CHAPTER 9

CONCLUSIONS AND RECOMMENDATIONS
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9.1 In this chapter an attempt is made to provide a brief summary of the management planning and control systems in State Transport Undertakings, offer some conclusions based on the study and finally suggest some recommendations.

9.2 Immediately after Independence of the country in 1947, Government of India realised that provision of a passenger road transport system so important and stupendous in size and resource needs could not be handled unless it steps in. This resulted in a large scale expansion of the public sector road transport undertakings already existing, and starting of new undertakings in those areas where none existed earlier. The State Transport Undertakings had a very rapid growth during the last two decades. Along with the growth in the size of the organisations, there was need for developing suitable management planning and control systems. The present research project's main objective is to study the existing management planning and control systems in some of the larger State Transport Undertakings in India. The management planning and control systems existing in the five of the large STUs were studied.

9.3 MANAGEMENT PLANNING AND CONTROL: SOME BASIC CONCEPTS

The activities of planning and control are critical in the effective management. The history of management indicates that planning and control concepts exist right from Sumerian civilization,
five thousand years ago. In 1910, Fayol listed planning, organisation, command, co-ordination and control as the important managerial functions. For the past 60 years, following Fayol the usual practice has been to identify planning and control as two separate functions of management. Until 1965, most of the thinking in management planning and control has been based on the premise that planning and control activities while closely linked are different in nature and purpose. The major break-through in the area of planning and control took place in about 1965, when Prof. R.N. Anthony of the Harvard Business School put forward his famous framework for analysis of management planning and control systems. Anthony's basic thesis is that thinking of planning and control as two separate and homogeneous activities in an organisation is not only meaningless but dysfunctional. According to him it makes much more conceptual and practical sense to link together planning and control activities and divide them into three categories, strategic planning, management control and operational control.

According to him, the strategic planning is the process of deciding on the objectives of the organisation, on changes in these objectives, on the resources used to attain the objectives and on the policies that are to govern the acquisition, use and disposition of the resources. Within the framework of the strategic planning, management control process takes place in which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organisation's objectives. Operational control is the process of assuring that specific tasks are carried out effectively and efficiently.
The review of literature indicates that the Anthony's framework is generally appreciated since the neatness of Anthony's conceptual framework enables the designers and researchers of the planning and control systems to analyze the problems faced by them in a systematic way. Detailed study of the criticisms of Anthony's framework indicates that they are more a problem of semantics and are very trivial.

The study also revealed that top management in any organization does most of the strategic planning. Middle management makes most of the management control decisions, while supervisors and junior managers make some management control decisions and most of the operational control decisions. Most of the strategic planning decisions are operationalized through corporate planning process. Similarly, budgeting and budgetary control is a tool through which most of the management control decisions are implemented. Cost controls and other control procedures take care of the operational control problems.

9.4 CORPORATE PLANNING:

Corporate planning is a systematic approach to clarify corporate objectives, making strategic decisions and checking progress towards the objectives. Except framing philosophies like "Where there is a road, there is a State Transport bus", "Service is our motto", etc., the STUs have not clearly identified their corporate objectives. The study of the Road Transport Corporations Act, 1950 revealed that Sections (3), (16), and (22) discuss the objectives of an STU, but an indelth analysis indicated that the factors indicated in the Act are the means rather than the ends or objectives of the STUs.
Hence after a detailed study the objectives of the STUs towards the investor, i.e., Government, passengers, employees and the community were identified. The most important corporate objectives which are achieved through the corporate planning process are Return on Investment and growth.

The study revealed that in none of the STUs studied a clear-cut decision was made by the Corporation Board regarding ROI and communicated to the managers. Only in APSRTC, a minimum ROI of 12% is fixed for introducing services on new routes. None of the managers are given ROI targets for achievement.

The STUs have indicated various reasons like operating too many uneconomic routes, operation of services on 'kutcha' or bad roads, operation of old fleet, too many concessions to students etc. as the reasons for their inability to achieve adequate Return on Investment. However, except in GRTC, in no other STU the social and economic factors affecting ROI are quantified. In none of the STUs, maximum limits or 'ceilings' were fixed for some of the significant social costs adversely affecting the ROI. In 3 of the STUs (APSRTC, UPSRTC and KSRTC), the 'Sensitivity analysis' of identifying the effect of different major factors like vehicle utilisation, fleet utilisation, and oil consumption etc., on ROI is not being done. Only in 2 STUs (KSRTC and GRTC) the exercise of 'sensitivity' analysis of major factors affecting ROI was introduced recently.

