the States where the SRTUs are not performing well.(Chapter V.5(4)

7. In the basence of appropriate regulatory machanism, the objective of providing integrated transport services could not be fully met.(Chapter V.5(6)

8 There has been marginal improvement in fuel efficiency despite increase in the share of overaged buses during the 8th Plan. APSRTC, Gujarat SRTC etc., have been able to improve fuel efficiency considerably on account of a host of managerial and technical measures adopted by them. Other SRTUs which are lagging in fuel efficiency may consider emulating the measures of APSRTC.(Chapter V.5(7)

9. There has been a steady improvement in the physical performance of SRTUs at macro level during the 8th Plan. On a micro level there are wide variations in the performance mainly due to the form of organisation, terrain of operation, the bus staff ratio, maintenance infrastructure etc.(Chapter V.24 and 25)

10. The SRTUs have been losing on account of higher operating cost vis-a-vis revenue earnings. This has been due to rigid fare structure, concessions given by SRTUs, operation of uneconomic routes, higher incidence of taxes etc.(Chapter V.30 to 39)

11. The fact that many of the SRTUs are showing surplus before tax shows the heavy incidence of tax on

their financial results.(Chapter V.4)

12. For improving the performance of SRTUs, the group makes the following recommendations:

(a) Reimbursement of losses on account of concessions.

(b) Rationalisation of taxes.

(c) Automatic fare revision to compensate for increase in cost of inputs outside the control of the SRTU.

(d) Improving quality of services.(Chapter V.51)

(13) The addition to fleet of SRTUs during the 8th Plan has been small at 4599 buses; the emphasis was on replacement of overaged buses. The actual replacement fell short of the targetted replacement(Chapter V.53)

(14) On the basis of existing guidelines and the likely achievements during the 8th Plan, the estimated addition to fleet during the 9th Plan would be 5000 buses. An alternative scenario based on trend growth shows that the augmentation need would be to the tune of 14,500 buses(Chapter V. 54 & 55)

15. There is no uniform replacement policy being followed by SRTUs at present. They should consider following the guidelines of CIRT with modifications if necessary. An estimate of the annual replacement requirement works out to 12,777 buses(Chapter V.56 & 57)

16. Given the resource constraint and the feasibility of involving private sector in building up infrastructure, the Group has considered the investment on infrastructure under two alternatives - at 10% and 8% of the investment in buses.(Chapter V.58 to 60)

17. At current prices, the fund requirement for purchase of buses and infrastructure development during the 9th Plan works out in the range of Rs.7500 and 8400 crore under two alternative scenarios(Chapter V.61)

18. The available resources during the 9th Plan are estimated at Rs.6800 crore(with major reliance on internal resources, namely Rs.4950 crore); this would leave a deficit in the range of Rs.700-1600 crore according to the two alternatives(Chapter V.62 to 66)

19. For bridging the resource gap, the following measures have been recommended:

(a) Reimbursement of losses on account of social burden of the SRTUs.

(b) Mobilisation of resources through privatisation of specific activities and development of properties by the SRTUs.

(c) Setting up of Road Transport Finance Corporation(Chapter V.67)

20. The shortfall in contribution to the Plan by the SRTUs during the 8th Plan is estimated at Rs.1359 crore primarily on account of higher cost of operation and slippage in the fare revision(Chapter V.68)

21. On the basis of estimated fleet, assumed vehicle producti ity, ost of operation and periodical fare increases, SRTUs are expected to generate gross internal resources of Rs.9880 crore. Adjusted for cost increases and estimated losses during the 9th Plan, the

net resource generation is estimated at Rs.4950 crore. Under an alternative scenario, assuming 10% fare hike per annum, the net internal resources is estimated to be Rs.11195 crore. However, the second scenario, though desirable, is not considered in view of the lags in fare revisions in the past.(Chapter V.71 to 73)

22. The present system of replacing overaged fleet from funds available in DRF is not helping the SRTUs since DRF is " notional for most of them on account of losses suffered by them". It is strongly felt that Government reimburse to the SRTUs the social costs and agrees to automatic fare revision and setting up of a separate Road Transport Finance Corporation to assist the SRTUs in meeting their programme for purchase of buses.(Chapter V.76 to 78)

23. In the changed policy environment of "no capital contribution" by either Central Government or the State Government, their reluctance to guarantee loans, high cost of institutional finance etc., SRTUs are not in a position to implement their Plan programme. This highlights the need for setting up a State level Road Transport Finance Corporation on the lines of similar Corporations in Tamilnadu, Karnataka and Kerala. This will not only reduce the effective cost of borrowing since no guanrantee charges will be then payable by SRTUs, but also make easy flow of funds to the SRTUs(Chapter V.79 to 88).

## Chapter-VI

(1) The rapid increase in the number of road accidents and fatalities necessitates urgent and more active attention on issues relating to road safety.

(2) Engineering, education and enforcement aspects relating to road safety need to be strengthened. The following specific problems are recommended by the Working Group:-

- widening of bridges in tune with the emerging way of the roads.
- proper signalling, road signs and road markings.
- strengthening of National Highway patrolling scheme and extending the same to busy and accident prone stretches of the State Highways as well. Participation of the vehicle manufacturers in the form of 'highway adoption scheme' is recommended.
- introduction of safety devices in manufacturing practices.
- emphasis on training and re-training
- efforts on creating awareness through publicity and involving agencies such as NGOs, schools, NCC etc
- development of wayside amenities such as parking, primary health centres etc.
- adoption of modern technologies for multi-storeyed parkings, ISBTs etc. for the metropolis and the need for larger involvement of private parties including foreign investors and multilateral assistance.

- introduction of modern highway signalling system.
- strengthening of Road Safety Division in Ministry of Surface Transport for coordinating road safety policies and programmes; similar nodal agencies at the state level are recommended.
- cess at a fixed rate on the gross revenue earnings of vehicle manufacturers' is recommended to supplement funds for road safety schemes.

## CHAPTER-VII

1. Transport, being the labour intensive industry, needs careful attention to Human Resource Development. This necessitates upgradation of skills on a continuous basis; this in turn calls for development of training institutes and polytechnics.

2. Likewise, to cater to the expanding requirement of managerial personnel, appropriate institutional facilities need to be set up.

3. Apart from regular training programmes, distance education could also be considered.

4. CIRT and IRT need to be strengthened for

imparting quality training to the personnel engaged in road transport industry

## CHAPTER VIII

1. In the changed policy environment, R&D is assuming critical significance and the Central Government is expected to play a dominant role in this activity. One of the important areas is upgradation of vehicle technology. The Working Group feels that CIRT, in association with Automobile Research Association of India, should focus more attention on these issues. This also involves development of specific categories of vehicles, such as, urban bus, village bus etc. Even in the traditional bus, design improvements are required.

2. In freight transport, a gradual shift to the multi-axle vehicles is required on account of its lower operating cost as well as lesser damage to the roads.

3. Maintenance and operation of the transport fleet also needs improvement. The Group recommends the switchover to Condition Monitored Maintenance (CMM) system with emphasis on maintenance prevention.

4. Another area of R&D focus is fuel efficiency.

The variations in current levels of fuel efficiency suggest drastic possibilities of improvement. This issue encompasses vehicle related aspects, fuel related aspects and maintenance related issues. R&D efforts in all the three areas need to be continuously upgraded for improving the fuel efficiency.

5. A closely related issue is pollution control. Several technological solutions, such as, use of catalytic converters, are available. The Working Group recommend adoption of all possible measures in reducing vehicular pollution and thereby minimising the adverse impact on environment. This includes, apart from using catalytic converters, improving the engine design, improving maintenance of FIP and injectors etc..

6. Since R&D efforts are futuristic and continuous, involvement of all agencies and continuous research studies is essential. In this context, research facilities in institutes, such as, CIRT, IRT and IITs and even in manufacturers' testing centres (through public-private cooperation) need to be strengthened.

CHAPTER IX

(1) The need for a national level on-line information base for data relating to registration of vehicles, permits, licensing etc., has been strongly felt by the Working Group since the current practices in this

regard vary between States. Such a data base will facilitate studies relating to transport issues as well as taking information based policy decisions.

(2) For such a national level data base, the functioning of the offices of the ATOs, RTOs and STAs needs to be streamlined and computerised.

(3) The field level information thus streamlined and computerised needs to be hooked up to a national network say, NICNET of the NIC.

(4) Considering the level of computerisation is minimal in most of the States, substantial efforts need to be undertaken in this area. This may be in the form of providing hardware, software and training. The Working Group proposes an outlay of 25 crore during the IX Plan for this purpose.

(5) The development of such a data base will necessitate the strengthening of the Transport Research Wing to examine and analyse the massive data that could become available with the Ministry. The Working Group therefore recommends the strengthening of the Transport Research Wing in tune with the emerging requirements.

## CHAPTER XI

### 9TH PLAN PROGRAMMES AND RECOMMENDED OUTLAYS

Over the years, the share of road transport, both in movement of goods and passengers, has been increasing. At present, transport is the most dominant mode of transport. The Central Government's role is concerned with broad policies relating to road transport including management of SRTUs, motor vehicle legislation, popularising road safety and laying down emission norms for pollution control, human resource development programmes, improvement of data collection, transport studies, efforts on energy conservation etc. State Governments are concerned with the strengthening of their State Road Transport Undertakings, regulation of vehicles, promoting road safety and preventing environmental degradation. Some of the States have also set up State Road Transport Finance Corporations to render financial assistance to their State Road Transport Undertakings which have been set up to provide efficient, economical and reliable transport services to the users.

2. As regards the freight segment of the road transport, this is primarily in the hands of the pri-

vate operators. Primary role of the State in this area relates to regulation of the truck operators and implementation of the Motor Vehicles Act. Data on freight operation is hard to come by. At present, there is no agency to collect and compile the data on commodity flows, the load factor of the trucks etc. This is a grey area and needs urgent attention of the Government by way of commissioning studies and setting up an institutional framework for regular collection, compilation and analysis of data to facilitate planning for this sector.

3. The Working Group had set up five Sub-Groups to examine the issues entrusted to them in depth and report back their findings. Outlays recommended by the Sub-Groups are need based. While examining their proposals and finalising the Report, the Working Group has been guided by the availability of resources. Hence, some of the outlays proposed by the Sub-Groups have been pruned down keeping in view the constraint on resources; for example, while the Sub-Group recommended Rs.300 crore for Human Resource Development and Rs.200 for Road Safety, the Working Group have proposed substantially lower outlays at Rs.10 crore and Rs.102 crore respectively. The outlays recommended by the Working Group are thus the minimum essential for the activities of the Ministry of Surface Transport in the

area of Road Transport.

4. The major recommendations for development of Road Transport are discussed in the following paras:

(i) **DELHI TRANSPORT CORPORATION:** No outlay has been proposed for the DTC programme since the Corporation has since been transferred to the National Capital Territory of Delhi.

(ii) **CAPITAL CONTRIBUTION TO SRTCs:** The liability of Centre's capital contribution to the SRTCs arises out of Road Transport Corporation Act, 1950. In early 90's, the Planning Commission decided to link Centre's contribution to the productivity of the Corporation and certain guidelines were issued in this regard. Consequent upon the decision taken by the Planning Commission that incremental passenger traffic demand be met by the private sector and that there is no need for the public sector to add to their fleet of buses except in specific difficult areas where private sector is not willing to operate, the capital contribution by the States to their respective SRTC was stopped in 1993-94. Accordingly, Centre's matching capital contribution has also been dispensed with.

However, there is a commitment to the extent of Rs.13 crore on account of arrears payment of Cen-

tre's contribution to some of the SRTCs. Further, it is considered essential to provide some minimum assistance to SRTCs operating in difficult areas to facilitate their development. For this purpose, a minimum amount of Rs.50 crore, 50% of the expected States contribution to these undertakings, is considered absolutely necessary during the 9th Plan. Thus, the Working Group recommends an outlay of Rs.63 crore towards Centre's capital contribution in the 9th Plan.

(iii) **ROAD SAFETY PROGRAMME:** Road Safety programme is in the nature of a continuing activity. At present, there are two small cells in the Ministry of Surface Transport - one in the Roads Wing and the other in the Transport Wing - to look after the road safety aspects. The outlays for these cells are small. The Working Group has examined the issue indepth and is of the firm view that these two cells be merged into one unit appropriately strengthened for achieving optimal results. This would result in pooling of resources which would be utilised in the most effective manner in the larger public interest. The advantages that would accrue would be those of working under unified command, availability of larger resources and speedy implementation of the programme. The details of the programme have been discussed in Chapter VI of the Report.

The Working Group is of the view that similar organisational changes may also be made at the State level through pooling of resources available with the different agencies and bringing these agencies under one unified command.

An outlay of Rs.102 crore is considered essential for road safety programme in the 9th Plan.

(iv) **RESEARCH & DEVELOPMENT (R&D) SCHEMES:**

R&D schemes have a vital role to play in evolving and operating an efficient transport system. The current level of R&D efforts in the country leaves much to be desired. Such efforts, aimed at improving technical inputs and productivity in the road transport sector, are an urgent requirement.

