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Gokhale Institute of Politics and Economics
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A Survey
OF
Motor-Bus Transportation
IN SIX DISTRICTS OF THE BOMBAY PRESIDENCY.

BY
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PREFACE

The publication of this work, which embodies the results of the second detailed field investigation undertaken by the Institute, has been unduly delayed owing mainly to personal reasons. It is hoped that even so the facts presented will be found to relate to not too distant a period and that the problems, towards the solution of which the facts may contribute, being still unsolved and urgent, the publication will be found to be of some use. The method used in recounting the results of the investigation has been the same as that followed in the previous publication on the marketing of fruit. That is, the results have been set forth in detail and as large a number of the aspects of the problem as possible have been dealt with. We have taken special pains to make clear the character and the limitations of the data collected by us.

We have to thank a great many persons and authorities for help in connection with our investigation. Foremost our thanks are due to the District Superintendents of Police of all the six districts and other police officials for their very cordial help in all directions. Without this help our work would have been rendered much more difficult than it was. We may make special mention of Mr. Condon, Deputy D. S. P., Poona to whom we had recourse on many occasions. A considerable amount of information was supplied to us readily by the Secretary, Public Works Department and the Presidents and Chief Officers of various Municipalities and District Local Boards within the area studied. The Poona, Barsi and Sirur municipal authorities gave us particularly valuable information from their octroi records. Among dealers and distributors we have to thank The Deccan Motor Service (Poona), The Presidency Motors (Bombay), Ford Motor Co. (India) Ltd. and The General Motors (India) Ltd. for various items of information supplied. The Secretaries of the Indian Roads and Transport Development Association and the W. I. A. A. also gave such information as was available to them. The response from government officials and associations in foreign countries to our queries was extremely encouraging. Specially useful data was obtained from

the National Automobile Chamber of Commerce, U. S. A. and the National Association of Motor Bus Operators. We may in this connection also mention the help derived from the U. S. A. Senior American Trade Commissioner at Calcutta and Prof. Harry Tucker of N. C. State College, Raleigh (N. C.) U. S. A. As will be apparent from the report, the bulk of our material is derived from those actually engaged in the industry. It is impossible for us to mention specifically all of these who helped and we may be excused if we content ourselves with merely indicating a few prominent names. Foremost among these is the late Mr. Babasahib Paranjpe of Poona. Others to whom we owe special thanks are. Mr. Naik (Alibag), Mr. Joglekar (Goregaon), Mr. Rajwade (Ratnagiri), Messers. Mahagaonkar and Shankpal of Kolhapur, Messers. Jakkal and Bhagwat of Sholapur, Mr. Dhaneshwar, Pleader and President of the Nagar Poona Motor Union, and Mr. Joshi of Indapur.

POONA,
1-3-35.

D. R. GADGIL.
L. V. GOGATE.

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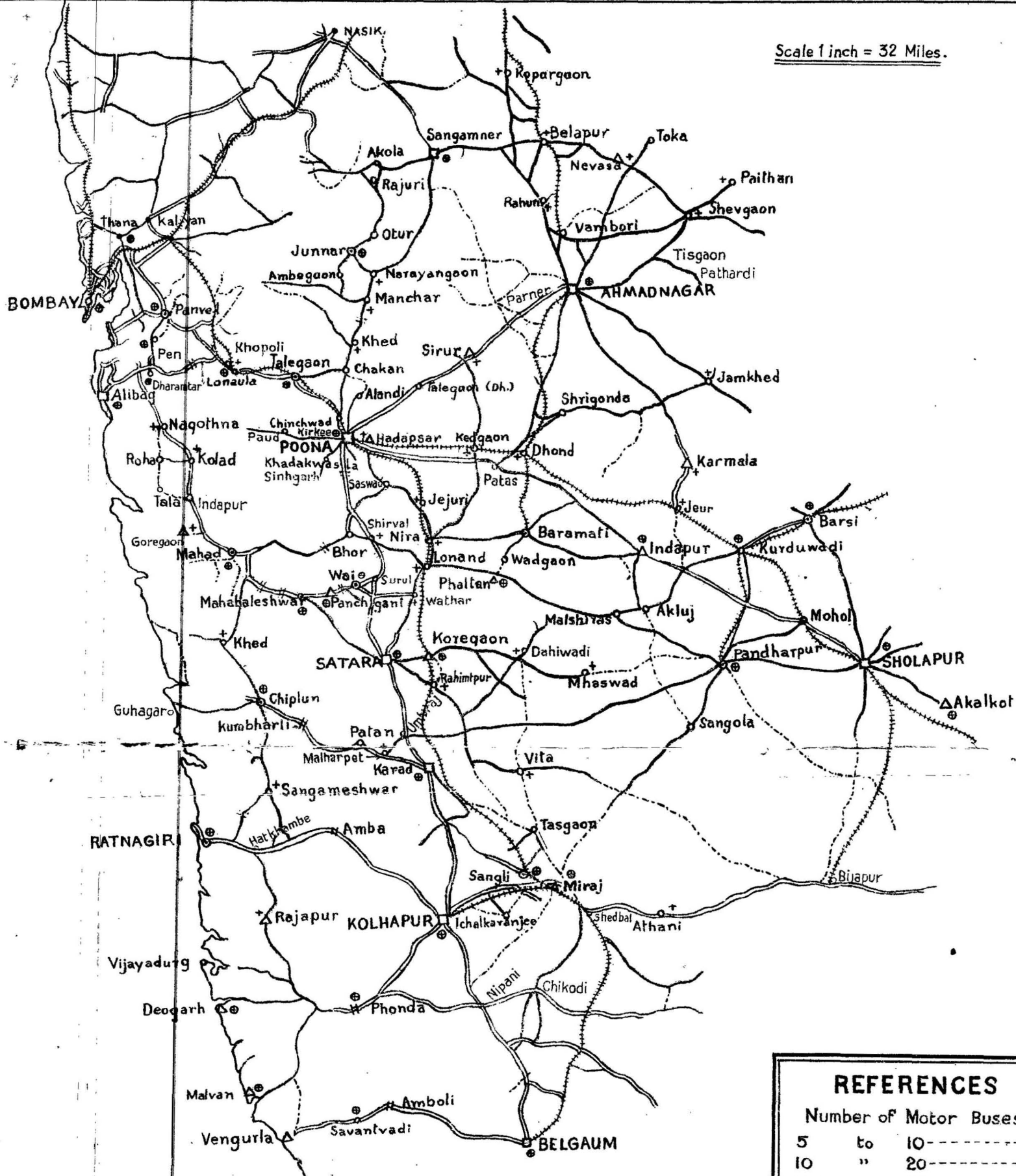
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Scale 1 inch = 32 Miles.



REFERENCES

Number of Motor Buses.

- 5 to 10 ----- ○
- 10 " 20 ----- △
- 20 " 40 ----- ⊙
- above 40 ----- □

ROADS

- Railway -----
- Metalled & Bridged -----
- Metalled but Unbridged -----
- Un Metalled & Unbridged -----
- Ghats -----

Shops

- Petrol shops ----- +
- Petrol & motor spare parts ----- ⊕

ROAD MAP.

CHAPTER I.

Introduction.