Augmentation and expansion or nationalisation of services result in the growth of an STU. All the 5 STUs consider growth as an essential criteria in their business performance. Except GRTC
the others do not make any systematic analysis to determine the
growth rate. Only GSRTC has scientifically worked out its growth
rate. The detailed plans for nationalisation does not exist in
2 (KSRTC and UPSRTC) of the STUs where nationalisation is not
completed. Their main argument for not planning nationalisation or
expansion on a systematic manner is that the nationalisation is a
political decision of the Government in power and that an STU cannot
do anything by itself except in the context of the thinking of the
Government of the day.

In 4 of the 5 STUs studied, there are no plans to diversify
business and enter allied areas like manufacture of tyres, spare
parts, etc. They are also against diversification. However, APSRTC
is planning to diversify business and has already committed resources
and finances for the manufacture of tyres, development of tourism
etc. It is also planning to start a number of industries to
manufacture thin-walled bearings, pistons, etc. Very strong and
divergent opinions exist between the chief executives of the 4 STUs
and the chief executive of APSRTC with regard to business
diversification.

In none of the 5 STUs studied analysis of their strengths,
weaknesses, opportunities and threats is made during the corporate
planning process. Detailed environmental and internal appraisal is
also absent in the STUs studied. The 'gap analysis' is also not
practised systematically. Participation of the managers and
monitoring of the plan is also absent in the five State Transport
Undertakings studied.
In 3 of the 5 STUs studied, there is no linkage between the long run corporate plans and the short run plan of budgeting. In none of the 5 STUs studied corporate policy guidelines are issued by the corporate management to the divisional managers and other managers who are expected to prepare the budgets. In 4 of STUs studied the budget is prepared division-wise and no depot-wise budgets are prepared. Only in APSRTC detailed depot-wise budgeting is practised. Another basic difference in the budgeting system of APSRTC compared to the other 4 STUs is that there is considerable participation of the managers in the budgeting and budgetary control process and the depot managers are actively involved in APSRTC. In the other 4 STUs, the budgeting and budgetary control process does not ensure adequate participation of the managers.

The target setting process in APSRTC is more scientific and systematic compared to the other 4 STUs. Only in APSRTC the performance evaluation is based on the targets fixed in the budget and formal monthly meetings are conducted regularly to evaluate the performance of the divisions and depots. There are incentive schemes in 3 of the 5 STUs studied to motivate the depot manager and his team to improve the performance. Only in APSRTC the criteria for comparison is the budget achievement and in the other two (GSRTC and KSRTC) the criteria is the last year's performance. In 3 of the STUs studied promotions for Depot Managers are based on seniority. Hence the "Best depot incentive award" in some of the STUs has only limited value to the depot managers. The study reveals that APSRTC budgeting and budgetary control process is superior in design compared to the other 4 STUs.
9.6 PLANNING AND CONTROL SYSTEMS IN FLEET MAINTENANCE MANAGEMENT

Some of the strategic planning areas in fleet maintenance management are the selection of the right type of vehicles and other major resources like tyres etc., deciding on the optimum life of vehicles and other major policies of maintenance like whether to complete overhaul a vehicle or not, the percentage of spare vehicles in the fleet etc. The middle managers in the fleet maintenance function are responsible for some of the management control decisions like deciding the various preventive maintenance schedules, ensuring that the maintenance is going on according to the schedules, controlling breakdowns and non-scheduled repair work, budgeting and cost controls. Operational control in this area include activities like asuring that maintenance or repair of a particular vehicle is properly carried out, to see that individual production or repair jobs are properly carried out and cost controls.