The areas which need to be studied relate to upgradation of vehicle technology, improvement of vehicle maintenance systems, improvement of fuel efficiency and containing environmental degradation due to vehicle emissions. There is also an urgent need to popularise multi-axle vehicles to reduce the damage to the road network. The details of the various schemes proposed to be undertaken during the 9th Plan are discussed in Chapter VIII of the Report. An outlay of Rs.50 crore is required for this programme during the 9th Plan period.

(v) **NATIONAL DATA BASE NETWORK:** There is an imperative need for evolving a comprehensive national level management information system since the current State practices in this regard are deficient and are at great variance with each other. This would necessitate strengthening the computerisation in the States. Considering the financial constraints of the State governments and to encourage them to optimise the use of computers in maintaining their transport records, it is proposed that the Ministry of Surface Transport may provide computer hardware, software and necessary training to the State personnel. For this purpose, an outlay of Rs.25 crore is recommended in the 9th Plan.

(vi) **TRANSPORT STUDIES:** Considering the growing importance and complex nature of the Road Transport sector, the research back up on various issues is assuming more and more significance. This is further reiterated by a shift to an information based policy regime proposed by the Group. The major research studies considered for taking up during the 9th Plan are as follows:

(a) Comprehensive study on the tax structure of the road transport sector.

(b) Detailed project report on highway signalling

system.

(c) NGO participation in road safety programme.

(d) Financing of modern truck terminals, inter-State Bus Terminal, parking etc. The feasibility of financing infrastructure by private sector, direct foreign investment and multi-lateral agencies needs to be explored.

(e) Periodic studies on pollution abatement and environmental issues are needed since technology and technology issues are dynamic.

(f) Role of publicity in road safety.

(g) Upgradation of vehicle technology.

(h) Issues relating to re-training of drivers.

(i) Standardisation of road signs and markings.

(j) Accidente impact and medical help.

(k) Origin-Destination studies on traffic flows on regular intervals.

It is recommended that all studies need to be coordinated by one single agency, such as, the Transport Research Wing in the Ministry.

(vii) **NATIONAL ROAD TRANSPORT FINANCE CORPORATION:**

Having regard to the constraint on funds and the new guidelines of the Planning Commission, stopping States' capital contribution and, thereby, Centre's matching capital contribution to the SRTUs for augmentation of fleet, it has become imperative to

consider innovative methods of funding the development programme for Road Transport. On account of continuous losses incurred by most of the SRTUs due to operation of uneconomic routes and concessions to various categories of people under Government instructions, uneconomic fare structure and high incidence of taxation, SRTUs are in a difficult financial position. The normal source of funds for most of these undertakings have dried up. The institutional finance is also not attractive on account of high interest rates. The Working Group have, therefore, recommended setting up of State Road Transport Finance Corporations at the State level and National Transport Finance Corporation at the Central level.

The allocation of Rs.10 crore has been suggested towards seed money to the National Transport Finance Corporation. This is proposed as one time contribution by the Central Government to the Corporation. The resources of this Corporation are proposed to be augmented through a cess on the sale proceeds of the automobile manufacturers. This ia a laudable proposal to mobilile funds for the road transport industry as well as for improving the maintenance of the road network in the country. The cess proposal be processed by the Ministry of Surface Transport as early as possible for an early decision.

(viii) **STATE SECTOR:** The Working Group has also studied the development of road transport in the State Sector and the requirement of funds for the same in the 9th Plan. The major programme relates to fleet acquisition by the SRTUs. The Working Group have been conscious of all the guidelines issued by the Planning Commission relating to the State Road Transport Undertakings. These guidelines emphasise the point that incremental traffic demand be met by the private operators and that SRTUs need not expand unless they have their own internal resources to fund such expansion. Some minimum fleet expansion has been recommended by the Working Group having regard to the requirement of buses in the difficult areas which would be operated by the respective SRTUs there and the augmentation of fleet by viable SRTCs which are in a position to fund their expansion through their internal and extra-budgetary resources.

5. The Working Group have examined in depth certain issues of topical interest to the SRTUs and the public at large. These relate to the viability of the SRTUs, replacement of their over-aged buses etc. All these issues are discussed in Chapter-V of the Report.

6. Scheme-wise details together with proposed outlays are set out in the Statement at Annexure XXV.

While the major schemes have been identified, the micro level projects under each of the schemes would need to be formulated by the Ministry at the time of preparing annual plan proposals for the road transport sector.

7. To sum up, the minimum outlay required for the development of road transport in the country during the 9th Plan are as follows:

| PROGRAMME | PROPOSED OUTLAY (Rs./Crores) |
|---|---|
| Central Sector | 328 |
| State Sector | 7271 |
| Total: | 7599 |

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XVIII Requirement of Buses by SRTUs during IX Plan

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ANNEXURE I

No.T&C 12(9)/95
Government of India
Planning Commission
(Transport Division)

Yojana Bhavan,
Sansad Marg,
New Delhi - 110001

dt: 31.10.95

ORDER

Sub: Constitution of Working Group on Road Transport for Ninth Five Year Plan (1997-2002)

In the context of preperation of the Ninth Five Year Plan, it has been decided to set up a Working Group on Road Transport. The composition of the Group will be as follows:

| | | |
|---|---|---|
| 1. | Secretary, Ministry of Surface Transport. | .....Chairman |
| 2. | Shri A.D. Narain, Director General(Road Development) and Addl. Secretary, Ministry of Surface Transport. | .....Member |
| 3. | Shri Mathew John, Executive Director (Planning), Ministry of Railways | .....Member |
| 4. | Shri K.L. Thukral, Adviser, Transport Research Divisic Ministry of Surface .ransport | .....Member |
| 5 | Joint Secretary, Ministry of Environment and Forest. | .....Member |
| 6 | Shri S.C. Vohra, Deputy Adviser, Transport Division, Planning Commission. | .....Member |
| 7. | Shri V.K. Bhatia, Deputy Adviser,Industry & Mineral Division, Planning Commission | .....Member |
| 8. | Representative of Ministry of Industry | .....Member |

| | | |
|---|---|---|
| 9. | Representative of Ministry of Urban Affairs and Employment. | .....Member |
| 10. | Shri Mdhendra Singh, Chaiarman, Rajasthan State Road Transport Corpn. Jaipur. | .....Member |
| 11. | Transport Secretary, Government of Punjab. | .....Member |
| 12. | Transport Secretary, Govt. of Gujarat. | .....Member |
| 13. | Transport Secretary, Govt. of Assam. | .....Member |
| 14. | Transport Secretary, Govt. of Andhra Pradesh | .....Member |
| 15. | Shri Vilas Thorat, Executive Director, Association of State Road Transport Undertakings. | .....Member |
| 16. | Dr. Sudarshanam Padam, Director, CIRT, Pune | .....Member |
| 17. | Shri Rajat Nandi, Executive Director, Association of All India Automobile Manufacturers, India Habitat Centre, New Delhi - 110003 | .....Member |
| 18. | Representative of C.R.R.I., New Delhi | .....Member |
| 19. | Maj. Gen. (Retd.) R.K. Joshi, Director, Vehicle Research and Development Establishment, Ahmednagar 414 006 | .....Member |
| 20. | Director, Fuel Efficiency Division, N.P.C. | .....Member |
| 21. | Shri K.R. Bhati, Joint Secretary, Ministry of Surface Transport. | .....Convenor |

2. The terms of reference of the Working Group will be as follows:

i) To review the growth of road transport for passenger and freight traffic during the Eighth Five Year Plan

period making a critical assessment of the problems faced and the remedial action to be considered in the context of Ninth Plan preparation.

ii) To recommend a policy frame work for the development of passenger and freight road transport in the Ninth Plan. In this context, inter alia, the following policy issues may be considered:

a) Role of the Road Transport in the realisation of optimal inter-modal mix,

b) Regulation of the Road Transport sector for its healthy and co-ordinated development,

c) Private sector participation in the provision of Road Transport passenger services keeping in view constraint of resousrces & safety of operations and suggest measures to broad-base such paraticipation,

d) Rationalisation of taxes on motor transport and removal of Octroi for faster movement of vehicles,

e) Upgradation of technology, particularly, in respect of design of vehicles keeping in view the requirements of urban and rural areas including hilly areas,

f) Promotion of Multi-axle vehicles for movement of goods traffic,

g) Improvement in fuel efficiency of the vehicles,

h) Need for reducing adverse environmental effects of the Road Transport Industry,

i) Need for reduction in the growth of personalised transport,

j) Upgradation and modernisation of infrastructure facilities.

iii) To suggest suitable mechanism to ensure provision of well co-ordinated passenger transport services offered by both the Public and Private Sectors.

iv) To review the physical and financial performance of the State Road Transport Corporations/Undertakings indicating the achievements and failures with particular reference to the Eighth Five Year Plan targets with a view to suggest measures to improve the financial viability.

v) To review the the policy of Centre's/States' capital assistance to State Road Transport Undertakings in the context of economic reforms and problems faced by State Road Transport Undertakings with particular reference to North Eastern States/Hilly States.

vi) To project passenger and freight traffic for each year of the Ninth Five Year Plan period in perspective of the next 10 to 15 years.

vii) To make an assessment of the number of buses and trucks required in the Ninth Five Year Plan indicating separately the requirements for replacement and augmentation of capacity with appropriate phasing over the 5 years of the Plan.

viii) To make an assessment of the current and committed new capacity for production of buses and trucks to meet the projected requirements and recommend further augmentation and reorientation of capacity, wherever necessary.

ix) To assess the possible distribution of vehicle fleet between private sector and public sector for passenger transport. In this context to review the problems of road transport industry in the private sector and recommend specific measures to facilitate the healthy growth of the private sector industry in future to meet the emerging demands efficiently.

x) To estimate financial outlays for the proposed programmes for public sector road transport undertakings, separately for replacements and additions keeping in view the capacity to generate internal resources; annual phasing may also be indicated.

xi) To assess the internal resources of the public sector undertakings in Ninth Five Year Plan and recommend measures to augment them.

xii) To suggest road safety measures in order to reduce the incidence of accidents.

xiii) To indicate the direct employment expected to be generated for various categories of the staff in the course and after the execution of different programmes for each year of the Ninth Five Year Plan period.

xiv) To review manpower training arrangements in the public/private sector and suggest improvements.

xv) To recommend measures for improvement in the system of data collection particularly in the constext of increased role of private sector.

xvi) Any other matter considered important by the Working Group.

3. The Chairman of the Working Group may constitute sub-groups or co-opt such officials or non-official members as may be considered necessary.

4. The non-official members of the Working Group will be paid TA/DA at the rates applicable to Grade-I officers of the Central Government for attending meetings of the Working Group.

5. The Working Group will submit its report to the Planning Commission by

6. The Working Group will submit its report by April, 1996.

(GURJOT KAUR )
Director(Admn.)

Copy to:-

1. Chairman and Members of the Working Group.
2. Secretary, Ministry of Surface Transport ('5 copies)
3. Secretary, Ministry of Finance(Deptt. of Expenditure)
4. Chairman, Railway Board, New Delhi
5. Secretary, Ministry of Urban Affairs & Employment,N.Delhi
6. Secretary, Ministry of Industry
7. Executive Director, Association of State ad Transport Undertakings, New Delhi
8. All concerned officers.

Copy also to:-

1. P.S. to Deputy Chairman
2. P.S. to Member Secretary
3. All Adviseers, Planning Commission
4. S.P.A. to Director (Administration)
5. Administration I Section

(GURJOT KAUR )
Director(Admn.)

**Annexure-II**

## Sub-Group on Traffic Forecasts & Fleet Requirement in the 9th Plan

### Terms of Reference

(i) Project the passenger and freight traffic for each year of the 9th Plan in the perspective of the next 10-15 years. In this connection, the Group may study the need for reduction in personalised modes of transport and suggest measures to strengthen public transport in the country.

(ii) Assess the number of buses and trucks required in the 9th Plan separately for replacement of overaged vehicles and augmentation of the existing capacity having regard to the production of buses and trucks in the country with year-wise phasing.

(iii) Suggest distribution of buses between private and public sector and work out the outlay for the public sector road transport industry, separately for buses on replacement account and for augmentation of the fleet; year-wise phasing may also be indicated.

(iv) Any other matter considered important by the Sub-Group.

### Composition

(1) Dr. L.R. Kadiyali — Convenor
(2) Shri Chitranjan Dass, Secretary General, All India Motor Congress, Delhi.
(3) Shri Rajat Nandi, Executive Director, Association of All India Automobile Manufacturers.
(4) Shri Ashok Kumar, Joint Secretary, Industrial Policy and Promotion, Ministry of Industry.
(5) Shri K.L. Thukral, Adviser(TR)
(6) Shri V.V.P. Rao

Sub-Group on Resources & Financing Arrangements

Terms of Reference:

1. Review the performance of the Public State Road Transport Undertakings(PSRTUs) highlighting the achievements and failures with reference to the Eighth Five Year Plan targets, thrust areas and objectives.