The problem of mechanical road transport has engaged increasingly the attention of governments and the public in almost all countries of the world during the last decade. Whether in U. S. A. or in Palestine, whether in Great Britain or in New Zealand the rapid growth of motor transport has created a large number of problems of a pressing nature. India has been no exception to this rule; in this country also the growth of the industry and the problems created by it have challenged public attention. The most pressing among these problems have been those created by the growth of public commercial vehicles; and it is to these that we have directed our attention. The Government of India first took an important step in the consideration of the road questions by the appointment in 1927 of a committee on road development. This committee considered questions of road development, road finance and vehicles taxation; its terms of reference did not necessitate any investigations in the transportation problem. It was, as a fact initially the road development and finance problems that commanded the attention of governments, whether Imperial or provincial, most in India. But there was another direction in which also government soon felt the need of considering road transportation. Railways being mainly state-owned in India the state is intimately concerned with the profit-earning capacity of the railways and the effect that the increasing competition of commercial motor vehicles had on the income of railways naturally caused the Imperial government to look into this question. As a result two officers, Messrs. K. G. Mitchell and L. H. Kirkness were appointed to tour the whole country and study the question of the competition of rail and road transport. The appointment of these officers was made in July 1932. They toured the whole country rapidly and produced within a remarkably short time a comprehensive general report and a series of provincial reports. The full title of their report was "Report on the present state of road and railway competition and possibilities of their future co-ordination and development and cognate matters in Governors' provinces." In this report the whole question is

studied mainly under the following heads (i) existing state of motor competition with railways (ii) control and regulation of motor transport (iii) the taxation of motor transport (iv) railway projects (v) road programmes. The report of Messrs. Mitchell and Kirkness was published in 1933 and government called a conference of representatives of provincial governments and others early in April 1933 to consider the whole problem. This conference arrived at certain general conclusions. Action on these matters has been slow to effect, mainly because roads and the regulation and taxation of road transport are subjects falling within the purview of provincial authorities. The fact that while the Imperial Government owns the railways, it is the provincial Governments that control road transport has perhaps saved road transport interests in India thus far from any drastic measures of state interference.

Motor transportation especially, commercial vehicles transportation, has focussed attention on itself very considerably during the last two years. The enquiry which ends with this report was projected in June 1932 and its actual work was already begun in August 1932. The Institute had thus embarked on this plan even before the appointment of Messrs. Mitchell and Kirkness to report on the subject of rail-road competition was announced. After that announcement had been made we wondered whether it was worth our while to continue work in this direction; but on ascertaining the scope of the government enquiry and the nature of that work, we found that our plan did not involve going over the same ground to any considerable extent. To a certain extent we also modified the emphasis to be laid on the various aspects in our enquiry in view of the publication of the Mitchell-Kirkness report. Thus we have largely left out the question of rail-road competition from what follows. Our enquiry was from the start meant to ascertain facts regarding the organisation and economic position of those engaged in the public motor transport of passengers and goods in the tract considered. It is chiefly with describing these conditions and with considering the possibilities and means of their improvement that we have concerned ourselves.

As will be apparent from the succeeding chapters the available statistical and other data on this important economic activity are extremely scanty. Government agency collects and publishes a meagre set of statistics and the statistics that are published are pub-

lished in such a way as to render them of little value in an economic study. There do not exist powerful associations such as the National Association of Motor Bus Operators U. S. A., National Automobile Chamber of Commerce, U. S. A., or the Society of Motor Manufacturers and Traders, Great Britain, which compile facts regarding the transportation business and publish them periodically. Neither are there special government departments with us, of the nature of the Ministry of Transport and the Bureau of Public Roads. Hence with us the compilation of even the most elementary facts becomes a matter of considerable investigation and labour. This was made clear to us by the work that was involved in merely ascertaining the number of motor vehicles plying for hire in the various districts. Messrs. Mitchell and Kirkness were primarily interested in the study of a particular problem and had little time to gather detailed information. We have therefore, addressed ourselves specially to this problem of collecting and arranging usefully as large a body of relevant facts as possible.

The tract covered by the investigation comprised of the two districts of the Konkan—Kolaba and Ratnagiri and four districts of the Bombay Deccan—Poona, Ahmednagar, Satara and Sholapur. We tried to cover as large an area as possible with Poona as the centre. Mr. L. V. Gogate carried out the field investigations personally throughout the whole tract and the work of touring the area for the collection of information occupied him for a year. The facts embodied in the report thus relate to the year 1932-33. The method used in the investigation was almost wholly that of personal interviews. Except for information obtained from public bodies or associations especially those outside the tract such as the District Local Boards in the Madras Presidency or Transportation Associations in other countries, all information was either originally obtained or subsequently verified or checked by personal investigation. The bulk of the information was, of course, obtained from the bus-owners themselves. A detailed questionnaire was framed for the purpose of eliciting information from the bus-owners and the investigator attempted in his tour to obtain as exhaustive replies as possible from the bus-owners to the questions contained therein. As in the case of our first investigation it was found impossible to collect data by merely posting the questionnaire. Each questionnaire was filled by the investigator as the result of a personal interview. As in the first investigation, group interviews were in a

number of places found possible and the total number of bus-owners interviewed much exceeds the number of questionnaires filed in, which was 155. The investigator visited 54 places in the tract and the questionnaires filed in are distributed over 50 places. The distribution is of course not even; for, while it was thought sufficient to fill in only one questionnaire each for 20 of these places, 22 relate to Poona City and the towns of Ahmednagar, Satara and Sholapur are represented by almost ten apiece. An attempt was thus made to make the questionnaire information as representative of actual conditions as possible. The bus-owners as a class, though doubtful about the real purpose of the enquiry and usually too busy to supply information readily, responded well to our demands on them. Other classes were also tapped by the investigator on his tour though no separate questionnaires had been prepared for them. These were bus drivers, ticket agents and dealers and shopkeepers of various sorts connected with the business. Motor manufacturers and their agents and firms of distributors also gave a good deal of information, though the utility and scope of it varied widely from firm to firm. The police authorities in respect of registration of vehicles and traffic control and regulation, the municipalities and District Local Boards regarding road maintenance, tolls and vehicles taxation, the P. W. D. regarding all matters regarding provincial roads, the heads of postal divisions on the subject of mail contracts were other sources to whom we had recourse for special information. Facts regarding foreign countries were easily obtained because of the ready assistance of public associations and authorities in a number of other countries especially the U. S. A. and the Dominions. While we were thus able to tap to a greater or less degree most sources of information we have to record with regret that we met with no success in respect of the Railway authorities. Our request for statistical and other information of a not confidential nature was turned down with a brief reply in the negative. It was, therefore, quite as well that we had decided at an early stage not to devote any special attention to the question of rail-road competition.

CHAPTER II

The Means of Communication.

(i) The Railways :—

The total railway mileage in the six districts is 627 miles. One important broad gauge line (a part of the Bombay-Madras through line) traverses the tract in a south westerly direction from Bombay. The Dhond-Manmad broad gauge line connects this route with the Bombay-Bhusawal line. There are also two narrow gauge lines branching off this route—the Dhond-Baramati and the Latur-Kurdwadi-Pandharpur. The other main system is the metre gauge, Poona-Bangalore of the M. S. M. Ry. The main line goes south from Poona through Miraj-Belgaum and there is a branch off Miraj connecting Kolhapur with the main line. It will be seen that the tract is very badly served with railways, the railway mileage being one mile per 44·21 sq. miles, of area. The Mitchell-Kirkness map shows an enormous area in this tract as being outside the ten-mile radius of railways. Except for a small portion of the Bombay-Poona line running through a corner in the north of the Kolaba District, the two districts of the Konkan are entirely without any railway service. Important parts of all the other districts such as the Khed and Junnar talukas in Poona are situated at considerable distance from the railway lines. And the utility of the main Poona-Bangalore line is considerably lessened by the fact that the alignment of the line has been made away from important centres of population in the tract, for avoiding the construction of bridges and tunnels.