The study revealed that in two of the STUs (KRTTC and UPSRTC) no study was conducted so far to find out as to which make of the vehicle is best suited for them. The KRTTC conducted a study in 1955 and has not updated it till now. The APSRTC’s study was made in 1968 and GRTTC carried out the study in 1972. The GRTTC’s study was more comprehensive. In 3 of the STUs (KRTTC, UPSRTC and APSRTC) no study was conducted to find out the economically and operationally better vehicle(s) for operations on bad roads. In KRTTC and GRTTC such studies were conducted and Leyland vehicle was found to be better compared to the other makes for bad road operations. In 4 of the STUs (APSRTC, KRTTC, MSRTC and GRTTC), there is standardisation of fleet within
the corporation. The fleet is standardised on a division-wise/
region-wise basis taking into account road conditions etc. In UPRTC,
such standardisation does not exist and many depots have more than
one make of vehicles. The study revealed that in all the 5 STUs studied,
there is an agreement in the opinion that different makes or brands of
tyres will have different tyre lives. The analysis of statistics of
operational performance in some of the STUs revealed that not only
the average tyre life varies considerably from one STU to the other,
but within the same STU, lives obtained from different makes of tyres
is different. In 3 of the STUs (NSRTC, KRTC and UPRTC) a detailed
study has been carried out so far to find out the relative performance
of different makes of tyres. In the other two STUs (APRTC and GSRTC)
such studies were conducted. It was found that ply-rating and tread
pattern have significant impact on tyre life, but none of the 5 STUs
have carried out any study to find out the right ply rating and tread
pattern for their operating conditions.

The study revealed that all the 5 STUs studied have a replacement
policy. In 3 STUs (APRTC, UPRTC and GSRTC) the replacement is based
on the age of the vehicle in kms; whereas in the other two STUs
(NSRTC and KRTC) it is based on the age of the vehicle both in kms,
as well as years. In all the 5 STUs studied the replacement age of
the vehicles is the same for city as well as non-city operations.
The present replacement policy in NSRTC was decided in 1955 and the
present KRTC’s replacement policy was decided in 1963. Though a
number of changes have come in the design of vehicles and models,
have changed, replacement policies in these STUs have not undergone
any change. The study reveals that except in APSRTC and to some extent in GSRTC, in the other STUs the replacement age was not decided on scientific basis. After reviewing the various studies made so far in the area of replacement of vehicles, a 'model' was built to demonstrate the methodology for finding out the optimum life of a vehicle. The information was collected from one of the depots in APSRTC. A number of significant observations could be made from this study of replacement of vehicles.

To keep the scheduled services running efficiently, spare vehicles are provided. The study revealed that the percentage of spare vehicles provided varies considerably from one STU to the other, both in policy as well as in the actual practice. The policy varies from 12½% spares provided in APSRTC to 26% provided in UFSRTC. Similarly, the actuals in 1974-75, vary from 17.19% in APSRTC to 51% in UFSRTC. The UFSRTC's policy is to keep 18% spares, but in actual practice it had nearly 44% spare vehicles during 1974-75.

An attempt was made to study this problem and to work out the spare vehicles requirement. It was found that for a typical organisation with maintenance schedules similar to most of the STUs studied about 8% spares will be adequate to take care of the maintenance and complete overhauling requirements. Hence the total spares including traffic spares can be restricted to around 10 to 12% compared to the present actuals of about 35% to 51%.

Preventive maintenance system is in existence in all the 5 STUs studied. The study revealed that except in APSRTC and GSRTC, in the other STUs there is no regular review and revision of the preventive maintenance schedules. Except in APSRTC, in all the other 4 STUs, a three-tier system
is being practised by carrying out maintenance at depot, divisional and central/regional workshops. In APSRTC the maintenance is carried out on a two tier system in which maintenance is carried out at depot and central/regional workshops levels only. Except in CSRTC, in all the other 4 STUs, vehicles are completely overhauled twice or thrice during their life. In CSRTC, the practice of complete overhauling of vehicles was stopped from 1964-65. The CSRTC's material costs are substantially lower compared to the 5 STUs studied and the top management of the CSRTC feels that one of the main reasons for this comparatively lower costs is due to their system of operation without complete overhauls.

In all the 5 STUs studied, there is system-wise analysis of breakdowns, i.e. breakdowns are analysed whether they are due to fuel system, cooling system, brake system etc. However, there is no control by exception by classifying the breakdowns into A, B, C classes and concentrating action on 'A' class breakdowns. Similarly, in none of the 5 STUs studied, there is cause-wise analysis of each breakdown, i.e. analysis according to whether the breakdown is due to human failure, material or design failure or due to deficiency in the maintenance system. In the absence of cause-wise analysis of breakdowns at depot level, there is no subsequent system-wise and cause-wise (within each system) reporting or analysis of breakdowns at higher levels of management.

In none of the 5 STUs studied, the non-scheduled repair work is analysed even at the depot level. Incidence of non-scheduled repair work like incidence of breakdowns is an important index of preventive maintenance performance.
Only in 2 STUs (MSRTC and KSRTC) there is a regular reporting system up to the corporation board level to indicate the variance between the number of preventive maintenance schedules actually carried out and the number of preventive maintenance schedules planned.