2. To assess the internal resources of the public sector Undertakings in Ninth Five Year Plan and recommend measures to augment them;

3. Examine the feasibility of creating DRF by loss making PSRTUs to finance the replacement of overaged buses;

4. To estimate the outlays for the proposed programmes for public sector road transport undertakings, separately for replacements and additions along with annual phasing.

5. Suggest institutional framework for financing the plan programmes of PSRTUs.

6. Any other matter considered important by the Sub-Group.

Composition

1. Shri K.l. Thukral, Adviser(TR), Ministry of Surface Transport, New Delhi.

2. Shri S.C. Vohra, Dy Adviser, Planning Commission

3. Shri V.K. Subburaj, Director(RT), MOST, New Delhi.

4. Shri Somasekhar Rao, FA., APSRTC

5. Shri D. Arumugperumal, Jt. M.D., Tamilnadu Transport Development Finance Corporation, Madras.

6. Representative of AIAM.

Sub-Group on Productivity, Human Resource Development, Road Safety etc.

Terms of Reference

(i) To assess the productivity of Public State Road Transport Undertakings(PSRTUs) and to recommend measures to improve their physical and financial efficiency;

(ii) To review the existing man-power training programmes in the private/public sector and suggest improvements;

(iii) To indicate direct employment expected to be generated staff category-wise, during each year of the 9th Plan;

(iv) To suggest road safety measures to reduce the accidents;

(v) Any other matter considered important by the Sub-Group.

Composition

(1) Dr. Padam, Director, CIRT Convenor

(2) Dr. Pasricha, IG Police(Traffic), Bombay.

(3) Shri S.S. Suryanarayanan, Jt. Adviser(LEM);

(4) Shri S.C. Vohra, Dy Adviser(Transport), Planning Commission, N.Delhi.

(5) Shri V. Thorat, Ex Director, ASRTU, New Delhi.

Sub-Group on Policy Issues Concerning Road Transport

Terms of Reference

(1) Review the growth of passenger and freight traffic moved by road transport during the VIII Plan, identify the problem areas and suggest policy prescriptions for the formulation of IX Plan.

(2) Recommend the plan for development of road transport having regard inter alia to the following policy issues:

(i) Role of road transport in the optimal inter-modal mix.
(ii) Regulation of road transport industry for its healthy and coordinated development.
(iii) Measures to broadbase private sector participation in the road transport industry.
(iv) Rationalisation of Motor Vehicle Taxes, Passenger Taxes and other levies on road transport vehicles to facilitate intra and inter corporation comparisons.
(v) Feasibility of introducing alternative fuels for road transport industry.
(vi) Improvement in fuel efficiency of vehicles.
(vii) Upgradation and modernisation of infrastructural facilities in the interest of road safety.
(viii) Design and size of vehicles required to meet the traffic demand in rural, hilly and urban areas.

(3) Study the feasibility of introducing battery operated buses, electric trams and MRTS in urban areas.

(4) Any other matter considered important by the Sub-Group.

Composition

(1) Shri V.K. Subburaj, Director(RT), Ministry of Surface Transport — Convenor
(2) Dr. P.G. Patankar, Tata Consultancy Services, Bombay.
(3) Shri B.P. Arya, Chairman, Rajasthan SRTC.
(4) Shri Rajat Nandi, Association of Indian Automobiles Manufacturers, New Delhi.
(5) Shri R. Ramabadran, Vice Chairman & Managing Director, Gujarat SRTC.
(6) Shri Shirbhate, Transport Commissioner, Bombay.
(7) Shri V. Thorat, Executive Director, ASRTUs, Delhi.
(8) Shri Venkataraman, General Manager(Traffic), KSRTC, Bangalore.

## Sub-Group on Vehicle Fleet Modernisation

### Terms of Reference

(i) To suggest upgradation of technology for vehicles, both passenger and freight and to recommend ways and means to popularise multi-axle vehicles.

(ii) To review the existing arrangements for maintenance of road transport fleet in PSRTUs and to suggest guidelines for the future.

(iii) To recommend measures to improve fuel efficiency of the road transport vehicles.

(iv) To suggest a programme including use of catalytic converters on motor vehicles for pollution control to reduce adverse effects on environment.

(v) Any other matter considered important by the Sub-Group.

### Composition

(1) Dr. R. Ganesan, Director, Institute of Road Transport, Madras. -- Convenor
(2) Dr. Satya Narayanan, Executive Director (Engineering), APSRTC
(3) Major General Joshi, Director, Vehicle Research & Dev. Estt., Ahmadnagar.
(4) Dr. A.S. Lakra, CGM, DTC.
(5) Dr. K. Kumar, Director(Engineering). Maruti Udyog.
(6) Shri Tapade, CIRT.

Road Transport (Central Sector)
VIII Plan Outlay & Expenditure

Annexure -III

(Rs. Crore)

| Sl No. | SCHEME | 8TH PLAN 1992-97 | 1992-93 | | 1993-94 | | 1994-95 | | 1995-96 | | 1996-97 | Anticipated Expenditure 8th Plan (1992-97) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Outlay | Outlay | Expend | Outlay | Expend | Outlay | Expend | Outlay | Expend | Outlay | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1 | Delhi Transport Corporation | 140.00 | 20.00 | 19.30 | 10.00 | 0.12 | 10.00 | -- | 10.00 | -- | 10.00 | 29.42 |
| 2 | Capital Contribution to SRTCS | 70.00 | 4.00 | 11.50 | 4.39 | 4.39 | 3.25 | 3.25 | 6.00 | 2.00 | 6.00 | 27.14 |
| 3 | Road Safety Cell | 0.30 | 0.15 | 0.07 | 0.10 | 0.10 | 0.10 | 0.07 | 0.10 | 0.05 | 0.10 | 0.39 |
| 4 | Development of Infrastructure to train instructors for driving skill | 4.50 | 0.50 | -- | 0.20 | 0.18 | 1.00 | 0.04 | 2.00 | -- | 0.20 | 0.42 |
| 5 | Publicity on road safety | 5.00 | 0.75 | 0.25 | 0.30 | 0.25 | 0.30 | 0.33 | 1.50 | 0.60 | 1.50 | 2.93 |
| 6 | Grant-in-Aid for Road Safety | 1.50 | 0.10 | 0.08 | 0.50 | 0.37 | 0.50 | 0.25 | 1.00 | 0.03 | 1.00 | 1.73 |
| 7 | Pollution Testing Equipment (100% Grant to State Govts.) | 10.00 | -- | -- | 3.00 | 2.55 | 3.00 | 1.17 | 3.50 | 1.50 | 2.50 | 7.72 |
| 8 | Road Safety Equipment under World Bank Assistance | 10.00 | 3.00 | 3.39 | 3.00 | 1.76 | 6.00 | 4.53 | 0.01 | -- | 0.01 | 9.69 |

Road Transport (Central Sector)
VIII Plan Outlay & Expenditure

Annexure III (Contd.)

(Rs. Crore)

| Sl No. | SCHEME | 8TH PLAN 1992-97 | 1992-93 | | 1993-94 | | 1994-95 | | 1995-96 | | 1996-97 | Anticipated Expenditure 8th Plan (1992-97) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Outlay | Outlay | Expend | Outlay | Expend | Outlay | Expend | Outlay | Expend | Outlay | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 9 | National Highway Patrolling Scheme | 9.00 | 1.00 | -- | 2.00 | 1.74 | 2.00 | 1.75 | 2.00 | -- | 2.00 | 5.49 |
| 10 | Training Programmes | 0.10 | 0.03 | Neg | 0.01 | Neg | 0.01 | 0.01 | -- | -- | -- | 0.01 |
| 11 | Research & Development Schemes | 4.00 | -- | -- | 1.00 | 0.11 | 0.30 | 0.05 | 0.10 | -- | 0.10 | 0.26 |
| 12 | Improvement of Data Collection-Transport Research Division | 0.80 | 0.15 | 0.04 | 0.03 | 0.03 | 0.02 | 0.03 | 0.04 | 0.02 | 0.04 | 0.16 |
| 13 | Computerisation | 0.50 | 0.07 | 0.04 | 0.07 | 0.07 | 0.07 | 0.08 | 0.20 | 0.10 | 0.20 | 0.49 |
| 14 | Strengthening of CIRT Pune | 4.50 | 0.50 | 0.27 | -- | -- | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 1.77 |
| 15 | Transport Studies | 2.00 | 0.25 | 0.12 | 0.30 | 0.10 | 0.25 | 0.24 | 0.40 | -- | 0.40 | 0.86 |
| 16 | Training of Drivers in Unorganized Sector | 2.00 | 0.10 | 0.02 | 0.10 | -- | 0.10 | -- | 0.20 | -- | 0.20 | 0.22 |
| 17 | Control of Vehicular Pollution | -- | -- | -- | -- | -- | 0.35 | 0.26 | 0.30 | 0.05 | 0.30 | 0.61 |
| 18 | Publicity & other awareness programmes for energy conservation | -- | -- | -- | -- | -- | 0.25 | 0.14 | 0.15 | 0.06 | 0.15 | 0.35 |
| | Total | 264.00 | 30.80 | 35.08 | 25.00 | 11.77 | 28.00 | 12.70 | 28.00 | 4.31 | 25.20 | 80.66 |

## TRENDS IN RAIL : ROAD SHARE IN FREIGHT MOVEMENT

| YEAR | RAIL : ROAD SHARE |
|---|---|
| 1951 | 78.5 : 21.5 |
| 1956 | 75.3 : 24.7 |
| 1961 | 74 6 : 25 4 |
| 1966 | 68.9 : 31 1 |
| 1971 | 61.2 : 38.8 |
| 1975 | 61 0 : 39 0 |
| 1980 | 52 9 : 47 1 |
| 1985 | 41 5 : 58 5 |
| 1991 | 29 9 70 1 |
| 1994 | 27 3 72 7 |
| 1995 | 27 0 . 73 0 |

## TRENDS IN RAIL : ROAD SHARE IN PASSENGER MOVEMENT

| YEAR | RAIL : ROAD SHARE |
|---|---|
| 1951 | 62 2 : 37 8 |
| 1956 | 49.6 : 51 4 |
| 1961 | 42 8 . 57 2 |
| 1966 | 38 0 : 62 0 |
| 1971 | 31.0 : 69 0 |
| 1975 | 25.9 : 74.1 |
| 1980 | 27 3 72 7 |
| 1985 | 19 8 80 2 |
| 1991 | 15 5 84 5 |
| 1994 | 12 1 87.9 |
| 1995 | 12 0 88.0 |

Annexure-V

## VEHICLE POPULATION

| Year | Passenger (000s) | | | | Goods (000s) | |
|---|---|---|---|---|---|---|
| | Car | Bus | Two Wheeler | Three Wheeler | LCV | HCV |
| 1951 | 105 | 34 | 27 | | | 82 |
| 1952 | 139 | 35 | 24 | | | 82 |
| 1953 | 149 | 39 | 28 | | | 88 |
| 1954 | 161 | 40 | 33 | | | 95 |
| 1955 | 174 | 41 | 39 | | | 102 |
| 1956 | 203 | 47 | 41 | | | 119 |
| 1957 | 203 | 38 | 54 | | | 117 |
| 1958 | 219 | 36 | 63 | | | 125 |
| 1959 | 236 | 48 | 74 | | | 135 |
| 1960 | 254 | 54 | 88 | | | 144 |
| 1961 | 310 | 57 | 88 | 5 | 15 | 168 |
| 1962 | 296 | 60 | 121 | 7 | 17 | 166 |
| 1963 | 320 | 63 | 143 | 9 | 19 | 178 |
| 1964 | 345 | 67 | 168 | 10 | 21 | 191 |
| 1965 | 372 | 70 | 198 | 12 | 23 | 205 |
| 1966 | 456 | 73 | 226 | 13 | 25 | 259 |
| 1967 | 433 | 76 | 275 | 16 | 28 | 236 |
| 1968 | 468 | 83 | 324 | 19 | 31 | 253 |
| 1969 | 504 | 87 | 381 | 22 | 34 | 271 |
| 1970 | 544 | 92 | 449 | 26 | 38 | 291 |
| 1971 | 683 | 94 | 576 | 30 | 42 | 301 |
| 1972 | 740 | 99 | 622 | 35 | 47 | 317 |
| 1973 | 709 | 95 | 732 | 47 | 52 | 256 |
| 1974 | 768 | 105 | 862 | 56 | 57 | 266 |
| 1975 | 766 | 114 | 1015 | 62 | 64 | 272 |
| 1976 | 779 | 115 | 1195 | 71 | 70 | 280 |
| 1977 | 878 | 119 | 1407 | 83 | 78 | 305 |
| 1978 | 919 | 124 | 1657 | 94 | 91 | 312 |
| 1979 | 996 | 133 | 1951 | 110 | 95 | 349 |
| 1980 | 1059 | 140 | 2297 | 122 | 103 | 369 |
| 1981 | 1160 | 154 | 2704 | 143 | 114 | 440 |
| 1982 | 1207 | 164 | 3184 | 162 | 125 | 488 |
| 1983 | 1385 | 178 | 3749 | 182 | 143 | 532 |
| 1984 | 1455 | 196 | 4414 | 229 | 161 | 581 |
| 1985 | 1607 | 219 | 5197 | 267 | 182 | 640 |
| 1986 | 1780 | 223 | 6119 | 313 | 193 | 670 |
| 1987 | 2007 | 241 | 7204 | 386 | 214 | 770 |
| 1988 | 2295 | 266 | 8483 | 427 | * 233 | 881 |
| 1989 | 2486 | 278 | 9987 | 476 | 253 | 926 |
| 1990 | 2736 | 313 | 11759 | 542 | 281 | 1001 |
| 1991 | 3013 | 331 | 14200 | 610 | 310 | 1101 |
| 1992 | 3205 | 358 | 15661 | 800 | 352 | 1162 |
| 1993 | 3344 | 380 | 17060 | 935 | 389 | 1203 |
| 1994 | 3617 | 419 | 18338 | 1093 | 431 | 1219 |
| 1995 | 3919 | 444 | 20433 | 1197 | 492 | 1290 |
| 1996 | 4334 | 471 | 22977 | 1338 | 560 | 1383 |