TABLE 1.

Railway Mileage.

Broad gauge	Miles	Meter gauge	Miles	Narrow gauge	Miles
Neral Poona.	65	Poona-Miraj.	160	Dhond Bara- mati.	28
Poona Sholapur.	164	Miraj-Sangli.	6	Kurduwadi Barsi.	21
Dhond Kopergaon.	120	Miraj-Kolha- pur.	30	Kurduwadi- Pandharpur.	33
Total ...	349	Total ...	196	Total ...	82

(ii) The Road System :—

The Konkan has always, depended largely on water transport ; but even in that tract the need for roads especially for connecting it with the districts above the ghats was ever present and the Deccan districts always had to depend on road communications to a large extent. Fortunately the configuration and the surface of the tract has made it comparatively easy to provide it with roads.

The following table shows the mileage of provincial and District Local Board roads in all the six districts compared with their area in square miles and their population.

TABLE 2.
Provincial and District Local Board Road mileage.

District	Provincial			Total	District Local Board			Total
	Metalled and Bridged	Metalled but partially Bridged	Other roads		Metalled	Unmetalled	Other roads	
	M. F. Ft.	M. F. Ft.	M. F. Ft.	M. F. Ft.	M. F. Ft.	M. F. Ft.	M. F. Ft.	M. F. Ft.
Poona ...	138-3-0	157-4-0	...	295-7-0	122-1-580	1376-0-555	...	1498-2-475
Satara ...	226-6-0	265-2-0	...	492-0-0	255-0-0	174-6-330	...	429-6-330
Ahmednagar ...	52-7-193	391-6-99	100-4-263	545-1-555	421-7-152	230-1-330	...	652-0-482
Sholapur ...	116-4-0	247-5-0	...	364-1-0	164-3-0	144-0-0	...	308-3-0
Kolaba ...	101-6-314	146-4-476	...	248-3-130	72-7-350	94-1-580	367-1-115	534-2-385
Ratnagiri ...	60-0-0	319-1-532	...	379-1-532	...	923-5-360 ^a	287-7-320	1202-5-20
Nira Right Bank Canal	36-5-228	34-0-330	...	70-5-558	...	...	...	...
Poona Irrigation Division ...	84-0-0	64-6-320	75-4-346	224-3-5	...	...	...	...
Total ...	817-0-75	1626-6-437	176-0-608	2619-7-460	1036-3-422	2934-0-175	655-0-435	4625-4-372

^a This includes the metalled road mileage for which the separate figure is not available.

TABLE 3.
Road mileage compared with the area in square miles and population.

District	District area in Sq. miles	Population	Total Road Mileage Provincial & D. L. B.	Metalled Roads Provincial & D. L. B.†	Unmetalled Roads Provincial and D. L. B.	No. of Square miles of the area to each Road mile in the District	Average number of people per mile of Road in each District.
			M. F. Ft.	M. F. Ft.	M. F. Ft.		
Poona ...	6,382	1,169,798	1794-1-475	418-0-580	1376-0-555	2-97	652-06
Satara ...	5,053	1,179,712	921-6-380	747-0-0	174-6-330	5-48	1280-90
Ahmednagar ...	6,611	988,208	1197-2-377	987-1-47	230-1-330	5-52	825-56
Sholapur ...	4,569	877,520	672-4-0	528-4-0	144-0-0	6-79	1305-83
Kolaba ...	2,166	628,721	782-5-515	321-2-480	461-3-35	2-76	803-99
Ratnagiri ...	3,989	1,302,527	1581-6-552	379-1-532	1202-5-20	2-52	823-34
Nira Right Bank Canal	...	...	70-5-55	70-5-558	...	...	...
Poona Irrigation Division ...	...	...	224-3-5	224-3-5	...	...	...
Total ...	27,720	61,46,484	7245-4-172	3656-3-222	3589-0-610	3-82	848-37

† District Local Board.

Note.—The details necessary to distribute the road mileage in the canals division among the various districts were not available to us. Hence there remains an element of error in the calculations for the Poona, Satara and Sholapur Districts.

It is not possible with the information available to us to explain the wide variations in the provision of roads made in the various districts. The variations, it will be observed, are not wide in respect of the roads maintained by the provincial Government. In a district like Ratnagiri, with its numerous creeks, the proportion of unbridged roads, is specially large but there is otherwise no special feature in the provincial road figures that calls for comment. The provincial roads are mostly big arterial roads serving the needs of the Presidency or in cases like the Bombay-Agra or Poona-Bangalore roads, they may be considered as even of all-India importance.

The figures regarding the mileage of roads maintained by the various District Local Boards are not available in any official periodical publication. The District Local Boards do not as a rule publish annual reports and any reports, when published, do not necessarily contain these figures. We had, therefore, to request the District Local Boards themselves to furnish us with the necessary information. The figures in the above table are the figures thus obtained. It will be observed that the classification is not the same in all districts. The Ratnagiri figures, for example, are not classified at all. The classification, where available, may also be open to suspicion. A very full report on the working of the Board for the six years 1926-27, 1931-32 produced by the Ratnagiri Board shows full well the difficulties of the Boards. In commenting, for example, on the roads in the Ratnagiri Taluka the report points out that four important roads in this taluka are ordinarily shown as metalled. Yet on one road, 13 miles in length, not more than five had ever been metalled and on another, 24 miles in length, only some parts had ever a metalled surface and these even had not been continuously kept in repair. As a fact in the case of the Boards there is no necessary uniformity of policy as regards classification or even as regards road maintenance and repair.*

* From this same Ratnagiri report we learn that during the five years 1921-22 to 1925-26 the Board had spent on improvements and repairs a sum of less than Rs. 80 thousand. Whereas within the 6 years 1926-27 to 1931-32 the expenditure upon this account had amounted to over Rs. 1½ lakhs. This should not be taken as being due to the difference made by increased motor transport. For the Board's report makes it quite clear that the scale of expenditure during the former period was entirely inadequate for the maintenance of the

It is not possible to ascertain the total mileage including that of all unmetalled roads and cart tracks. For, apart from the District Local Boards the taluka local boards maintain some roads whose mileage figures are not known to us and further there is an enormous length of cart tracks which no authority, as such, maintains, but which form an important channel for bullock-cart transport during the fair weather seasons. It is not possible for us thus to say to what extent the total road mileage provided in these districts comes up to the standards usually laid down by writers on road transport.*

Not taking account of the total figures whatever they may be, we have to confine our attention to the figures available, those of Provincial and Local Board roads. If we treat the whole area as one unit it is found that the total road mileage provided by these two authorities works out at one mile of road per 3.8 sq. miles of area. Taking the restricted class of metalled roads we have in the area one mile of metalled road per 8 sq. miles of area. We have also one mile of provincial road for 10.6 sq. miles of area. Mr. James whose calculations may be assumed as a fair standard even for India, lays down that for "well developed hilly agricultural areas" (a category in which the tract covered by this survey may be

roads even without heavy motor traffic and that in effect the larger number of these were in a very deplorable condition. It was only the levy of the octroi in the later period which increased the income of the Board considerably that enabled it to undertake the more adequate repairs and maintenance charges. There is no minimum expenditure scale nor a minimum maintenance level laid down and enforced by the provincial Government, and hence the charges fluctuate from time to time and Board to Board according to financial exigencies and other circumstances. With depressed finances of recent years the road repair bill has been first and most considerably affected. And at no time during the post-war period have Local Board finances in these districts been adequate enough for them to contemplate and lay down a well-thought out and progressive policy regarding roads.