A study of the two depots in the city division of APSRTC revealed that following the same preventive maintenance system and operating under similar conditions, a depot with better implementation of the planned preventive maintenance schedules has shown better results compared to the other.

9.7 PLANNING AND CONTROL SYSTEMS IN TRAFFIC OPERATIONS

Laying down policies in nationalisation, profitability of routes, optimisation of vehicle utilisation through better scheduling policies, 'service-mix' and 'schedule-mix' are some of the strategic planning decisions in the traffic operations function. The executive management is responsible for controlling the route profitability, pilferage of revenue, quality of service, costs etc.

In 4 of the STUs (MSRTC, UPSRTC, MSRTC and KSRTC) the return on investment is not worked out before taking up operations on new routes. Only in APSRTC, the ROI is worked out and normally no route is started unless it is expected to give at least 12% ROI. The augmentation decision is made in all STUs by using the load factor as the criteria. In APSRTC and OSRTC augmentation through additional trips is made on the routes where the load factor is at least 80%. In MSRTC, it is 95%, whereas in KSRTC it is 90%. In UPSRTC it is 75%.
Except in APSRTC, in none of the other 4 STUs the depot manager is delegated with the authority for making changes in the schedules operated exclusively by the depot without any overlap with other depot schedules. In all the 5 STUs the divisional managers are delegated with the authority to decide inter-depot schedules within a division. The Chief Traffic Manager or the Dy. General Manager (Operations) is responsible for inter-divisional and long distance service schedules, which pass through more than one division.

It was reported in all the STUs that one of the major constraints in the process of optimising the vehicle utilisation is the vehicle condition. However, in 4 of the STUs (NSRTC, UPRTC, GSRTC and KSRTC), there is no co-relation between vehicle condition and vehicle scheduling. In all these 4 STUs a new vehicle is supplied to depots to replace an old vehicle, when it is scrapped. Only in APSRTC new vehicles are supplied to replace vehicles operating schedules which give more than 400 kms./day. Hence in 4 of the STUs, some of the new vehicles are utilised on schedules which give low vehicle utilisation though the vehicle due to its newness is capable of giving more vehicle utilisation. The opinion survey conducted at C.I.R.T., Pune and in the STUs, revealed that out of the total life of 5.0 lakhs kms. (with two complete overhauls at 2.5 lakhs and 4.00 lakhs kms. of life) a total of 2.00 lakh kms. of the vehicle life will easily be available for a daily operation of 400 kms. and above, a total of 1.65 lakh kms. of vehicle life for a daily operation of schedules between 300-400 kms. per day and the remaining 1.35 lakh kms. of the vehicle life on schedules with less than 300 kms. per day. Hence in any organisation
there can be a 'schedule-mix' of 211.65:1.35 of schedules capable of giving more than 400 kms., 300-400 kms. and less than 300 kms. vehicle utilisation per day. However, even in APSRTC where the vehicle utilisation is maximum compared to the other 4 STUs, the 'schedule-mix' ratio was observed to be 1:4:12, indicating that there is tremendous potential to increase the vehicle utilisation.

In 4 of the STUs (JBSRTC, GJRTC, KRTC and UPRTC) the earning per km. is used as the criteria to evaluate the profitability of the schedules/routes. In APSRTC the route profitability is based on break-even concepts. The study revealed that SPK is not a correct index for measuring the profitability of a route. The unit cost curve based on the break-even concepts indicate the correct reflection of the profitability of the routes and unit cost curves can be used as a means for effective delegation and control in optimising route profitability.

For proper assessment and control of traffic it is essential to work out the traffic flow, point to point of the route and at different times of the day or month or year. The average load factor of the route does not correctly reflect the traffic flow point to point of the route. The study revealed that sector-wise analysis if properly carried out is likely to improve the average load factor, SPK, profitability and reduces overloading of buses between some sectors of heavy traffic density. Only APSRTC is using sector-wise analysis for assessing and controlling the traffic flow.

All the 5 STUs studied estimate the loss of revenue due to pilferage at about 10%. Various studies and seminars conducted have also estimated that on an average most of the STUs are losing at least 10% of their...
revenue due to pilferage. Only 2 of the STUs (APRTC and KSRTC) have regular 'Jack-pot' studies to estimate the leakage of traffic revenue in different areas/routes. In only 3 of the STUs studied, (APRTC, KSRTC and GSRTC) the system of fixing targets, comparing the actual earnings of each conductor against the targets and arranging checks whenever wide variations are noticed between the targets and actuals is in practice. Though controlling pilferage is recognised as one of the most vital areas of control by all the STUs, no scientific norms have been developed by any STU to determine the number of checking staff required. Hence after a detailed study a formula to work out the checking staff requirement was developed.