Annexure- VI

## Production Of Motor Vehicles In India

| Year | Jeeps | Cars | Commercial Vehicles | TWO WHEELERS | | | | Three Wheelers | Tractors |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Scooters | Motor-Cycles | Mopeds | Total | | |
| 1975-76 | 7133 | 21658 | 43801 | 106757 | 70108 | 36354 | 213219 | 13378 | 33197 |
| 1976-77 | 8365 | 36331 | 46893 | 155008 | 72369 | 36432 | 263809 | 20037 | 32951 |
| 1977-78 | 9187 | 34262 | 41342 | 155475 | 68382 | 39682 | 263539 | 18556 | 40868 |
| 1978-79 | 11501 | 33330 | 59279 | 165139 | 87427 | 48756 | 301322 | 19621 | 54722 |
| 1979-80 | 12774 | 33002 | 59008 | 156107 | 91115 | 72207 | 319429 | 17398 | 62345 |
| 1980-81 | 15667 | 31275 | 74174 | 212039 | 104223 | 124048 | 440310 | 26930 | 70306 |
| 1981-82 | 17867 | 42475 | 93365 | 223550 | 115304 | 207222 | 546076 | 25801 | 82360 |
| 1982-83 | 20234 | 43558 | 87758 | 264540 | 135810 | 232115 | 632465 | 31881 | 62597 |
| 1983-84 | 21581 | 46901 | 90069 | 276433 | 163290 | 339881 | 779604 | 38575 | 74216 |
| 1984-85 | 23208 | 76090 | 96004 | 314748 | 187147 | 396053 | 897948 | 43508 | 81821 |
| 1985-86 | 27961 | 102004 | 100452 | 461060 | 267107 | 461950 | 1190117 | 49947 | 73456 |
| 1986-87 | 28784 | 125886 | 99153 | 642038 | 302520 | 449688 | 1394246 | 54556 | 79073 |
| 1987-88 | 32036 | 151875 | 110100 | 589734 | 335679 | 511699 | 1437112 | 61112 | 88597 |
| 1988-89 | 35728 | 165798 | 116499 | 725235 | 429037 | 445694 | 1599966 | 79361 | 107175 |
| 1989-90 | 14309 | 179278 | 125051 | 874992 | 417401 | 439293 | 1731686 | 83752 | 117690 |
| 1990-91 | 37369 | 180330 | 144556 | 910335 | 470859 | 440092 | 1821286 | 89162 | 138538 |
| 1991-92 | 31501 | 165303 | 144126 | 766620 | 430366 | 406081 | 1603067 | 76652 | 148123 |
| 1992-93 | 39276 | 163100 | 128580 | 703105 | 384080 | 413356 | 1500541 | 65166 | 147027 |
| 1993-94 | 49896 | 209695 | 141436 | 833802 | 461955 | 460398 | 1756155 | 91608 | 137608 |
| 1994-95 | 49371 | 264368 | 194999 | 1030803 | 647521 | 516936 | 2195260 | 133193 | 163055 |
| 1995-96 | 67679 | 346547 | 259131 | 1225895 | 809087 | 621035 | 2656017 | 173412 | 191149 |

Annexure-VII

## ROAD TRANSPORT

### FREIGHT AND PASSENGER MOVEMENT

| Year | Passenger Billion Km | Freight Billion T-Km |
|---|---|---|
| 1951 | 44.8 | 12.09 |
| 1952 | 49.07 | 12.47 |
| 1953 | 56.04 | 13.73 |
| 1954 | 59 | 15.1 |
| 1955 | 63.18 | 16.55 |
| 1956 | 74.45 | 19.56 |
| 1957 | 65.53 | 20 |
| 1958 | 61.7 | 21.92 |
| 1959 | 87.68 | 24.28 |
| 1960 | 96.96 | 26.62 |
| 1961 | 105.04 | 32.53 |
| 1962 | 117.86 | 33.47 |
| 1963 | 128.78 | 36.96 |
| 1964 | 139.7 | 41.05 |
| 1965 | 162.13 | 45.46 |
| 1966 | 157.96 | 58.51 |
| 1967 | 178.5 | 56.02 |
| 1968 | 196.7 | 62.04 |
| 1969 | 216.18 | 68.78 |
| 1970 | 237.23 | 76.57 |
| 1971 | 263.09 | 82.36 |
| 1972 | 218.89 | 89.97 |
| 1973 | 282.6 | 77.22 |
| 1974 | 317.82 | 83.34 |
| 1975 | 353.74 | 88.79 |
| 1976 | 371.98 | 95.14 |
| 1977 | 401.52 | 107.27 |
| 1978 | 484.98 | 114.97 |
| 1979 | 491.64 | 132.31 |
| 1980 | 523.52 | 145.35 |
| 1981 | 664.83 | 178.36 |
| 1982 | 726.09 | 202.13 |
| 1983 | 746.22 | 226.04 |
| 1984 | 852.96 | 253.68 |
| 1985 | 922.11 | 286.18 |
| 1986 | 1038.56 | 307.03 |
| 1987 | 1140.53 | 360.21 |
| 1988 | 1265.8 | 419.8 |
| 1989 | 1296.98 | 453.18 |
| 1990 | 1581.37 | 503.16 |
| 1991 | 1615.2 | 566.66 |
| 1992 | 1802.5 | 610.1 |
| 1993 | 1958.4 | 646.2 |
| 1994 | 2153.8 | 672.2 |
| 1995 | 2348 | 687 |
| 1996 | 2515 | 720 |

## PROJECTIONS
## PASSENGER-Km

| Plan | Year | Passenger-Km (Billion) | | | |
|---|---|---|---|---|---|
| | | 1966-96 Trend | GNP Growth at 6% | GNP Growth at 6.5% | GNP Growth at 7% |
| Eighth Plan | 1997 | 2764 | 2847 | 2875 | 2902 |
| Ninth Plan | 1998 | 3038 | 3223 | 3286 | 3349 |
| | 1999 | 3338 | 3648 | 3756 | 3865 |
| | 2000 | 3669 | 4130 | 4293 | 4460 |
| | 2001 | 4032 | 4675 | 4906 | 5147 |
| | 2002 | 4431 | 5292 | 5608 | 5940 |
| Tenth Plan | 2003 | 4870 | 5990 | 6410 | 6855 |
| | 2004 | 5352 | 6781 | 9327 | 7,910 |
| | 2005 | 5882 | 7676 | 8374 | 9,128 |
| | 2006 | 6464 | 8690 | 9592 | 10,534 |
| | 2007 | 7104 | 9837 | 10941 | 12,156 |

## PROJECTIONS
## FREIGHT-KM (BILLION)

| PLAN | YEAR | FREIGHT-KM (BILLION) | | | |
|---|---|---|---|---|---|
| | | 1966-96 Trend | GNP Growth at 6% | GNP Growth at 6.5% | GNP Growth at at 7% |
| Eighth Plan | 1997 | 792 | 815 | 823 | 831 |
| Nineth Plan | 1998 | 871 | 923 | 941 | 959 |
| | 1999 | 958 | 1044 | 1075 | 1106 |
| | 2000 | 1054 | 1182 | 1229 | 1277 |
| | 2001 | 1160 | 1338 | 1405 | 1474 |
| | 2002 | 1276 | 1515 | 1605 | 1700 |
| Tenth Plan | 2003 | 1403 | 1715 | 1835 | 1962 |
| | 2004 | 1543 | 1941 | 2098 | 2265 |
| | 2005 | 1698 | 2198 | 2397 | 2613 |
| | 2006 | 1867 | 2488 | 2740 | 3016 |
| | 2007 | 2054 | 2816 | 3132 | 3480 |

## PROJECTIONS
## ROAD PASSENGER VEHICLES

| Plan | Year | Car population ('000) | | | | Bus Population ('000) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1966-96 Trend | GNP Growth at 6% | GNP Growth at 6.5% | GNP Growth at 7% | 1966-96 Trend | GNP Growth at 6% | GNP Growth at 6.5% | GNP Growth at 7% |
| Eighth Plan | 1997 | 4685 | 4802 | 4841 | 4880 | 502 | 513 | 517 | 520 |
| Ninth Plan | 1998 | 5065 | 5321 | 5407 | 5495 | 534 | 560 | 567 | 575 |
| | 1999 | 5475 | 5895 | 6040 | 6171 | 569 | 610 | 623 | 635 |
| | 2000 | 5918 | 6532 | 6747 | 6948 | 606 | 665 | 683 | 702 |
| | 2001 | 6398 | 7237 | 7536 | 7824 | 645 | 725 | 750 | 776 |
| | 2002 | 6916 | 8019 | 8418 | 8810 | 687 | 790 | 823 | 857 |
| Tenth Plan | 2003 | 7476 | 8885 | 9403 | 9920 | 732 | 861 | 903 | 947 |
| | 2004 | 8082 | 9845 | 10,053 | 11,170 | 780 | 938 | 991 | 1047 |
| | 2005 | 8736 | 10,908 | 11,732 | 12,577 | 830 | 1023 | 1088 | 1157 |
| | 2006 | 9444 | 12,086 | 13,105 | 14,162 | 884 | 1115 | 1194 | 1278 |
| | 2007 | 10209 | 13,391 | 14,638 | 15,947 | 942 | 1215 | 1311 | 1413 |

## PROJECTIONS
## ROAD PASSENGER VEHICLES

| Plan | Year | Two-Wheeler Population ('000) | | | | Three-Wheeler Population ('000) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1966-96 Trend | GNP Growth at 6% | GNP Growth at 6.5% | GNP Growth at 7% | 1966-96 Trend | GNP Growth at 6% | GNP Growth at 6.5% | GNP Growth at 7% |
| Eighth Plan | 1997 | 26,906 | 28,078 | 28,514 | 28,928 | 1560 | 1600 | 1651 | 1675 |
| Ninth Plan | 1998 | 31,507 | 34,311 | 35,386 | 36,420 | 1819 | 1914 | 2037 | 2097 |
| | 1999 | 36,895 | 41,928 | 43,915 | 45,853 | 2121 | 2289 | 2514 | 2626 |
| | 2000 | 43,204 | 51,236 | 54,498 | 57,729 | 2473 | 2738 | 3102 | 3288 |
| | 2001 | 50,591 | 62,611 | 67,632 | 72,681 | 2884 | 3274 | 3829 | 4116 |
| | 2002 | 59,243 | 76,510 | 83,931 | 91,506 | 3362 | 3916 | 4724 | 5154 |
| Tenth Plan | 2003 | 69,373 | 93,495 | 104,159 | 115,206 | 3921 | 4684 | 5830 | 6453 |
| | 2004 | 81,236 | 114,252 | 129,261 | 145,044 | 4571 | 5602 | 7194 | 8079 |
| | 2005 | 95,127 | 139,616 | 160,413 | 182,610 | 5330 | 6699 | 8878 | 10115 |
| | 2006 | 111,394 | 170,610 | 199,072 | 229,906 | 6215 | 8012 | 10955 | 12664 |
| | 2007 | 130,443 | 208,486 | 247,048 | 289,452 | 7247 | 9583 | 13518 | 15855 |