* Vide for example Highway Construction, Administration and Finance By E. W. James. Highway Education Board Washington, D.C. Here the author works out standards for miles of highway per sq. mile of area for various types of areas varying from desert areas to highly developed manufacturing areas. For the former the standard is laid down as 0.3 and for the latter 2.3. These standards are based on conditions of general development in Europe and United States. It would be interesting, if relevant information were available to work out similar figures for various types of areas in India

placed) "the actual miles of highway per square mile that should be included in a national system" is 0.098. If we treat the provincial roads as broadly similar to those described as 'national' in the above quotation the figure for our area which works out at 0.094 of provincial road per sq. mile, is remarkably close to Mr. James'. This may perhaps be taken to indicate that the main arterial road system in the area under consideration is up to a fair average development.

We have attached to this publication a Road map, of the tract surveyed with a view to indicate the main routes of motor traffic and the main points along these routes. It should, however, be clearly indicated that the map is likely to be defective, in the sense that it does not show all the motor routes and perhaps does not describe all of them entirely accurately. Even Messrs. Mitchell and Kirkness had to confess that in preparing the road map for the Bombay Presidency they could not get adequate information. We were, naturally, even in a more difficult position in preparing ours. The information that we had obtained from the provincial and Local Board authorities was not exhaustive enough to enable us to prepare a proper road map. Hence in preparing the road map which accompanies this publication we had to base ourselves on the map furnished by the Bombay Presidency Motor Guide (1923). This, however, is not so out of date as would appear at first sight. Because there has been little new construction of roads and also no considerable transference between the metalled and un-metalled classes of roads during the intervening period. And as our purpose is mainly to illustrate the routes along which motor transport is carried on and the important points along these routes, the 1923 map basis is fairly adequate for our purposes.

We have discussed above the statistics of the total road mileage maintained by the Provincial and District Local Board authorities. We may now consider the length of the total motorable routes or rather the mileage of routes used for motor service. The total mileage of roads shown in the road map for the area surveyed is approximately 3400 miles; of this nearly 3000 miles is shown as metalled. Motor traffic is carried on, on all the roads shown in the map, metalled as well as unmetalled. There are, however, some roads not shown in the map over which also some motor traffic is carried on. During his tour through the districts our investigator collected detailed

information regarding all roads over which buses were plying. The total mileage of the routes thus obtained comes to approximately 3350 miles. But these contain some routes which are not included in the road map. The mileage of such routes amounted to nearly 250 miles. Another approach to the same question may be through the road mileage statistics for the six districts. These show nearly 3480 of metalled mileage, not including any under that head for the Ratnagiri Board. Further while the road map and questionnaire calculations include Indian States roads comprised within our area the six districts statistics do not do this. Hence it is probable that the metalled road mileage of the entire area is not short of 3600 miles. Taking all these as motorable and some additional mileage under unmetalled we may approximately put the total motorable mileage for the area at about 4000 miles. This would be motorable mileage, not necessarily mileage along which bus services regularly run. The latter, we believe is approximately equal to the figure given above according to our questionnaire calculations.

The road system of this tract was before 1850 very little developed. The Jayakar* committee has included in its report two road maps of the Deccan and Konkan showing the enormous difference made by road development during the latter half of the 19th century. The development of railways in India began at about the same time as the construction of roads. This however, is true only of three of the six districts considered. The two Konkan districts do not possess even to-day any railway facilities and the construction of railway through the district of Satara began nearly two decades after the construction of the railway in the districts of Poona, Sholapur and Ahmednagar. Road construction when it began in the latter half of the 19th century was based in the first instance on a series of main trunk lines. These were, in the tract considered, the Bombay-Poona, the Poona-Kolhapur (as part of the Poona Bangalore), the Poona-Sholapur (as part of the Poona-Hydrabad), the Mahad-Pandharpur and the important passes between the Satara and Ratnagiri districts for enabling the produce of the Deccan plateau to reach the sea-ports and vice versa. There were also a number of other secondary main lines laid down. With the completion of these lines of through communications was

* The Indian Road Development Committee (1927-28).

also undertaken the work of constructing feeder roads for railways and connecting important places which had, because of exigencies of railway alignment, been left away, with them. The main trunk lines as well as the important feeders were usually metalled and constructed and maintained by provincial authorities, while the others were left to the local fund and the local Board authorities. As railway and road development went mostly hand in hand there was considerable correspondence between the two systems; except in the case of the ghat roads in Satara District which fell largely into disuse after the construction and development of the M. S. M. Rly. This happened indeed to such a large extent that the ghat parts of the old important Mahad-Pandharpur road are even today not used or usable to any large extent. It should further be noted that even though the trunk roads were constructed as the main arterial roads there was on most of them never any through traffic after the construction of railway lines nearby. It is only such stretches of them as connected important tracts with contiguous cities or railway stations that were under constant use. For, road policy and road use became predominantly local after their national importance had vanished because of the constructions of railways. It thus happened that some parts of even the main trunk roads were very little used and fell into disrepair. Further the importance of thorough road communications at all seasons being not urgently felt, gaps were left in places where large rivers had to be crossed and costly bridge construction was necessary and in a number of fords engineers were content with merely low level causeways. Most of the important road construction in this tract was completed during the 19th century and little fresh activity was undertaken during the 20th century before the rapid increase in motor transport transferred the problem to an entirely different plane.

The road system of the tract as it exists today is in all essentials the same as it was in the pre-motor epoch. We have discussed elsewhere* the difficulties, financial and others which have retarded improvement. The fact remains that no considerable adaptation to the needs of motor traffic has been possible.

Hence the defects in the system are primarily due to the fact that it was built up, not with a view to motor traffic. The road surfaces,

* See below Chapter VII

the curves, the gradients, the culverts, the causeways and the bridges are not adapted to motor traffic. Through traffic in long stretches finds itself hampered by particularly bad patches, gaps, or lack of means of fording and the system is unbalanced. Messrs. Mitchell and Kirkness† lay special emphasis on this lack of balance in our road system. By lack of balance they mean disproportion in length and in the condition of repair between the trunk and main metalled roads and the subsidiary and feeder unmetalled roads. This is because the old feeder and subsidiary roads were essentially meant for bullock cart traffic in the fair-weather seasons; while today any road with a comparatively passable surface is liable to be used for motor traffic which quickly ruins the surface of all inferior roads. Thus we find the Satna D. L. B. complaining in its annual report for the year 1929-30 that as soon as the *murum* roads are a little improved they are used for motor traffic and they deteriorate rapidly. The D. L. B. therefore suggests that the volume of motor traffic along such roads be strictly limited. The well constructed metalled roads can stand even heavy motor traffic much better and being usually provincial, they are also maintained in a better state of repair. It should, however, be noted that this lack of balance is less pronounced, on account of ready availability and cheapness of road metal and the generally favourable surface of the earth, in this tract than in other parts of India. This is apparent from the following table which compares the provision of metalled and unmetalled roads in this tract with the all-India figures provided by the Jayakar Committee.