Out of the 5 STUs, only 2 STUs (APRTC and KSRTC) have been able to bring legislation to curb ticketless travel by making passengers liable to possess the tickets before alighting the bus. The APRTC has implemented this in HYDERABAD city division, where substantial fall in ticketless travel has been reported after the implementation. KSRTC has been able to get necessary legislation passed, but has not implemented so far. All the other 3 STUs are also anxious to bring in such legislation in their States soon.

The study revealed that the objective of an STU to the passengers is to provide adequate transport services to the travelling public at fares that give constantly better value for their money. Hence the various methods by which the STU can constantly better the value of the money received from their customers were studied. To achieve its objectives towards the passengers it was observed that an STU should scientifically identify the needs of its customers, plan to see
that the needs of the majority of its customers are satisfied consistent with its commercial policy. It is also necessary to control its operations to see that punctuality, reliability, breakdowns, etc. are continuously monitored and action taken whenever necessary.

9.3 COST CONTROLS

Apart from the basic need to make maximum use of resources in terms of vehicles, STUs are also concerned to do this at minimum operating cost. The study revealed that in STUs about 66% of the total costs are incurred on materials and personnel and out of the balance about 21% on taxes, 6% on depreciation, 3% on interest and about 4% on other items. Taxes, interest charges, depreciation etc. are not very much controllable, since they are to be incurred mostly according to statutory regulations. However, the bulk of the costs (about 66%) incurred on materials and personnel are very much controllable. The H.S.D. oil and lubricants cost was about 34 paise per km in 1974-75 and constituted about 44% of total material costs. The HSD oil and lubricants costs is closely followed by tyres and tubes with about 21 paise per km, or about 27% of the total material costs. Spares cost about 13 paise or 17% of the total material costs.

The study revealed that there are technical, management and operational controls required in improving HSD oil consumption. The technical considerations include derating of the engine, controlling the maximum speed, and improving maintenance of the items connected with the fuel system. Management controls include setting standards for the individual vehicles, drivers, depots, divisions etc.
and by constant measurement carrying out variance analysis and taking necessary action wherever the performance is observed sub-standard. The management control system in CSTRC and APSRTC was found to be better compared to the other 3 STUs. Incentive schemes exist for drivers in 3 of the STUs (APSRTC, CSTRC and GSTRC). Though the system adopted for HSD oil control is almost the same in APSRTC and GSTRC, there is a regular and continuous drive in GSTRC with very close top management involvement to improve HSD oil EMPL. The HSD oil consumption in INR per litre is the highest in CSTRC followed by APSRTC amongst the 5 STUs studied.

Apart from the environmental conditions like roads, and strategic planning decisions like selection of the right ‘make’ of the tires, certain management controls also affect the tyre life. ‘Depot-wise’ targets for tyre life are fixed only in APSRTC. In the other 4 STUs no depot-wise targets are fixed. Except in APSRTC and CSTRC in the other 3 STUs (KSTRC, USTRC and HSTRC) rethreadability factor is not used as criteria in evaluating and controlling tyre performance. The other factors like maintenance and cycle time for retreaded tyres etc. was also studied.

Apart from environmental factors like roads, some of the management policies significantly affect spare parts cost. The CSTRC after stopping complete overhaul of vehicles was able to keep down their spare parts cost low compared to the other 4 STUs. Except APSRTC in none of the other four STUs, targets or norms are set depot-wise for material consumption.
Only in APSRTC and OSRTC standard man hours required for different items of work in their central workshops was determined through work-study. Only in APSRTC and OSRTC the actual output in different sections/shops is measured in standard hours and labour performance index worked out periodically. APSRTC has incentive schemes based on work-study in their central workshops.

For maintenance staff at depots all the 5 STUs studied have fixed norms based on schedules or buses irrespective of the kms. run by the vehicles. Since maintenance schedules are based on kms. of operation, it was found that it will be more appropriate to link up maintenance staff norms with kms. of operation than buses or schedules.