Annexure - X

## PROJECTIONS
## LCV AND HCV POPULATION

| Plan | Year | LCV Population ('000) | | | | HCV Population ('000) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1966-96 Trend | GNP Growth at 6% | GNP Growth at 6.5% | GNP Growth at 7% | 1966-96 Trend | GNP Growth at 6% | GNP Growth at 6.5% | GNP Growth at 7% |
| Eighth Plan | 1997 | 620 | 641 | 647 | 654 | 1476 | 1507 | 1518 | 1528 |
| Nineth Plan | 1998 | 686 | 733 | 748 | 764 | 1575 | 1643 | 1666 | 1689 |
| | 1998 | 760 | 838 | 865 | 892 | 1680 | 1791 | 1828 | 1866 |
| | 2000 | 841 | 959 | 1,000 | 1,042 | 1793 | 1952 | 2007 | 2062 |
| | 2001 | 931 | 1,097 | 1,156 | 1,217 | 1913 | 2128 | 2202 | 2278 |
| | 2002 | 1,031 | 1,255 | 1,336 | 1,422 | 2041 | 2319 | 2417 | 2518 |
| Tenth Plan | 2003 | 1,141 | 1,436 | 1,545 | 1,661 | 2178 | 2528 | 2652 | 2782 |
| | 2004 | 1,263 | 1,643 | 1,786 | 1,940 | 2323 | 2756 | 2911 | 3074 |
| | 2005 | 1,398 | 1,879 | 2,004 | 2,266 | 2479 | 3003 | 3195 | 3397 |
| | 2006 | 1,548 | 2,150 | 2,387 | 2,646 | 2645 | 3274 | 3506 | 3754 |
| | 2007 | 1,713 | 2,460 | 2,759 | 3,091 | 2822 | 3569 | 3848 | 4148 |

Annexure-XI

## FORECAST OF TONNAGE OF TRUCKS

| Plan | Year | Tonnage of trucks (million) | | | |
|---|---|---|---|---|---|
| | | Trend 1966-96 | GNP Growth at 6% | GNP Growth at 6.5% | GNP Growth at 7% |
| Eighth Plan | 1997 | 14.5 | 14.9 | 15.0 | 15.1 |
| Ninth Plan | 1998 | 15.6 | 16.3 | 16.6 | 16.8 |
| | 1999 | 16.7 | 17.9 | 18.3 | 18.5 |
| | 2000 | 18.0 | 19.6 | 20.2 | 20.8 |
| | 2001 | 19.2 | 21.6 | 22.3 | 23.2 |
| | 2002 | 20.6 | 23.6 | 24.7 | 25.9 |
| Tenth Plan | 2003 | 22.1 | 25.9 | 27.3 | 28.9 |
| | 2004 | 23.7 | 28.5 | 30.3 | 32.1 |
| | 2005 | 25.4 | 31.4 | 33.5 | 35.8 |
| | 2006 | 27.3 | 34.4 | 37.1 | 40.0 |
| | 2007 | 29.3 | 37.9 | 41.1 | 44.7 |

ANNEXURE-XII

## LIST OF STATE ROAD TRANSPORT CORPORATIONS/UNDERTAKINGS

1. Andhra Pradesh
2. Arunachal Pradesh *
3. Assam
4. Bihar
5. Goa (Kadamba)@
6. Gujarat
7. Haryana *
8. Himachal Pradesh
9. Jammu & Kashmir
10. Karnataka
11. Kerala
12. Madhya Pradesh
13. Maharashtra
14. Manipur
15. Meghalaya
16. Mizoram *
17. Nagaland *
18. Orissa
19. Punjab Roadways *
20. PEPSU R.T.C.
21. Rajasthan
22. Sikkim *
23-41 Tamil Nadu Corporations @
42. Tripura
43. Uttar Pradesh
44. Calcutta S.T.C.
45. North Bengal S.T.C.
46. South Bengal S.T.C.

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* Departmental Undertakings.
@ Registered under the Companies Act, 1956.

**ANNEXURE XIII**

# FLEET UTILISATION IN STATE ROAD TRANSPORT UNDERTAKINGS

## (PERCENTAGE OF BUSES ON ROAD)

(% AGE)

| STATE ROAD TRANSPORT UNDERTAKING | 1992-93 ACTUALS | 1993-94 ACTUALS | 1994-95 ACTUALS | 1995-96 LAT.EST | 1996-97 ESTIMATE |
|---|---|---|---|---|---|
| 1.Andhra Pradesh | 91 | 96 | 97 | 96 | 96 |
| 2.Arunachal Prad | 81 | 81 | 81 | 81 | 81 |
| 3.Assam | 75 | 60 | 60 | 70 | 75 |
| 4.Bihar | 36 | 33 | 31 | 20 | 29 |
| 5.Goa (Kadamba) | 83 | 78 | 75 | 80 | 82 |
| 6.Gujarat | 82 | 85 | 86 | 86 | 88 |
| 7.Haryana | 95 | 95 | 95 | 95 | 95 |
| 8.Himachal Prade | 95 | 96 | 97 | 97 | 97 |
| 9.Jammu & Kashmi | 11 | 35 | 51 | 50 | 52 |
| 10.Karnataka | 87 | 88 | 89 | 91 | 91 |
| 11.Kerala | 82 | 79 | 79 | 80 | 81 |
| 12.Madhya Prade | 79 | 80 | 82 | 83 | 86 |
| 13.Maharashtra | 88 | 89 | 91 | 92 | 93 |
| 14.Manipur | 39 | 33 | 10 | 50 | 50 |
| 15.Meghalaya | 52 | 18 | 11 | 51 | 53 |
| 16.Mizoram | 39 | 10 | 12 | 15 | 51 |
| 17.Nagaland | 55 | 50 | 10 | 15 | 50 |
| 18.Orissa | 78 | 76 | 71 | 71 | 82 |
| 19.Punjab Roadw | 96 | 96 | 95 | 91 | 95 |
| 20.PEPSU RTC | 92 | 92 | 93 | 93 | 93 |
| 21.Rajasthan | 91 | 89 | 90 | 91 | 92 |
| 22.Sikkim | 73 | 71 | 69 | 68 | 70 |
| 23-A.Tamil Nadu | 92 | 92 | 93 | 95 | 95 |
| 23-B.Tripura | 10 | 50 | 56 | 65 | 70 |
| 24.Uttar Pradesh | 89 | 89 | 87 | 90 | 91 |
| 25.Calcutta STC | 77 | 76 | 75 | 77 | 78 |
| 26.North Bengal | 81 | 80 | 82 | 81 | 86 |
| 27.South Bengal | 72 | 53 | 51 | 55 | 62 |
| ALL INDIA AVERAGE | 87 | 87 | 88 | 89 | 90 |

ANNEXURE -XIV

VEHICLES PRODUCTIVITY IN STATE ROAD TRANSPORT UNDERTAKINGS

(REVENUE EARNING KMS PER BUS HELD PER DAY)

(KMS.)

| STATE ROAD TRANSPORT UNDERTAKING | 1992-93 ACTUALS | 1993-94 ACTUALS | 1994-95 ACTUALS | 1995-96 LAT.EST. | 1996-97 ESTIMATE |
|---|---|---|---|---|---|
| Andhra Pradesh | 289 | 299 | 302 | 303 | 303 |
| Arunachal Pradesh | 106 | 123 | 98 | 112 | 139 |
| Assam | 132 | 124 | 125 | 152 | 205 |
| Bihar | 70 | 67 | 44 | 37 | 55 |
| Goa (Kadamba) | 218 | 201 | 201 | 225 | 230 |
| Gujarat | 271 | 285 | 285 | 286 | 294 |
| Haryana | 301 | 313 | 318 | 307 | 315 |
| Himachal Pradesh | 190 | 202 | 200 | 204 | 211 |
| Jammu & Kashmir | 17 | 12 | 46 | 50 | 62 |
| Karnataka | 264 | 263 | 267 | 275 | 276 |
| Kerala | 244 | 245 | 262 | 268 | 272 |
| Madhya Pradesh | 200 | 201 | 196 | 225 | 210 |
| Maharashtra | 216 | 256 | 270 | 273 | 277 |
| Manipur | 67 | 53 | 61 | 81 | 81 |
| Meghalaya | 83 | 90 | 78 | 92 | 103 |
| Mizoram | 19 | 10 | 45 | 49 | 52 |
| Nagaland | 79 | 83 | 59 | 63 | 84 |
| Orissa | 202 | 212 | 199 | 182 | 225 |
| Punjab Roadways | 236 | 217 | 252 | 254 | 260 |
| PEPSU RTC | 257 | 218 | 260 | 262 | 265 |
| Rajasthan | 269 | 278 | 282 | 283 | 286 |
| Sikkim | 65 | 63 | 63 | 65 | 66 |
| Tamil Nadu | 383 | 381 | 394 | 405 | 415 |
| Tripura | 126 | 152 | 112 | 105 | 123 |
| Uttar Pradesh | 213 | 220 | 210 | 220 | 232 |
| Calcutta STC | 136 | 130 | 131 | 115 | 150 |
| North Bengal STC | 217 | 211 | 217 | 217 | 233 |
| South Bengal STC | 123 | 99 | 106 | 127 | 155 |
| ALL INDIA AVERAGE | 259 | 265 | 271 | 278 | 283 |

ANNEXURE- XV

BUS STAFF RATIO ON FLEET OPERATED IN STATE ROAD TRANSPORT UNDERTAKINGS

(RATIO)

| STATE ROAD TRANSPORT UNDERTAKING | 1992-93 ACTUALS | 1993-94 ACTUALS | 1994-95 ACTUALS | 1995-96 LAT.EST | 1996-97 ESTIMAT |
|---|---|---|---|---|---|
| 1. Andhra Pradesh | 8.47 | 8.29 | 8.19 | 8.12 | 8.05 |
| 2. Arunachal Prades | 5.32 | 5.28 | 5.20 | 5.30 | 5.46 |
| 3. Assam | 10.30 | 11.00 | 15.12 | 13.75 | 12.62 |
| 4. Bihar | 19.00 | 16.00 | 22.00 | 36.00 | 31.00 |
| 5. Goa (Kadamba) | 8.04 | 8.36 | 9.10 | 8.21 | 8.10 |
| 6. Gujarat | 8.18 | 7.47 | 7.47 | 7.47 | 7.47 |
| 7. Haryana | 5.59 | 5.71 | 5.89 | 5.73 | 5.73 |
| 8. Himachal Pradesh | 5.50 | 5.19 | 5.21 | 5.53 | 5.53 |
| 9. Jammu & Kashmir | 9.97 | 11.41 | 9.80 | 8.40 | 8.70 |
| 10.Karnataka | 7.09 | 7.20 | 7.06 | 6.84 | 6.80 |
| 11.Kerala | 10.50 | 10.20 | 9.70 | 9.20 | 8.80 |
| 12.Madhya Pradesh | 10.13 | 10.26 | 10.61 | 10.11 | 9.92 |
| 13.Maharashtra | 7.99 | 7.70 | 7.40 | 7.53 | 7.52 |
| ~~14.~~Manipur | 17.71 | 20.71 | 20.00 | 14.86 | 14.86 |
| 15.Meghalaya | 10.51 | 11.02 | 11.01 | 10.60 | 10.28 |
| 16.Mizoram | 14.83 | 16.76 | 11.83 | 15.12 | 13.80 |
| 17.Nagaland | 9.25 | 9.50 | 12.15 | 11.12 | 9.50 |
| 18.Orissa | 10.02 | 10.12 | 9.02 | 10.14 | 10.73 |
| 19.Punjab Roadways | 5.50 | 5.30 | 5.30 | 5.20 | 5.20 |
| 20.PEPSU RTC | 5.40 | 5.55 | 5.31 | 5.36 | 5.36 |
| 21.Rajasthan | 7.53 | 6.79 | 6.42 | 6.29 | 6.10 |
| 22.Sikkim | 4.10 | 4.80 | 4.80 | 5.40 | 5.10 |
| 23-41.Tamil Nadu | 7.59 | 8.17 | 7.84 | 7.83 | 7.82 |
| 42.Tripura | 11.00 | 17.00 | 14.00 | 12.00 | 11.80 |
| 43.Uttar Pradesh | 8.02 | 7.91 | 7.75 | 7.66 | 7.49 |
| 44.Calcutta STC | 12.91 | 13.13 | 13.08 | 11.91 | 11.73 |
| 45.North Bengal STC | 8.93 | 9.05 | 8.93 | 8.23 | 8.02 |
| 46.South Bengal STC | 7.19 | 9.76 | 10.18 | 9.35 | 8.73 |
| ALL INDIA AVERAGE | 8.07 | 7.95 | 7.86 | 7.82 | 7.78 |

ANNEXURE-XVI

## STAFF PRODUCTIVITY

## (REVENUE EARNING KMS. PER WORKER/DAY)

(KMS.)