TABLE 4.

The average road mileage for every 100 sq. Miles of the total area and for every 100,000 of the Population is.

All India.

	Per 100 sq. miles of Total area. miles	Per 100,000 of Population. miles
Metalled ...	5.45	23.20
Unmetalled ...	13.05	55.70
Total ...	18.50	78.90

† Report on the present state of Road and Railway Competition—1933 by Messrs. K. G. Mitchell and L. H. Kirkness. Report General Pp. 7-8.

Six Districts.

	Per 100 sq. miles of Total area.	Per 100,000 of Population.
Metalled ...	13.19	59.48
Unmetalled ...	12.95	58.39
Total ...	26.14	117.87

The surface of metalled roads is everywhere water-bound macadam and except within the municipal limits of such place as Poona or Mahabaleshwar no superior surfaces have been constructed. In the present financial circumstances it is impossible to contemplate any time in the near future when superior surfaces could be afforded. Neither, in the absence of traffic surveys, is it possible to say where such surfaces could be justified or are urgently called for. The unmetalled roads are either *murum* or mere earth roads. *Murum* is crumbled trap rock which gives a fair surface and could sustain light motor traffic at all seasons. Earth roads are only fair-weather roads but occasional motor traffic moves even along some of these.

We had in the questionnaire circulated to bus-owners included a question regarding the main defects of the road systems. And the most prominent defect pointed out was the absence of bridges, causeways or culverts. These gaps cause considerable annoyance and inconvenience especially during the rainy season, and in some cases they constituted so serious an obstacle as to bring about an entire cessation of regular motor service during 2 or 3 of the monsoon months. Along some of the routes there were loud complaints regarding potholes and an extremely bad surface. The surface as a rule is the worst during the monsoon months. The traffic also is at this time at its lowest. We also enquired of the bus-owners as to what difference bad roads made to running costs. In general we were told that on bad roads during the monsoon the cost would be higher than the normal average by about 15 to 25 p. c. This, of course, was based on mere guess-work on the part of those who replied and not on any recorded data.

It is not possible for us to say anything regarding future road programme and future road policy. Such programmes can only be prepared as the result of intensive work of the nature of traffic surveys such as those carried out in many states of U. S. A. or of periodic traffic counts as in Great Britain. We learn from the report of Messrs. Mitchell and Kirkness that the Bombay Government has prepared a long list of improvement works to be undertaken.* But it is not clear whether this scheme is based on any definite data collected by Govt. and if such data has been collected it seems unfortunate that it should not be available to the public. Not only, however, is a record of existing traffic necessary but further an estimate must be made as to what traffic roads will carry after certain improvements have been made. For, it is quite possible that certain stretches of roads whose approaches and feeders have been neglected today may become much more important than now when these defects have been removed. Further it should be noted that priority is given in this programme of the Bombay Government to the big trunk roads, expenditure on which is to be financed by grants from the road fund and even the other works contemplated are in connection with important metalled provincial roads. A programme of this nature if carried out, while building up in a more suitable manner a system of thorough provincial communications, will, unless balanced by corresponding activity in lesser fields actually increase the lack of balance complained of generally. And if we accept the statement of Messrs. Mitchell and Kirkness regarding the comparative superiority of provincial roads, then the greatest activity today is to be desired on the part of District Local Boards. In the case of improvement of the subsidiary roads also a survey of each district needs and possibilities is absolutely essential before a district plan could be worked out. How many important places are off motorable roads or what tracts are suffering for want of adequate facilities of this type are facts which have not yet been sufficiently ascertained. Apart from traffic survey and planning two problems in this regard still remain. One is financial and the other technical. The financial problem is elsewhere, considered.† The technical problem is to find out having regard to local

* Vide *op. cit.* Bombay Report App. 5.

† See below chap. VII.

surfaces and materials locally available, what are the best ways of constructing roads for light traffic. In some provinces where road materials are scarce and dear it is said that experiments have been made in connection with grading machines for earth roads. These have not yet been tried in the tract under consideration and it may be that they are either unnecessary or unsuitable for it. If so, the local problem must be solved in some other way and fairly satisfactory earth or murum surfaces must be obtained and maintained in some other fashion. It may also become desirable to restrict on such roads the kind and volume of traffic so as to correspond with the type of road laid out.

CHAPTER III.

Business units and their Organization.

(i) *Published statistical data*.—The published official statistics regarding motor vehicles in this Presidency are to be found in the annual reports of the Police of the city of Bombay and the annual police reports of the Bombay Presidency. The entire work of registering and re-registering motor vehicles is entrusted to the Bombay City Police and hence we find earlier references and information in this series of reports than in the Presidency series. The Bombay City Police also undertake the inspection of public vehicles licensed to ply for hire and figures regarding public vehicles in some districts are to be found in the Bombay City Reports as early as the year 1923. No mention was made in the Presidency reports of public motor traffic till the year 1928. Since then a paragraph finds place therein annually. Detailed statistics however, were given for the first time only in 1929. These statistics are the same as those to be found in the Bombay City Police Reports and we shall, therefore, consider them as from one series of reports.

The detailed statistical appendices in the latest reports contain information regarding the issue and renewal of motor driving licenses, Owner's "A" permits, Driver's "B" permits and regarding new motor vehicles registered and motor vehicles re-registered classified into cars, cycles and lorries. All this information is available for each district of the Presidency. At the very outset a point is to be noted regarding the classification of lorries i. e. "heavy motor vehicles". In this Presidency all vehicles whether buses, lorries or trucks which are less than of 2 tons unladen weight are classified as cars, while only vehicles heavier than this are put into the class of lorries. As a result of this peculiar procedure the classification loses a very great deal of its value. The class of lorries becomes very small and the class of cars all-inclusive. This is to be specially deplored as in all the other Indian provinces the system of classification followed is different. Here the class "heavy motor vehicles" (lorries, buses etc.) includes all commercial vehicles (other than taxi-cabs) irrespective of their capacity. This is also,

we understand, the correct classification as adopted by the Department of Commercial Intelligence and Statistics. It is to be hoped that the Bombay system of classification is immediately changed and brought in a line with that of the rest of India.

On account of this peculiarity of classification it was impossible to extract any important information for our purposes from these figures. As is apparent from the published statistics, motor vehicles of more than 2 tons unladen weight are confined almost entirely to Bombay City and hence for the districts all types of motor vehicles, other than cycles, are in the Bombay classification lumped together under the one head of cars. If all commercial vehicles had been separately classified the number of the bus type would have been known and as the large majority of these ply for hire, the growth of public vehicles over a series of years could have been approximately ascertained. On account of this same defect in classification the annual addition of buses cannot be separately known. And as the rate of increase in the number of private cars is presumably different from the rate of increase in the number of commercial vehicles, the total of new cars added does not reveal any significant information for our purpose.