9.9 MANAGEMENT CONTROL SYSTEMS AND THE ORGANISATION STRUCTURE

The study revealed that nearly 60-70% of the total costs are incurred at the depot level. More than 95% of the revenue of an STU is realised through the operation of buses at depots. Nearly three-fourths of the total employees working in STUs are based at the depots. The product characteristic of road transport requires that large number of operating decisions will have to be taken quickly. The depot is, therefore, considered a nerve centre of an STU and treated as an important responsibility centre. The study reveals that uniformity exists in the concepts of optimum depot size amongst the STUs. Most of the STUs have fixed the optimum size around 60 schedules. It was also observed that except in APSRTC, in all the other 4 STUs integrated management exists at the depot level. The delegation of authority to the depot level varies considerably
from one STU to the other. There is more decentralisation in APSRTC in all areas compared to the other 4 STUs. The APSRTC has developed responsibility accounting system with effective transfer pricing up to depot level. The study revealed that only the APSRTC depot set-up comes close to the Anthony's concept of 'profit centre'.

All the five STUs consider 'division' as a profit centre. Except in GNTC, optimum size of a division was not fixed by the other 4 STUs. In GNTC, the optimum size is fixed as 400 schedules. The size of the division is under revision in most of STUs. APSRTC, UPSRTC and NSRTC are introducing regional set-up with a Regional Manager responsible for around 1500 vehicles.

9.10 CONCLUSIONS:

The study revealed that in APSRTC though scientific corporate planning system is yet to develop, budgeting and budgetary control practices and some of the strategic planning decisions on selection of types, replacement of vehicles, spare vehicle policy, 'schedule-six' in vehicle scheduling, etc. are determined on more systematic and scientific basis. The target setting strategies and performance evaluation systems are more scientific. There is adequate and systematic participation of managers at different levels in the budgeting, budgetary control and in other areas of planning and control. The performance of APSRTC in profitability, and other key result areas like vehicle utilisation, fleet utilisation, costs etc. is much better compared to the other 4 STUs. One of the main reasons for this better performance can be traced to the effective planning and control systems in APSRTC.
GERTC has carried out scientific studies to find out the right 'make' of vehicle, right make of vehicle for bad or 'Magic' road operation, and optimum life of vehicles. It is the only organisation, which has conducted a study to find out the relative economics of complete overhauling the vehicles and based on the findings of the study decided to scrap the complete overhauling system. Similarly, effective management control systems have developed in the maintenance management area to control the performance and costs especially the HD oil and tyre costs. The costs of operation in GERTC is the lowest, especially the material and HD oil costs. Due to its decisions on social objectives like operating even on cart tracks etc. the GERTC's profitability is not satisfactory, but definitely its performance in many key result areas especially in maintenance management and cost controls is better compared to the other 4 SITC. There is good linkage between strategic planning, management control and operational control in the area of maintenance management in GERTC.

In case of HD oil cost control it was seen that there is good amount of top management involvement in the control which resulted in better implementation of the systems.

Another significant aspect noticed in all the 5 State Transport Undertakings is that the reporting systems have no co-relation with planning and control systems. This was significant in the areas of break-even control. Most of the State Transport Undertakings have not built up planning and control systems before developing reporting systems.
9.11 RECOMMENDATIONS

Recommendations have been made in the different areas of planning and control systems in the relevant chapters. Some of the important recommendations are reproduced here for ready reference.

MANAGEMENT PLANNING AND CONTROL SYSTEMS - BASIC CONCEPTS

(1) Thinking of management planning and control as two separate and heterogenous activities is not only meaningless but dysfunctional. If planning and control activities are to be meaningful, effective and efficient, then they have to be necessarily considered together.

(Para 2.3)

CORPORATE PLANNING

(2) The State Governments should leave their parochial attitudes regarding the income-tax issue on the profits, stop raising passenger taxes to avoid income-tax, and should direct the State Transport Undertakings to fix up suitable return on investment in advance in their corporate planning process.

(Para 3.3)

(3) The economic and social factors which are affecting the STUs in improving their profitability will have to be identified, quantified, maximum limits or 'ceilings' should be fixed for some of these social costs to avoid the 'alibi' for losses.

(Para 3.4)
(4) It is essential to calculate the 'sensitivity' on ROI of all the significant factors that affect ROI and communicate to the managers at lower levels, to enable them to identify the Key Result areas in their own responsibilities and to determine the targets for these important factors on a long term basis, in order to control the 'ROI' on a continuous basis.