| STATE ROAD TRANSPORT UNDERTAKING | 1992-93 ACTUALS | 1993-94 ACTUALS | 1994-95 ACTUALS | 1995-96 LAT. EST | 1996-97 ESTIMATE |
|---|---|---|---|---|---|
| Andhra Pradesh | 36.7 | 38.1 | 38.7 | 39.4 | 39.7 |
| Arunachal Pradesh | 21.3 | 23.6 | 21.3 | 23.7 | 28.8 |
| Assam | 17.0 | 15.0 | 13.8 | 15.8 | 19.0 |
| Bihar | 10.0 | 9.7 | 6.5 | 5.2 | 6.1 |
| Gao (Kadamba) | 32.5 | 30.0 | 30.0 | 32.0 | 32.0 |
| Gujarat | 40.1 | 42.6 | 43.4 | 43.2 | 44.2 |
| Haryana | 55.0 | 56.7 | 56.7 | 57.0 | 57.5 |
| Himachal Pradesh | 35.9 | 38.4 | 38.7 | 38.8 | 39.4 |
| Jammu & Kashmir | 11.6 | 10.5 | 10.3 | 12.0 | 13.5 |
| Karnataka | 40.8 | 10.9 | 42.6 | 44.1 | 44.9 |
| Kerala | 28.0 | 30.0 | 31.0 | 36.0 | 38.0 |
| Madhya Pradesh | 25.0 | 21.2 | 23.0 | 25.9 | 28.1 |
| Maharashtra | 32.2 | 35.5 | 37.2 | 37.7 | 38.7 |
| Manipur | 9.0 | 6.7 | 7.3 | 9.6 | 9.6 |
| Meghalaya | 15.9 | 17.1 | 16.2 | 16.9 | 18.8 |
| Mizoram | 7.0 | 6.2 | 7.1 | 7.0 | 7.4 |
| Nagaland | 13.3 | 17.2 | 11.8 | 12.2 | 15.6 |
| Orissa | 25.0 | 28.0 | 21.0 | 19.0 | 25.0 |
| Punjab Roadways | 43.7 | 16.0 | 17.6 | 48.0 | 45.1 |
| PEPSU RTC | 17.9 | 15.1 | 18.4 | 48.3 | 49.1 |
| Rajasthan | 10.1 | 41.1 | 18.1 | 51.0 | 53.1 |
| Sikkim | 28.0 | 28.0 | 20.2 | 20.4 | 20.7 |
| Tamil Nadu | 16.6 | 17.0 | 50.0 | 50.4 | 51.0 |
| Tripura | 8.3 | 7.5 | 6.3 | 7.9 | 10.3 |
| Uttar Pradesh | 29.8 | 31.2 | 31.2 | 31.5 | 33.2 |
| Calcutta STC | 13.7 | 13.1 | 13.7 | 15.9 | 16.4 |
| North Bengal STC | 30.0 | 29.0 | 30.0 | 32.7 | 33.7 |
| South Bengal STC | 21.0 | 19.2 | 20.4 | 24.7 | 28.6 |
| ALL INDIA AVERAGE | 36.2 | 37.5 | 38.6 | 38.7 | 41.1 |

ANNEXURE – XVII

FUEL EFFICIENCY IN STATE ROAD TRANSPORT UNDERTAKINGS

(Kilometres per litre)

| NAME OF THE S.R.T.U. | 1992-93 ACTUALS | 1993-94 ACTUALS | 1994-95 ACTUALS | 1995-96 LAT. EST. | 1996-97 ESTIMATES |
|---|---|---|---|---|---|
| 1. Andhra Pr. | 4.99 | 5.01 | 5.00 | 5.00 | 5.00 |
| 2. Arunachal Pr. | 3.70 | 3.62 | 2.36 | 3.19 | 3.70 |
| 3. Assam | 4.00 | 4.00 | 4.10 | 4.05 | 4.10 |
| 4. Bihar | 3.88 | 3.91 | 3.93 | 3.95 | 4.00 |
| 5. Goa (Kadamba) | 3.88 | 3.81 | 3.80 | 4.00 | 4.00 |
| 6. Gujarat | 4.99 | 5.01 | 4.84 | 4.80 | 4.82 |
| 7. Haryana | 4.10 | 4.11 | 4.41 | 4.40 | 4.42 |
| 8. Himachal Pr. | 3.34 | 3.39 | 3.39 | 3.42 | 3.45 |
| 9. Jammu & K. | 3.50 | 3.50 | 3.50 | 3.50 | 3.50 |
| 10.Karnataka | 4.19 | 4.17 | 4.47 | 4.48 | 4.50 |
| 11.Kerala | 3.70 | 3.70 | 3.80 | 3.80 | 3.80 |
| 12.Madhya Pr. | 4.21 | 4.21 | 4.23 | 4.27 | 4.35 |
| 13.Maharasthra | 4.59 | 4.62 | 4.61 | 4.62 | 4.63 |
| 14.Manipur | 3.45 | 3.43 | 3.40 | 3.50 | 3.50 |
| 15.Meghalaya | 3.28 | 3.32 | 3.20 | 3.40 | 3.50 |
| 16.Mizoram | 3.20 | 3.00 | 3.10 | 3.10 | 3.25 |
| 17.Nagaland | 3.80 | 3.80 | 3.70 | 3.60 | 3.80 |
| 18.Orissa | 4.12 | 4.10 | 4.00 | 4.30 | 4.40 |
| 19.Punjab Rways | 3.98 | 4.03 | 4.09 | 4.10 | 4.10 |
| 20.PEPSU RTC | 4.19 | 4.21 | 4.25 | 4.26 | 4.26 |
| 21.Rajasthan | 4.79 | 4.75 | 4.75 | 4.79 | 4.79 |
| 22.Sikkim | 3.21 | 3.20 | 3.20 | 3.20 | 3.23 |
| 23-41.Tamil Nadu | 4.28 | 4.23 | 4.21 | 4.21 | 4.28 |
| 42.Tripura | 3.05 | 3.31 | 3.35 | 3.50 | 3.50 |
| 43.Uttar Pr. | 4.50 | 4.56 | 4.51 | 4.53 | 4.60 |
| 44.Calcutta STC | 3.11 | 3.12 | 3.10 | 3.10 | 3.15 |
| 45.North Bengal | 3.80 | 3.80 | 3.83 | 3.91 | 3.93 |
| 46.South Bengal | 3.57 | 3.20 | 3.10 | 3.61 | 3.96 |
| ALL INDIA AVERAGE | 4.18 | 4.18 | 4.17 | 4.18 | 4.50 |

ANNEXURE: XVIII

Earning Structure of Routes operated by SRTUs

| State Road Transport Undertakings | Route Earning profit | | Route Meeting Variable cost only | | Routes not Meeting even variable cost | |
|---|---|---|---|---|---|---|
| | 1992-93 | 1995-96 | 1992-93 | 1995-96 | 1992-93 | 1995-96 |
| Andhra Pradesh | 41 | 41 | 59 | 59 | 0 | 0 |
| Gujarat | 06 | 07 | 66 | 63 | 29 | 29 |
| Haryana | 40 | 30 | 40 | 40 | 20 | 30 |
| Himachal Pradesh | 02 | 09 | 54 | 60 | 44 | 31 |
| Karnataka | 26 | 21 | 36 | 38 | 38 | 42 |
| TamilNadu | 17 | 28 | 83 | 72 | 0 | 0 |
| Uttar Pradesh | 37 | 05 | 62 | 93 | 01 | 02 |
| All SRTUs. | 20 | 19 | 60 | 60 | 20 | 21 |

Source: Planning Commission.

ESTIMATE OF CONTRIBUTION TO PLAN BY STATE ROAD TRANSPORT UNDERTAKINGS

DURING EIGHTH PLAN (1992-97)

ANNEXURE XIX

(RS. CRORE)

| State Road Transport Undertaking | Eighth Plan Estimates: CONT. TO THE PLAN At 1991-92 PRICE/ FARE | ARN | IMPACT OF PRICE INCREASE OVER 1991-92 LEVEL | CONT. TO THE PLAN AT CURRENT LEVEL | Eighth Plan Latest Estimates: CONT. TO THE PLAN At 1991-92 PRICE/ FARE | ARN | IMPACT OF PRICE INCREASE OVER 1991-92 LEVEL | CONT. TO THE PLAN AT CURRENT LEVEL | Excess/Shortfall of Latest Estimates over Plan Estimates: CONT. TO THE PLAN At 91-92 PRICE/ FARE | ARN | IMPACT OF PRICE INCREASE OVER91-92 LEVEL | CONT. TO THE PLAN AT CURRENT LEVEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 (2+3-4) | 6 | 7 | 8 | 9 (6+7-8) | 10 (6 - 2) | 11 (7 - 3) | 12 (8 - 4) | 13 (9 - 5) |
| Andhra Pradesh | 427.02 | 1333.15 | 1104.17 | 656.00 | 251.62 | 1270.00 | 868.72 | 652.90 | -175.40 | -63.15 | -235.45 | -3.10 |
| Arunachal Pradesh | -6.13 | 3.24 | 4.42 | -7.31 | -12.55 | 2.58 | 7.55 | -17.52 | -6.42 | -0.66 | 3.13 | -10.21 |
| Assam | -91.61 | 24.13 | 20.67 | -88.15 | -66.23 | 13.74 | 27.04 | -79.53 | 25.38 | -10.39 | 6.37 | 8.62 |
| Bihar | -106.36 | 46.39 | 49.30 | -109.27 | -63.62 | 4.40 | 37.03 | -96.26 | 42.73 | -41.99 | -12.27 | 13.01 |
| Goa | 3.75 | 17.25 | 14.18 | 6.82 | -1.87 | 11.02 | 17.72 | -8.57 | -5.62 | -6.23 | 3.54 | -15.39 |
| Gujarat | -254.28 | 393.84 | 349.74 | -210.18 | 70.21 | 344.58 | 541.03 | -126.24 | 324.49 | -49.26 | 191.29 | 83.94 |
| Haryana | 59.27 | 268.90 | 114.90 | 213.27 | 52.28 | 196.23 | 209.62 | 38.88 | -6.99 | -72.67 | 94.73 | -174.39 |
| Himachal Pradesh | -192.33 | 88.58 | 97.14 | -200.89 | -85.30 | 22.13 | 100.98 | -154.15 | 107.03 | -56.45 | 3.84 | 46.74 |
| Jammu & Kashmir | -72.76 | 29.55 | 31.45 | -74.66 | -92.83 | 27.11 | 37.59 | -103.31 | -20.07 | -2.44 | 6.14 | -28.65 |
| Karnataka | -287.22 | 771.44 | 319.86 | 164.35 | -194.14 | 427.84 | 481.75 | -248.05 | 93.08 | -343.60 | 161.89 | -412.41 |
| Kerala | -220.12 | 284.70 | 196.00 | -131.42 | -86.67 | 221.37 | 211.35 | -76.65 | 133.45 | -63.33 | 15.35 | 54.77 |
| Madhya Pradesh | 8.57 | 108.40 | 108.35 | 8.62 | 14.53 | 81.27 | 115.69 | -19.89 | 5.96 | -27.13 | 7.34 | -28.51 |
| Maharashtra | 603.46 | 790.00 | 840.00 | 553.46 | 736.55 | 934.74 | 1525.41 | 145.48 | 133.09 | 144.34 | 685.41 | -407.98 |
| Manipur | -7.53 | 2.69 | 2.91 | -7.75 | -9.71 | 1.89 | 1.96 | -9.78 | -2.18 | -0.80 | -1.85 | -1.13 |
| Meghalaya | 1.84 | 0.54 | 3.51 | -1.13 | -0.80 | 2.04 | 4.10 | -2.86 | -2.64 | 1.50 | 0.59 | -1.73 |
| Mizoram | -14.73 | 1.34 | 4.24 | -17.63 | -20.57 | 1.29 | 2.81 | -22.09 | -5.84 | -0.05 | -1.43 | -4.46 |
| Nagaland | -21.20 | 2.76 | 7.01 | -25.45 | -15.52 | 2.85 | 10.44 | -23.11 | 5.68 | 0.09 | 3.43 | 2.34 |
| Orissa | -33.38 | 43.00 | 35.03 | -25.41 | -41.97 | 44.67 | 32.14 | -29.44 | -8.59 | 1.67 | -2.89 | -4.03 |
| Punjab | -88.64 | 123.55 | 96.00 | -61.09 | 15.76 | 98.85 | 130.85 | -16.24 | 104.40 | -24.70 | 34.85 | 44.85 |
| PEPSU RTC | -80.88 | 60.68 | 41.64 | -61.84 | -53.61 | 80.74 | 54.82 | -27.69 | 27.27 | 20.06 | 13.18 | 34.15 |
| Rajasthan | 34.99 | 163.30 | 173.06 | 25.23 | 199.14 | 315.36 | 400.72 | 112.78 | 163.15 | 152.06 | 227.66 | 87.55 |
| Sikkim | -1.83 | 9.75 | 8.38 | -1.46 | -8.91 | 4.47 | 7.45 | -11.89 | -7.08 | -4.28 | -0.93 | -10.43 |
| Tamil Nadu | -111.82 | 867.00 | 966.45 | -211.27 | 227.89 | 536.91 | 1289.53 | -524.73 | 339.71 | -330.09 | 323.08 | -313.46 |
| Tripura | -13.60 | 2.55 | 4.66 | -21.71 | -14.09 | 1.61 | 5.10 | -17.58 | 5.51 | -0.94 | 0.44 | 4.13 |
| Uttar Pradesh | 15.31 | 620.75 | 362.60 | 273.46 | -139.69 | 634.83 | 549.23 | -54.09 | -155.00 | 14.08 | 186.63 | -327.55 |
| Calcutta STC | -24.45 | 62.13 | 64.35 | -26.67 | 1.99 | 67.92 | 85.12 | -22.21 | 29.44 | -14.21 | 20.77 | -5.54 |
| North Bengal STC | -55.49 | 56.79 | 42.63 | -41.33 | -23.91 | 37.96 | 36.66 | -22.61 | 31.58 | -18.83 | -5.97 | 18.72 |
| South Bengal STC | -9.86 | 22.24 | 16.74 | -4.36 | -8.03 | 16.19 | 21.82 | -13.67 | 1.83 | -6.05 | 5.09 | -9.31 |
| Total | -546.01 | 6197.64 | 5079.39 | 572.24 | 631.94 | 5394.19 | 6813.35 | -787.22 | 1177.95 | -803.45 | 1733.96 | -1359.46 |

ARN = Gross yield from fare revision(s).