No motor vehicle can be let or plied for hire in public places without an owner's permit granted by the District Superintendent of Police. These permits are renewed annually. But when a motor vehicle is sold and the current "A" permit is presented for endorsement of sanction in favour of the purchaser, the motor vehicle is examined as at the time of the first issue and the full fee of Rs. 5 charged. This means that all motor vehicles sold second-hand and continued to be plied for hire during a year, are entered twice in the register. This takes away entirely from the value of the "A" permit statistics. For, the total of issued and renewed "A" permits do not indicate the total of public vehicles plying for hire on the roads; their number is less than the total by the number of second-hand transfers.* And as there is no means of ascertaining the number of such transfers the published statistics do not help us to determine anything significant. The Bombay City Police Report also contains figures which show the number of motor vehicles licensed to ply for hire in each district inspected; and these figures are

* The total of "A" permit issues, it is obvious, represents the total of new and second-hand purchases of vehicles for hire during the year.

treated in the report itself as if they represented the number of motor vehicles licensed to ply for hire. But a reference to the "A" permits statistics shows that these figures are nothing but a total of the issued and renewed "A" permits.* These represent merely the number of vehicles inspected before the grant of fresh "A" permits and there is exactly the same element of double entry in them as in the case of "A" permits.

There is still another source of confusion in the statistics to which we would draw attention. Ordinarily one would expect that the number of new motor vehicles registered added to the number of vehicles re-registered would represent the total number of cars, private and public, registered in that district. But we find that this total for some districts is very small. It is very close to or smaller than not only the number of public motor vehicles inspected but is very close to the figures of public vehicles collected by us from the district records leaving little or no margin for private cars. This we are told is to be chiefly explained by the fact that a large number of new cars are registered in Bombay on purchase, before they are taken to their district destination. There is thus a serious under-estimation in the actual number of new cars introduced in a district during a year.

The Bombay City Police Reports also give annual figures of total transfers effected.† These represent all Presidency transfers and are not available classified by districts. These transfers further include initial sales of new cars also. They relate, to both private and public vehicles and merely show the magnitude of the total transactions taking place each year. From the tables* it will also appear that the proportion of the ownership of private cars is very much larger in Bombay City than in the districts. And that in the districts, as distinguished from the state of affairs in other countries, public conveyance vehicles form a very large proportion of the total number of motor vehicles. This is not surprising in view of the very low level of average income in India.

* It is not known, however, why in case of some districts there remains in some years a slight discrepancy between the two sets of figures.

† The number of transfers effected were: 1929—8,682; 1930—8,262; 1931—8,319; 1932—8,362.

‡ The tables compiled from the annual police reports are appended at the end of this chapter.

(ii) *Number of buses plying for hire and the unit of ownership*.—As it was not possible from the published records to get a correct statement of the number of commercial vehicles plying for hire in the various districts, we decided to have this information collected in detail from the records maintained by the police in each district. Through the courtesy of the police authorities we were enabled to do this for all the districts surveyed. The following table gives the number of such vehicles for all districts.

TABLE 5.

Number of buses plying for hire registered in the six districts in 1932-33.

Poona	473	Ahmednagar	237
Satara	393	Kolaba	217
Sholapur	216	Ratnagiri	265

Note.—This table does not strictly show the number of cars in each district on the same date. Our investigator visited the various districts during the period from Sept. 1932 to March 1933, and the figures for any district represent the state of the register at the time of the visit of our investigator. We believe, however, that this does not make any material difference.

It should be observed that the practice of all districts in respect of the maintenance of these registers is not uniform. While in some, a register of public buses plying for hire is kept apart, in others only a common register of all public vehicles for hire is maintained, including both buses and taxi-cabs. It was not possible for us always to separate these two elements, and the above table, therefore, is not strictly homogenous. Fortunately, for the district of Poona where city taxis would be numerous, the figures obtained are for buses only. In the districts of Ahmednagar and Sholapur public taxis are very few; in the Konkan districts, on the other hand, traffic on roads being restricted to vehicles below one ton weight, 1/4 ton lorries predominate and quite a large number of touring cars are also employed in the ordinary district traffic. A number of taxis are maintained by bus-owners in the Satara district also for the purpose of Konkan traffic. Thus, though the above table includes in some cases both taxis and buses, it may be taken for granted that the number of taxis in most districts, where they are included, is small and that they are employed in the same type of traffic as the buses.

There were two types of details that we were able to extract from the police registers. These were regarding the location and unit of ownership of buses. The table on the next page gives the units of ownership of buses by districts.

TABLE 6.

Number of bus-owners, and the number of buses owned by them in four Districts (1932-33).

Number of buses owned	Poona		Satara		Ahmednagar		Sholapur	
	Number of bus-owners	Number of buses	No. of bus-owners	No. of buses	No. of bus-owners	No. of buses	No. of bus-owners	No. of buses
One bus ...	163	163	167	187	157	157	118	116
Two buses ...	33	66	34	68	19	38	22	44
Three buses ...	22	66	12	36	4	12	4	12
Four buses ...	18	72	3	12	3	12	1	4
Five buses ...	4	20	3	15	...	...	2	10
Six buses ...	3	18	1	6	3	18	...	...
More than six buses ...	5	68	4	69	...	...	3	23
Total ...	248	478	244	393	186	237	150	216

The table is compiled from the district police records which show against each vehicle registered, the name of its owner. In compiling these tables a "hirer" was for purposes of these calculations treated as an owner. For, these "hirer" entries represent hire-purchase transactions and it would have been misleading to treat "owner" who in such cases is mostly some distributor, as owner.* Interpreting these figures it is necessary to issue one warning. It is that the figures have been compiled independently from each district and cannot strictly be totalled up for the tract as a whole. The record of all the districts was not simultaneously available to us and hence we were not in a position to check the names of those who owned buses in more than one district. We have information that there are a few persons or concerns of this character in the tract; and an individual district record would thus not enable us to determine the total ownership of buses by these large units. This consideration does not, however, affect the dominant characteristic presented by the table, which is the one-bus ownership unit. For, it is extremely unlikely that any person owns only one bus each in more than one district. For the four districts for which the details have been analysed it is seen that 621 buses out of a total of 1309 are owned by single bus-owners and that out of a possible † maximum of 821 persons 621 are single bus-owners. In units of ownerships larger than one, the two and three bus-owners are dominant. It is not permissible to calculate from the district figures the ownership classes and treat the results as exact. But the error in all the smaller units is likely to be negligible. Calculating in this fashion we find the maximum number of persons or companies owning from 2 to 6 buses is 188, and these own between them 523 buses, leaving for the four districts a maximum number of only twelve persons or companies owning more than 6 buses and a total of 165 buses between them. It would appear from the report of Messrs. Mitchell and Kirkness that the single bus-owner dominates throughout India, though no figures are given in that report to show for any fact the extent of this dominance. The phenomenon is not, of course, peculiar to India but is found everywhere, where similar

* For further details re. hire-purchase transactions see below chap. IV.

† So put because some owners may be counted more than once in the above tables.

conditions exist.* It is interesting to note that even in U. S. A. a comparatively small unit flourishes in this business. We learn that in that country out of 3996 stage or bus companies, 3476 were operating five cars or less and only eighteen were operating 100 cars or over.† Conditions in Great Britain with its high degree of financial concentration, seem to be radically different. The diffusion of ownership, however, is quite marked even in that country, in the case of truck operators.