(Para 3.4)

(5) Profit and growth are the two important corporate objectives that are required to be set in the corporate planning process. Hence the STUs instead of following the bunches should scientifically work out the growth rates and incorporate them in their corporate plans.

(Para 3.5)

(6) Irrespective of the mood, mood or political shade of the Government, each STU should have a perspective plan which would contain the strategy of the STU in its pursuit of nationalisation.

(Para 3.5)

(7) Once the nationalisation is completed, and the consolidation of the expansions is complete the STUs can think of investing money in subsidiaries.

(Para 3.6)

(8) An STU should fix up a target for ROI and other Key Result Areas. Suitable forecasts should be drawn for major items taking into account the strengths, weaknesses, opportunities and
threats. "Gap analysis" indicating the differences between the targets and forecasts will be useful in developing alternate strategies.

(Para 3.7)

(9) To improve the effectiveness of their corporate plans, the STUs should think of associating their divisional managers and depot managers in their planning exercises.

(Para 3.9)

(10) Monitoring progress towards the objectives is an important exercise in the corporate planning process.

(Para 3.10)

(11) For successful working of corporate planning process there is absolute necessity for continuity in top management. There should be no change of the chief executives frequently.

(Para 3.11)

**BUDGETING AND BUDGETARY CONTROL**

(12) The budgets should be prepared based on the long range plans and suitable corporate policy guidelines should be issued by the top management to the divisional managers before the budgeting process starts every year.

(Para 4.2)

(13) There should be better involvement and adequate participation of the divisional managers and the depot managers in the process of budget preparation.

(Para 4.4)
(14) Targets should be set in all important areas and they should be incorporated in the budgets. Instead of comparing the performance with the corresponding period of the previous year, the STUs should develop the targets scientifically and participate with the divisional and depot managers in target setting process to improve their commitment.

(Para 4.5)

(15) The Government should not insist on the approval of the revenue budgets of the STUs. To conform with the practices followed in respect of the Public Undertakings under the Government of India, the Section 32(1) of the Road Transport Corporations Act 1950, should be suitably amended.

(Para 4.6)

(16) There should be regular and formal meetings between depot managers and divisional managers, and between divisional managers and the chief executive for performance appraisal. The basis for appraisal should be the targets set in the budget.

(Para 4.7)

(17) The incentive schemes for the depot managers should evaluate the performance of the depot with reference to the budgets. The promotions for managers should be based on performance.

(Para 4.8)
Every STU should conduct a detailed study to find out the most suitable vehicle/s for their operating conditions and decide the purchase policy based on that study.

(Para 5.3)

The STUs should standardise their fleet within the organisation on a division-wise or a region-wise basis.

(Para 5.4)

Every STU should carry out a study of the make-wise analysis of the performance of tyres and correlate it to their purchase policy.

(Para 5.5)

To improve the tyre performance, STUs will have to select not only the right 'make' or brand of tyre but should also decide the right ply-ratio and tread pattern depending upon their operating conditions.

(Para 5.6)

The STUs should not only determine the optimum life of vehicles scientifically based on economic analysis, but should also regularly review it considering the factors that have significant impact on the cost of capital and/or operating inferiority.

(Para 5.6)

The STUs should study and determine the optimum life of vehicles for different operating and road conditions.

(Para 5.6)
(24) Each STU should study and decide the economic life of its fleet based on its own operating conditions than following the practices of the other STUs.

(Para 5.6)

(25) The STUs after appropriate studies should fix up different ages for different makes of vehicles than prescribing the same replacement age for all the makes of vehicles.

(Para 5.6)

(26) The STUs should fix up the targets for spare vehicles in the form of 'Total Spares' instead of depot or division spares. By calculating the cycle time required for various schedules of maintenance, the STUs should try to determine scientifically the percentage of spares required for their organisation.

(Para 5.7)

(27) It is necessary for the STUs, not only to design and implement preventive maintenance schedules but also to regularly review them (at least once in a year) to check up their effectiveness in reducing breakdowns, cost of materials etc. and revise them whenever necessary.

(Para 5.8)

(28) The STUs will have to study the relative economics of complete overhaul of vehicles with reference to their own maintenance systems and based on the findings may have to discontinue
complete overhauling of vehicles, if necessary. (Of course, adjusting maintenance schedules suitably).

(Para 5.8)

(30) To control breakdowns it is necessary to analyse them not only system-wise but cause-wise also, i.e., classification into human, material or system failures. Similarly, classification of system-wise breakdowns into A, B, C based on the number of breakdowns in each system and further selective control of the few types of failures in 'A' type systems is essential for exception control of breakdowns.