ANNEXURE XX

YIELD FROM FARE REVISIONS (ARM)

(RS.CRORE)

| State Road Transport Undertaking | ARM TARGET | ARM LIKELY ACHIEVE-MENT | VARIATION OVER TARGET (3 - 2) |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| Andhra Pradesh | 1333.15 | 1270.00 | -63.15 |
| Arunachal Pradesh | 3.24 | 2.58 | -0.66 |
| Assam | 24.13 | 13.74 | -10.39 |
| Bihar | 46.39 | 4.40 | -41.99 |
| Goa | 17.25 | 11.02 | -6.23 |
| Gujarat | 393.84 | 344.58 | -49.26 |
| Haryana | 268.90 | 196.23 | -72.67 |
| Himachal Pradesh | 88.58 | 32.13 | -56.45 |
| Jammu & Kashmir | 29.55 | 27.11 | -2.44 |
| Karnataka | 771.44 | 427.84 | -343.60 |
| Kerala | 284.70 | 221.37 | -63.33 |
| Madhya Pradesh | 108.40 | 81.27 | -27.13 |
| Maharashtra | 790.00 | 934.34 | 144.34 |
| Manipur | 2.69 | 1.89 | -0.80 |
| Meghalaya | 0.54 | 2.01 | 1.50 |
| Mizoram | 1.34 | 1.29 | -0.05 |
| Nagaland | 2.76 | 2.85 | 0.09 |
| Orissa | 43.00 | 44.67 | 1.67 |
| Punjab | 123.55 | 98.85 | -21.70 |
| PEPSU RTC | 60.68 | 80.71 | 20.06 |
| Rajasthan | 163.30 | 315.36 | 152.06 |
| Sikkim | 8.75 | 4.47 | -1.28 |
| Tamil Nadu | 867.00 | 536.91 | -330.09 |
| Tripura | 2.55 | 1.61 | -0.94 |
| Uttar Pradesh | 620.75 | 634.83 | 14.08 |
| Calcutta STC | 62.13 | 47.92 | -14.21 |
| North Bengal STC | 56.79 | 37.96 | -18.83 |
| South Bengal STC | 22.21 | 16.19 | -6.05 |
| Total | 6197.64 | 5391.19 | -803.15 |

ARM = [illegible] on account of additional (gross) from fare revision

ANNEXURE - XXI

## FARE STRUCTURE IN STATE ROAD TRANSPORT UNDERTAKINGS

| NAME OF THE S.R.T.U. | | GROSS FARE PER PASSENGER KM.*(IN PAISE) | | MOTOR VEHICLE TAX/PASSENGER TAX |
|---|---|---|---|---|
| | | PREVIOUS | EXISTING | |
| (1) | | (2) | (3) | (4) |
| Andhra Pradesh | | 01-01-93 | 06-08-95 | |
| | O | 17.00 | 21.00 | M.V.Tax - 13 per cent of Gross Traffic Earnings w.e.f. 02-08-1995. |
| | E | 21.00 | 26.00 | |
| | S.L. | 25.00 | 31.00 | |
| | S.D. | 30.00 | 36.00 | |
| | A.W. | 18.80 | 23.48 | |
| Arunachal Pr. | | 01-06-91 | 01-08-92 | |
| | P | 16.00 | 16.00 | |
| | O.H. | 22.00 | 27.00 | |
| | E.H. | 27.00 | 33.00 | |
| | A.W. | 21.50 | 23.64 | |
| Assam | | 15-10-91 | 21-01-95 | |
| | O | 15.00 | 17.00 | Passenger Tax - 10% of gross fare |
| | E | 16.20 | 18.30 | |
| | S.D. | 20.00 | 22.60 | M.V. Tax- @ Rs 56 per seat per annum. |
| | D | 22.50 | 25.50 | |
| | A.W. | 15.50 | 17.60 | |
| Bihar | | 01-10-90 | 15-06-91 | |
| | O | 14.00 | 16.80 | Passenger Tax-25% of basic fare |
| | E | 17.00 | 20.40 | |
| | D | 22.00 | 26.40 | A.M.V.Tax- @ Rs.416 per seat per annum w.e.f. 01.02.92 |
| | A.W. | 16.80 | 20.16 | |
| Goa (Kadamba) | | 01-07-92 | 01-10-93 | |
| | O&E | 16.00 | 18.00 | |
| | D | 20.00 | 20.00 | |
| | A.W. | 18.00 | 18.00 | |

* Fare a passenger is required to pay - inclusive of passenger tax etc.

| NAME OF THE S.R.T.U. | | GROSS FARE PER PASSENGER KM.*(IN PAISE) PREVIOUS | GROSS FARE PER PASSENGER KM.*(IN PAISE) EXISTING | MOTOR VEHICLE TAX/PASSENGER TAX |
|---|---|---|---|---|
| (1) | | (2) | (3) | (4) |
| Gujarat | | 01-11-90 | 08-01-93 | |
| | O | 13.90 | 20.06 | Passenger Tax - 17.5% of the gross fare collected. M.V. Tax i) Rs.810/-for first nine seats plus Rs 72/- per seat in excess of nine seats and Rs.36/- per standee permitted ii) A surcharge of 60% of the amount calculated as per (i) subject to a maximum of Rs.636/- per bus per annum. |
| | E | 18.06 | 21.52 | |
| | A.W. | 15.15 | 21.10 | |
| Haryana | | 01-01-92 | 08-10-93 | |
| | O | 19.33 | 21.73 | Passenger Tax- 60% of basic fare M.V.Tax - Rs.550 per seat per annum subject to a maximum of Rs.35,000. |
| | E | 21.29 | 27.17 | |
| | S.D. | 28.98 | 32.59 | |
| | D | 38.61 | 43.16 | |
| | A.C. | 67.71 | 76.11 | |
| | A.W. | 19.33 | 21.73 | |
| Himachal Pradesh | | 21-01-92 | 15-10-91 | |
| | O-P | 18.38 | 23.93 | Passenger Tax - 40% of fare plus 20% surcharge on pass.tax. M.V.Tax-Rs.100 per seat subject to Rs 20,000/-. |
| | O-H | 28.59 | 37.23 | |
| | A.W. | 20.60 | 26.80 | |
| Jammu & Kashmir | | 27-11-92 | 21-05-91 | |
| | P-K | 12.27 | 13.62 | Passenger tax - 22%. |
| | P-J | 11.69 | 12.98 | |
| | H-K | 16.95 | 18.82 | |
| | H-J | 16.75 | 18.59 | |

K= Kashmir
J= Jammu

| NAME OF THE S.R.T.U. | | GROSS FARE PER PASSENGER KM.*(IN PAISE) | | MOTOR VEHICLE TAX/PASSENGER TAX |
|---|---|---|---|---|
| | | PREVIOUS | EXISTING | |
| (1) | | (2) | (3) | (4) |
| Karnataka | | 08-06-90 | 18-02-93 | |
| | O | 14.22 | 16.47 | M.V.Tax -17% of gross revenue realised wef 01.04.88. |
| | E | 15.79 | 18.76 | |
| | S.D. | 18.93 | 23.29 | |
| | D | 22.80 | 28.03 | |
| | A.W. | 14.64 (Mofussil) | 17.36 | |
| | | 11.13 (City) | 13.21 (City) | |
| Kerala | | 23-08-92 | 01-04-94 | |
| | O | 15.00 | 18.00 | M.V.Tax per seat is Rs.250 on Ordinary, Rs.300 on Express and Rs.50 per standee per quarter. Plus 10% surcharge + 10% addl. surcharge. |
| | F.P. | 18.00 | 20.00 | |
| | S.F. | 20.00 | 24.00 | |
| | E | 22.00 | 27.00 | |
| | S.E. | 23.00 | 28.00 | |
| | D | 25.00 | 30.00 | |
| | A.W. | 17.01 | 20.26 | |
| Madhya Pradesh | | 07.02.91 | 26-12-91 | |
| | O | 18.50 | 22.00 | Composite Tax per seat w.e.f. January, 1992 Ordinary upto 80 kms. = Rs.64.00 For every addl. 10 kms. = Rs.6.60 Express For every 10 kms. or part thereof = Rs.8.25 |
| | E | 21.60 | 27.50 | |
| | N | 19.80 | 25.30 | |
| | L/D | 25.20 | 33.00 | |
| | A.W. | 18.00 | 23.00 | |
| Maharashtra | | 12-05-90 | 10-01-93 | |
| | O | 16.66 | 20.83 | M.V.Tax- Rs.71 per seat & Rs.18 per admissible standee i.e. 25% of seating capacity. Rs.3766/- per annum for seating capacity 50+12 and Rs.4068/- p.a. \for seating capacity 54+13. Pass. Tax - 17.5% of the mofussil services & 3.5% of the city services earnings. |
| | E | 18.33 | 23.33 | |
| | N.S. | 20.00 | 25.00 | |
| | S.L. | 21.66 | 29.17 | |
| | L | 29.16 | 37.50 | |
| | D | - | 15.83 | |
| | A.C. | 50.00 | 66.67 | |
| | City | 23.28 | 29.72 | |
| | A.W. | 19.39 | 21.28 | |

| NAME OF THE S.R.T.U. | | GROSS FARE PER PASSENGER KM.*(IN PAISE) | | MOTOR VEHICLE TAX/PASSENGER TAX |
|---|---|---|---|---|
| | | PREVIOUS | EXISTING | |
| 1) | | (2) | (3) | (4) |
| Manipur | | 01-03-91 | 01-04-93 | |
| | O-P | 16.00 | 20.00 | Passenger Tax- 6% of basic fare plus Rs.350/- per bus per quarter seat per annum. Road Tax- Rs.344/- per annum. |
| | O-H | 18.00 | 22.00 | |
| | E-P | 19.00 | 22.00 | |
| | D | 23.00 | 28.00 | |
| | A-W | 20.00 | 24.00 | |
| Meghalaya | | 01-07-93 | 18-10-94 | |
| | O&E | 22.00 | 24.00 | Passenger Tax - 10% of fare. M.V.Tax - Rs.14 per seat per annum. |
| | S.D. | 26.00 | 26.00 | |
| | D | 31.00 | 33.00 | |
| | A.W. | 23.00 | 25.00 | |
| Mizoram | | 15-02-93 | 01-04-95 | |
| | O/E | 25.00 | 30.00 | |
| | S.D. | 30.00 | 35.00 | |
| | D | 35.00 | 40.00 | |
| | N | 40.00 | 40.00 | |
| | A.W. | 26.00 | 31.00 | |
| Nagaland | | 15-12-90 | 01-06-93 | |
| | O | 17.00 | 20.00 | M.V.Tax-Rs.60.00 per seat per annum. Road Tax-Rs.1500 per bus for 5 years |
| | E | 20.00 | 24.00 | |
| | D | 25.00 | 30.00 | |
| | S.D. | 30.00 | 35.00 | |
| | A.W. | 19.80 | 24.30 | |
| Orissa | | 01-11-92 | 01-08-91 | |
| | O | 16.00 | 18.00 | Tax Per Seat Per Annum M.V.Tax - upto 160 kms = Rs.143, upto 240 kms = Rs.163, upto 320 kms = Rs.204 and above 320 kms = Rs.245. Addl.M.V.Tax- Rs.400 to Rs.965 on Ordinary and Rs.746 to 1455 on Express services varying on distance slabs. |
| | E | 18.00 | 20.00 | |
| | S.F. | 22.00 | - | |
| | D | 25.00 | 27.00 | |
| | A.W. | 16.80 | 19.00 | |