(iii) *Localisation of buses* :—The district police records also contain information regarding the registered addresses of the owners of public vehicles plying for hire. The following table gives the number of buses at places at which 20 or more buses have been so registered. In the road map the more important centres of registration have been shown with indication as to the class in which they fall. In preparing this table the registered address of the owner has been taken to be the place at which the bus is located. This supposition may not in all instances be correct i. e. a bus may be garaged at and may start its run from a place other than the place given in the register as the address of the owner. Such cases would, however, be exceptional and would not, it is believed, substantially alter the distribution between places as given in the table.

TABLE 7.
Places in the six Districts, with 20 or more buses.

Name of the place	No. of Buses	Name of the place	No. of Buses
Poona City	253	Mahad	87
Sholapur	137	Ratnagiri	86
Kolhapur	114	Talgaon (Dahlade)	32
Ahmednagar	111	Chiplun	32
Satara	78	Wai	30
Sangamner	58	Ghodnadi	26
Karad	53	Panvel	21
Ahmednagar	46	Pandharpur	20

It will be observed that at only one place viz. Poona City the number of buses registered larger than 200; in three places

* Vide, for example The Report of the Board of Enquiry into the Motor Transport Industry of Palestine (1931).

† National Association of motor bus operators, 7th annual meeting proceedings p. 37 (1933).

falls between 100 and 200 and in four between 40 and 100. The number of places at which the number of buses registered is 10 and more but less than 20 is 18 and the total number of buses at such places is 250. The corresponding figures for the groups, 5 or more but less than 10, and below 5 are (i) Number of places :— 24 and 85* (ii) Number of buses :—175 and 158.* One important defect of this table is the lack of direct information regarding the number of buses registered in the Indian States. Quite a large number of buses registered with the British Indian District authorities have owners with addresses in some State. The figures given above for Kolhapur are for buses so registered in the contiguous British Indian Districts. We have, however, no information for buses registered in Kolhapur but not registered with any British Indian District authority. We have no means of judging whether the number of such buses would be likely to be small or large. From information that we had from Phaltan it was found that the number of buses not registered with British Indian authorities was at that place not considerable. No reliable information is further available for any of the following Indian States towns all of which have a certain number of buses located in them viz. Sangli, Akalkot, Miraj, Bhor and Aundh. From information obtained from questionnaires we have been enabled to place these towns roughly in the classes of bus numbers for road map purposes. But these are approximations merely.

No particular conclusion can be drawn from the table of localisation given above. This is especially so as we have nowhere else seen similar information tabulated for any other tract; and we are thus not in a position to say how the diffusion or concentration in this area, compares with any other. There is a fair degree of concentration of buses to be observed; and this concentration, as is to be expected, is found in the more important centres of population. Where a large number of buses is located even though the population of the town is not considerable it will be found that this is due mostly to remoteness of railway facilities. Such instances are those of Sangamner, Satara, Junnar, etc. At the other extreme it will be seen that there is a very large number of places at which less than 5 buses are registered. Some of these places would be on the outskirts of big cities and sometimes buses may be registered there

*These figures refer only to the 4 districts of the Deccan

to escape the municipal wheel tax. But such cases would be very small. It seems that even at places which are not the originating points of considerable traffic, or the termini of such traffic a few buses would be located. A number of these places of small registration are the smaller railway stations to and from which there is a certain amount of traffic with neighbouring places. In such cases while a number of buses registered at the most important neighbouring town, where there is any such, would participate in this traffic, there would be some buses located at the place of the railway station itself. Further there are a few buses always located at the terminal points of small by-ways branching off main routes. And there are also a few buses located at most important points along all main routes of motor traffic. The ownership of buses at the smaller centres is mostly confined to local people. Such business is undertaken by persons in each locality who expect, largely through inexperience, to make profits. Their advantage lies in some saving in municipal taxation and in overhead costs such as that of garaging; their disadvantage lies in the very limited volume of traffic originating at their starting point.

(iv) *Countersignatures* :—All motor vehicles plying for hire are primarily registered with one District Police authority. Many bus routes, however, lie through more than one district and the owner of a bus registered with one district authority has to get his permit countersigned by the authorities of the other districts over whose roads he wants to run his bus. The charge* made for such countersignature is Re. 1 and the obtaining of a countersignature does not necessitate a fresh inspection of the vehicle. Such reciprocity of treatment, however, does not exist between the authorities of the British Indian districts and the Indian States. Countersignatures may be obtained from more than one authority. This may be necessary in the case of such long routes as Poona—Kolhapur, Poona—Chiplun, or Poona—Nasik. Ordinarily, however, bus routes would fall within not more than two districts. The following table shows the number of countersignatures obtained during the year 1932-33 from the police authorities of the various districts by bus-owners in other districts.

* It is not known how and why this charge is made. The Bombay Motor Vehicles Rules (No. 5) distinctly lay down that no fee is payable for a countersignature.

TABLE 8.
Countersignatures in five Districts 1932-33.

District	No. of Countersignatures
Poona	274
Satara	110
Ahmednagar	118
Sholapur	95
Ratnagiri	39

It was not possible to obtain an analysis of the places and districts of origin of bus-owners who obtained the countersignatures. This would not, however, have yielded any important results; because as there is no system of licensing along definite routes prevalent, a bus-owner who obtains a counter signature could run his bus along any road in the district. The number for each district given in this table added to the number of vehicles registered in the district merely gives the total number of vehicles that could and perhaps to a large extent do run along the roads of the district in any particular year.

(v) *Analysis of Bus-owners' Questionnaires* :—The total number of buses operating in the districts, the unit of ownership and their distribution between places was the type of information that could be extracted from the records of the District Police. All other information we had to collect by personal investigation. The facts as collected from the Police records are the total facts; those compiled from the answers to our questionnaires are only samples. The validity of the conclusions that we draw from them depends, therefore, on the extent to which the sample could be taken as representative.

A total of 155 questionnaires from bus-owners in the various districts were filled in by our investigator during his tour. The following table gives the distribution of these questionnaires over the various districts. Though this distribution is not strictly proportional to the number of buses in the various districts it is fairly evenly distributed over the whole tract. There is, it must be admitted one slight bias in the sample. It is that it tends rather to emphasize the facts regarding the bigger and the better organized bus-owners. This was inevitable, as only from among this class could we expect to obtain coherent and useful replies. But pains were taken to reduce

this bias as far as possible. The following table shows the distribution of the 155 bus owners who replied to our questionnaire and the number of buses that they owned among the Districts and States.

TABLE 9.
Number of questionnaires filled in each District.

District	No. of questionnaires	Number of buses
Poona ...	43	62
Ahmednagar ...	25	57
Satara ...	25	61
Sholapur ...	25	66
Kolaba ...	14	25
Ratnagiri ...	14	45
Indian States		
Akkalkot 2	9	47
Sangli 2		
Miraj 2		
Kolhapur 3		
Total ..	155	363

The table given below further analyses the bus owners replying to our questionnaire according to the number of buses that they owned.

TABLE 10.
Bus-owners classified according to the number of buses owned by them.