(Para 5.9)

(30) The exception control (A, B, C system of classification) can be applied to controlling the non-scheduled repair work. Apart from identifying the causes or systems that are responsible for the bulk of non-scheduled repairs, the total effort or time taken to attend to the different repair works can also be classified into A, B and C. The 'A' type repairs which consume high repair effort or time should take maximum attention for analysis.

(Para 5.10)

(31) To improve the effectiveness of the maintenance system, it is necessary to develop a reporting system from depots up to the board level to indicate the number of preventive maintenance schedules actually carried out and the number of preventive maintenance schedules planned.

(Para 5.11)
PLANNING AND CONTROL SYSTEMS IN TRAFFIC OPERATIONS

(32) The most important objective of an STU is to optimise the revenues. The optimisation of revenue is possible only when increased vehicle utilisation consistent with an adequate load factor is achieved. The study revealed that the vehicle condition and vehicle schedules should be co-related to improve the vehicle utilisation, by adopting a centralised control of the distribution of vehicles and building up a good reporting system. The STUs will have to categorise their schedules into A, B, C based on the vehicle utilisation obtained. At regular intervals, vehicle operating on A class schedules will have to be replaced and transferred to 'B' class schedules and vehicles operating on 'B' class schedules to 'C' class schedules. New vehicles will go to 'A' class schedules regularly. A regular shifting of vehicles from one class of schedules to another within the depot or between depots will have to be made on a continuous basis.

(Para 6.3)

(33) The STUs should give up their present practice of using EPK as the only criteria in assessing and controlling route profitability. They should use 'break-even' concepts and construct the 'unit cost curves' for different regions and for vehicles with different seating capacities and supply them to the operating managers to serve as guides in the assessment and control of route profitability.

(Para 6.4)
(34) The STUs should carry out sector-wise analysis to improve the average load factor, ERP and profitability and to reduce overloading of buses between some sectors of heavy traffic density.  

(Para 6.5)

(35) It is essential that each STU examines its environment and operating conditions in different regions and work out the checking staff requirement according to the formula indicated in this report.

(Para 6.6)

(36) The Government of India which has already recommended to all the States to bring in necessary legislation to curb ticketless travel should bring in necessary legislation by amending the Motor Vehicles Act so that uniform rules can be applied in all the States.

(Para 6.6)

(37) The corporate management in STUs should regularly review the number of cases of renewal, the number of persons returning on grounds of ‘mercy’ through the appellate channels and take necessary action to stop too much of ‘mercy’ on the part of the appellate authorities whenever it is noticed.

(Para 6.6)

(38) An STU will have to continuously carry out studies to see how best they can better the value of the money they receive as fares from passengers. The STUs should regularly review the
cancelled trips with reference to scheduled trips. It should fix up targets for punctuality and regularity up to the depot level and develop suitable reporting and review systems for control purpose.

(Para 6.7)

**COST CONTROLS**

(39) The STUs should adopt the technical, managerial and operational controls to improve the HSD oil consumption.

(Para 7.4)

(40) The STUs should analyse their re treadability factor of tyres regularly and take necessary measures to improve it.

(Para 7.5)

(41) The STUs should see that the time lag between the date of removal of a tyre and the date of refitment after retreading is regularly analysed and reduced to the least possible extent.

(Para 7.5)

(42) The STUs should fix up targets depot-wise for material consumption. Both financial targets in Rs. per km, as well as physical targets in number of units of consumption for important items of consumption for each depot should be set up.

(Para 7.6)

(43) The STUs should fix up standard hours required for some of the repetitive jobs like overhauls in the workshops and regularly
work out the 'Labour Performance Index' to plan and control the utilisation of man-power.

(Para 7.7)

(44) The STUs should re-examine their present norms of man power for maintenance function at depots based on the number of schedules on vehicles and should link it with the vehicle utilisation than with the schedules or buses.

(Para 7.7)

MANAGEMENT CONTROL SYSTEMS AND THE ORGANISATION STRUCTURES:

(45) The STUs should develop depots as 'Profit Centres' and for this purpose develop suitable responsibility accounting, transfer pricing and reporting systems.

(Para 8.2)

(46) Necessary accounting, transfer pricing and reporting systems should be developed to make the division a full-fledged 'Profit Centre'.

(Para 8.3)

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