| NAME OF THE S.R.T.U. | | GROSS FARE PER PASSENGER KM.*(IN PAISE) | | MOTOR VEHICLE TAX/PASSENGER TAX |
|---|---|---|---|---|
| | | PREVIOUS | EXISTING | |
| (1) | | (2) | (3) | (4) |
| Punjab & PEPSU RTC) | | 01-11-92 | 09-11-94 | Special Road Tax (paise per seat per km. per day |
| | O | 21.13 | 25.00 | O - 4.65 |
| | E | 26.41 | 31.25 | E - 5.81 |
| | S.D. | 31.70 | 37.50 | SD- 6.97 |
| | D | 12.26 | 50.00 | D - 9.30 |
| | A.C. | 73.95 | 87.50 | AC-16.27 |
| | A.W. | 21.13 | 25.00 | M.V. Tax - Rs.500 per annum |
| Rajasthan | | 10-03-93 | 01-08-91 | |
| | O | 19.00 | 20.50 | Special Road Tax - i)On Ordinary Services - 21 paise per seat per 10 kms. for the entire distance to be covered during the month provided that for the months of July & August the rate shall be 19 paise per seat for 10 kms. plus 10% as surcharge. ii)On Express Services 23 Paise per seat per 10 kms. for for entire distance to be covered during the month plus 10 % as surcharge. iii) On Semi Deluxe Services and Deluxe Services 40 Paise and 45 Paise respectively per seat per 10 Kms. for entire distance to be covered during the month. Plus 10% as surcharge. Road Tax for vehicles upto 10 seats Rs 15 per seat per quarter and for vehicles more than 40 seats, Rs 20 per seat per quarter.Plus surcharge @ 20 %. |
| | E | 23.00 | 25.00 | |
| | S.D | 27.00 | 29.50 | |
| | D | 40.00 | 43.50 | |
| | A.C. | - | 76.00 | |
| | A.W. | 20.58 | 22.02 | |

| NAME OF THE S.R.T.U. | | GROSS FARE PER PASSENGER KM.*(IN PAISE) | | MOTOR VEHICLE TAX/PASSENGER TAX |
|---|---|---|---|---|
| | | PREVIOUS | EXISTING | |
| (1) | | (2) | (3) | (4) |
| Sikkim | | 01-06-90 | 10-11-92 | |
| | O&F | 30.00 | 31.00 | |
| | S.D. | 35.00 | 12.00 | |
| | D | 51.00 | 85.00 | |
| | A.W. | 30.00 | 31.00 | |
| Tamil Nadu | | 01-11-91 | 01-12-93 | |
| | O | 12.50 | 11.00 | M.V.Tax-Rs.60 per seat /standee per Quarter for Metro bus to Rs.150 for buses plying on Mufussil/Ghat/ Express Routes w.e.f. 1.1.1991 |
| | F | 13.00 | 11.50 | |
| | H | 13.00 | 11.50@ | |
| | D | 11.50 | 17.00 | |
| | AW | 13.26 | 11.50 | |
| Tripura | | 15-03-91 | 01-06-91 | |
| | O | 15.00 | 18.00 | M.V.Tax-Rs 1134 for 27 seats; Plus Rs.27 per seat. |
| | E | 18.00 | 22.00 | |
| | D | 25.00 | 35.00 | |
| | A.W. | 16.85 | 22.60 | |
| Uttar Pradesh | | 11-06-92 | 08-06-91 | |
| | O-P | 20.90 | 21.10 | Passenger Tax - 16% of net fare. Plus Insurance Tax-@ 5 % of passanger tax. Additional tax (surcharge) @ 10 paise per passenger. |
| | O-H | 33.10 | 38.10 | |
| | SD-P | 26.10 | 30.10 | |
| | SD-H | 11.80 | 18.00 | |
| | D-P | 35.50 | 10.90 | |
| | D-H | 56.80 | 65.30 | |
| | A.W. | 21.00 | 21.10 | |

@ Plus 0.15 paise for every block of 30 kms.

| NAME OF THE S.R.T.U. | | GROSS FARE PER PASSENGER KM.*(IN PAISE) | | MOTOR VEHICLE TAX/PASSENGER TAX |
|---|---|---|---|---|
| | | PREVIOUS | EXISTING | |
| (1) | | (2) | (3) | (4) |
| Calcutta STC | | 28-09-92 | 18-03-91 | |
| (City) | O/Spl. | 16.10 | 18.10 | Road Tax - per annum for inter-state service: i)Rs.2100 for 26 seats plus Rs.55 per seat upto 32 seats. ii)Rs.2475 for 33 seats plus Rs.40 for every additional seat. Passenger Tax - Nil. |
| (Intra State) | F | 16.00 | 18.00 | |
| (Inter State) | E | 18.00 | 20.00 | |
| | A.W. | 16.08 | 18.09 | |
| North Bengal STC | | 28-08-92 | 18-03-91 | |
| (City) | O | 12.00 | 11.00 | |
| (Intra State) | F | 15.00 | 18.00 | |
| (Intra State) | E | 17.00 | 20.00 | |
| | D | 23.00 | 21.00 | |
| | H | 35.00 | 35.00 | |
| | A.W. | 15.01 | 17.31 | |
| South Bengal STC | | 28-09-92 | 18-03-91 | |
| (City) | O | 12.00 | 13.00 | Road Tax- per annum for inter-state service. i) Rs.2100 for 26 seats plus Rs.55 per seat upto 32 seats. ii) Rs.2475 for 33 seats plus Rs.10 for every additional seat. Passenger Tax - Nil. |
| | E | 16.00 | 18.00 | |
| | D | 23.00 | 23.00 | |
| | A.W. | 16.00 | 17.50 | |

* Fare a passenger is required to pay - inclusive of passenger tax etc.

O = Ordinary; E = Express; P = Plains; S.L = Semi Luxury; L = Luxury; D = Deluxe; S.D. = Super Deluxe; N = Night; P = Plains; H= Hills/Ghats; F.P. = Fast Passenger; S.F.= Super Fast; S.E.= Suer Express; D-P = Deluxe Plains; D-H = Deluxe Hills; A.C. = Air conditioned.

A.W. = Average weighted fare is based on actual volume of operations and earnings from different services/routes - Plains, Hills, Ordinary, Express, etc.

ANNEXURE–XXII

NORMS ADOPTED FOR DECLARING A BUS AS AN OVERAGED

| STATE ROAD TRANSPORT UNDERTAKING | | PERFORMANCE IN KMS. (LAKH) | PERFORMANCE IN YEARS |
|---|---|---|---|
| Andhra Pradesh | | 8.50 | 7.00 |
| Arunachal Pradesh | | 1.35 | 7.00 |
| Assam | | 5.50 | 8.00 |
| Bihar | | 5.00 | 8.00 |
| Goa (Kadamba) | | 7.00 | 8.00 |
| Gujarat | | 7.00 | - |
| Haryana | | 6.00 | 8.00 |
| Himachal Pradesh | | 5.00 | - |
| Jammu & Kashmir | | 5.00 | 10.00 |
| Karnataka | | 7.00 | 10.00 |
| Kerala | | - | 7.00 |
| Madhya Pradesh | | - | 9.00 |
| Maharasthra | | 5.50 | 8.00 |
| Manipur | | 3.00 | 8.00 |
| Meghalaya | | 4.00 | 6.00 |
| Mizoram | | 1.35 | 7.00 |
| Nagaland | | - | 6.75 |
| Orissa | TATA | 4.80 | 9.00 |
| | LEYLAND | 5.80 | 9.00 |
| Punjab Roadways | | 5.25 | 7.00 |
| PEPSU RTC | | 5.50 | 7.00 |
| Rajasthan | | 6.00 | 7.00 |
| Sikkim | | - | 9.00 |
| Tamil Nadu | EXPRESS | - | 3.00 |
| | OTHERS | - | 8.00 |
| Tripura | | 3.00 | 8.00 |
| Uttar Pradesh | | 6.17 | 9.00 |
| Calcutta STC | SINGLE D. | 4.00 | 8.00 |
| North Bengal STC | | 6.00 | 8.00 |
| South Bengal STC | | 4.00 | 8.00 |

ANNEXURE XXIII

## State Road Transport Undertakings

### Requirement of Buses during IX Plan

| Year | Number of Buses | | | |
|---|---|---|---|---|
| | Replacement | Augmentation | | Total |
| | | Alt.A | Alt.B | Alt A Alt B |
| 1 | 2 | 3 | 4 | 5 6 |
| 1997-98 | 12777 | 1000 | 2900 | 13777 15,677 |
| 1998-99 | 12777 | 1000 | 2900 | 13777 15,677 |
| 1999-2000 | 12777 | 1000 | 2900 | 13777 15,677 |
| 2000-2001 | 12777 | 1000 | 2900 | 13777 15,677 |
| 2001-2002 | 12777 | 1000 | 2900 | 13777 15,677 |
| Total IX Plan | 63885 | 5000 | 2900 | 68885 78,385 |

### Estimated Cost of Buses

(Rs. Crore)

| No. of Buses | At Constant (1996-97) Price @ Rs. 8 lakh each | At Current Prices Assuming 7% increase in cost p.a |
|---|---|---|
| Alternative A | Total Cost | Total Cost |
| 68,885 | 5510.80 | 6804.46 |
| Alternative B | | |
| 78,385 | 6260.80 | 7742.87 |

1) Alt. A is based on minimum expansion (1000 buses p.a) in fleet.

2) Alt. B is based on reasonable expansion (3% growth in case of SRTUs having own funds to finance acquisition & 2% growth in case of other SRTUs who donot have own funds).

ANNEXURE - XXIV

## RESOURCE MOBILISATION DURING THE IXTH PLAN

ADDITIONAL RESOURCE MOBILISATION (@ 6 %) (RS. CRORE)

| YEAR | 1997-1998 | 1998-1999 | 1999-2000 | 2000-2001 | 2001-2002 | 1997-2002 |
|---|---|---|---|---|---|---|
| 1997-1998 | 510 | 555 | 570 | 585 | 600 | 2850 |
| 1998-1999 | - | 610 | 630 | 645 | 660 | 2545 |
| 1999-2000 | - | - | 685 | 700 | 720 | 2105 |
| 2000-2001 | - | - | - | 760 | 780 | 1540 |
| 2001-2002 | - | - | - | - | 810 | 840 |
| 1997-2002 | 510 | 1165 | 1885 | 2690 | 3600 | 9880 |

ADDITIONAL RESOURCE MOBILISATION (@ 10 %) (RS. CRORE)

| YEAR | 1997-1998 | 1998-1999 | 1999-2000 | 2000-2001 | 2001-2002 | 1997-2002 |
|---|---|---|---|---|---|---|
| 1997-1998 | 930 | 955 | 980 | 1000 | 1035 | 1900 |
| 1998-1999 | - | 1010 | 1010 | 1065 | 1095 | 1210 |
| 1999-2000 | - | - | 1095 | 1125 | 1155 | 3375 |
| 2000-2001 | - | - | - | 1170 | 1205 | 2375 |
| 2001-2002 | - | - | - | - | 1265 | 1265 |
| 1997-2002 | 930 | 1965 | 3115 | 1360 | 5755 | 16125 |

Annexure XXV

## NINTH PLAN

## Proposed Outlay for Road Transport Sector

(Rs. in crore)

| S.No. (I) | Programme (II) | Proposed Outlay (III) |
|---|---|---|
| **I.CENTRAL SECTOR** | | |
| 1. | Delhi Transport Corporation | * |
| 2. | Capital Contribution to SRTCs | 63 |
| 3. | Road Safety Programme | |
| | i) Road Safety Cell | 5 |
| | ii) Training of Instructors For Driving Skill | 5 |
| | iii) Publicity | 10 |
| | iv) Grant-in-aid for Road Safety(to States) | 30 |
| | v) Road Safety Equipment | 25 |
| | vi) National Highway Patrolling Scheme | 25 |
| | vii) Training of Drivers in Unorganised Sector | 2 |
| | Sub Total | 102 |
| 4. | Pollution Testing Equipment (Grants to States) | 50 |
| 5. | Control of Vehicular Pollution | 2 |
| 6. | Human Resource Development-Training Programme | 10 |
| 7. | R&D Schemes | 50 |
| 8. | Strengthening of CIRT, Pune | 5 |
| 9. | Improvement of Data Collection- Transport Research Wing | 1 |

(xxxx)

ANNEXURE - XXV Contd.

| (I) | (II) | (III) |
|---|---|---|
| 10. | Computerisation | Included in Scheme (12) |
| 11. | Transport Studies | 5 |
| 12. | National Data Base Network | 25 |
| 13. | Publicity for Energy Conservation | 5 |
| 14. | National Road Transport Finance Corporation | 10 |
| | **Total** | **328** |

II.STATE SECTOR

| | | |
|---|---|---|
| 1. | Fleet Acquisition by SRTUs<br>i) Replacement a/c -63885 Buses<br>ii)Augmentation a/c-14500 Buses | 6,271 |
| 2. | Development of Infrastructure - Workshop facilities etc. | 500 |
| 3. | Strengthe<br>Vehicle C | 50 |
| 4. | Setting L<br>Transport ions | 200 |
| 5. | Equipment & Manpower for Data base Network | 50 |
| 6. | Road Safety Programme | 100 |
| 7. | Productivity Improvement, R & D etc. | 50 |
| 8. | Human Resource Development | 50 |
| | **Total** | **7,271** |
| **9.** | **Grand Total (I+II)** | **7,599** |

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* Since Transferred to National Capital Territory of Delhi.



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