Number of buses owned	No. of owners	Total No. of buses
1 bus ...	89	89
2 buses ...	27	54
3 " ...	13	39
4 " ...	6	24
5 " ...	8	40
6 " ...	3	18
7 " ...	1	7
8 " ...	1	8
10 " ...	3	30
11 " ...	1	11
12 " ...	1	12
15 " ...	1	15
16 " ...	1	16
Total ...	155	363

It will be apparent from this table that though the proportion of one-bus owners is smaller in our group than in the total, the single-bus owner is yet amply represented in it. Our sample, it may be noted, comprises of 363 buses, which is approximately one-fifth of the total number of buses plying for hire in the tract. The sample is thus large enough to enable us to draw conclusions from it regarding the whole industry with some assurance.

(vi) *Owner-Drivers*:—We may now turn to some facts regarding organisation and running of the industry on which the replies to our questionnaire throw some light. It has appeared from the total statistics how the single bus-owner predominates in the tract. Our investigation makes clear the extent to which the single bus-owner is also an owner-driver. We found that out of the 84 single-bus owners in our group 34 employed no drivers and drove the buses themselves. We also found that from among those who owned more than one bus 77 drove one of the buses themselves and employed drivers to drive others. Such owner-drivers, of course, were found only in the 2 or 3 bus-owning classes. It is likely that the proportion of owner-drivers in the total is even somewhat larger than that shown in our sample (40 p. c. of single bus-owners and 10 p. c. in the more than one bus owning class). Though the exact extent of this cannot even approximately be calculated it may be safe to say that about 300 buses are being driven by owner-drivers in the tract and that this class of persons is large enough to affect materially the organization and the character of competition within the industry.

(vii) *Route mileage and mileage travelled daily*—One of the most important points on which we tried to obtain detailed information was the mileage of the routes over which buses plied and the mileage of the total run of buses each day. We obtained information regarding the routes over which buses ran for 326 buses. In a number of cases as the route over which the bus would run was indefinite, no information was given in this behalf. The following table shows the number of buses classified according to the various groups of route mileage.

TABLE 11.

Buses classified according to the mileage of their routes.

Miles. 5-10	Miles. 11-20	Miles. 21-30	Miles. 31-40	Miles. 41-50	Miles. 51-60	Miles. 61-70	Miles. 71-80
4	26	67	47	50	34	94	22
Miles. 81-90	Miles. 91-100	Miles. 101-120	Miles. 121-140	Miles. 141-151			
19	4	4	4	5		Total ...	326

The most important characteristic of this table is the large variety of types of routes that it exhibits. There were no routes less than five miles in length. Our enquiry was definitely restricted to district traffic and did not refer to buses operating within a city. There are, however, in this tract no cities in which a bus service is operated and the suburban development of no city is yet large enough to bring into existence a city-suburban service.* Periodically in the year the holding of fairs or the occurrence of festivals gives rise to temporary services, some of which such as Chaturshingi-Poona City may also be of a short length. These are notoriously exceptional and, as the table shows, routes of even less than ten miles in length, are insignificant.

On the other hand no route in our survey was found to be longer than 161 † miles and the total number of buses running on routes longer than 90 miles in length was distinctly small. As between, however, the groups of routes 11-20 and 81-90 miles in length there is no considerable concentration at any particular lengths. Neither is the gradation shown by the table at all even. If the table were represented by a curve it would show two peaks one at 21-30 miles and another at 41-50 miles. If one refers to the Mitchell-Kirkness idea of a 50 mile zone one finds that more than one-third of the buses are, according to this table operating on a

* A possible exception is the existence of two or three buses plying between Bhambarda Station and Poona City.

† Poona-Chiplun

route longer than 50 miles in length. All that can be said from the table, therefore, is that while 10 and 100 miles seem to set the lower and upper limit to length of routes the diversity as within these limits is very considerable and the distribution of buses on the varying length routes remarkably spread out.*

A similar phenomenon of diffusion is also to be observed in the data regarding the number of miles travelled each day by a bus. This data is likely not to be so accurate as the previous one regarding route mileage. The element of estimation entered into this is larger in extent.† Along any route the number of trips made by a bus are not uniform through time and there are absolutely no records kept by bus-owners as to the number of miles individual buses ran. In places where there was a roster system prevalent calculations regarding average miles run was made still more difficult. An attempt was, however, made in filling the questionnaire to get all these points cleared and the following table presents the results obtained.

TABLE 12. ✓

Buses classified according to miles travelled during the day by each bus.

21-30	31-40	41-50	51-60	61-70	71-80
3	17	35	23	14	88
81-90	91-100	101-120	121-140	141- Above	
45	50	24	34	29	Total 362

* It may be that the comparatively slighter importance of the single-bus owner in our questionnaires may exaggerate the importance of long routes in these statistics.

† The mileage meters on buses give no information; in the large majority of cases they get out of use or are deliberately put out of use shortly after the purchase of the bus.

The table refers to 362 buses out of 363. It should be noted that the average of miles run refers to buses in active service only. It allows for periods of slack traffic but does not allow for days lost in overhaul or repair or inspection or closing of service or withdrawal of bus from service for any other reason. This table again exhibits the characteristics of diffusion and lack of gradation. There is distinct concentration in the mileage groups 71 to 100; the number of buses here being 50 p. c. of the total. But nearly 10 p. c. fall between 41-50, another 10 p. c. between 51-70, almost 25 p. c. above 100 and a small percentage even below 40 miles; 20 miles in the lower limit and about 160 the higher.

We had in our questionnaire included questions regarding the reasons which had induced owners to fix upon particular routes and also their opinion as regards the comparative profitability of short and long routes. It cannot, however, be said that the replies obtained to these questions were either very useful or informative. To the first type of question the reply in the majority of instances was that the route or routes were chosen because they were convenient. By this it was meant that the route lay roundabout the place of residence of the owner. Some merely replied that they had long been used to the routes along which they were now plying. While others gave their reason for the choice of a particular route as being the comparative absence of competitors along it. Then again it was said by some that they were members of a union and that the union cars ran only along certain routes. Only in a few cases was the entering into a contract with the postal authorities for carrying mails given as a special reason for the choice of a route. It will thus be seen that little new light is thrown on the problem by replies to our questions. The large majority of small bus owners pitch upon routes which are within a convenient distance of their place of residence. Among the alternative routes radiating from such place of residence they have not necessarily any particular preferences and are always ready to change the routes as the intensity of competition or otherwise renders desirable. Except in the case of few old established concerns there is no question of goodwill or an established clientele along a route. This does not, of course, mean that a large number of bus-owners change their routes along which their buses ply from time to time. Through

sheer inertia old traditional routes are clung to by many. But there is quite a considerable number at margins who are in search of alternative routes which may prove more profitable.

These considerations were further emphasized by the replies given to the question as to whether long or short routes were more profitable. There was here a practical unanimity exhibited in favour of short routes. The reasons given for this preference were much the same in all questionnaires filled in. These were the savings on account of allowances or salaries to be paid to drivers and cleaners if the route was long and the bus did not return every day to the home town and the fact that if the bus did so return it could be kept under the constant supervision of the owner. Another item of saving would be, though this was not mentioned specifically by any owner, the fewer tolls that would have to be paid daily along a shorter route. It should be observed that the question concerned routes and not mileage run. It is obvious that a large daily mileage would prove economical; the question is the distribution of this mileage along a long route or a series of trips along a short one. But while everybody agreed that short routes would be preferable (it has further to be observed that the per mile fare usually runs higher along a short route than a long one) to long ones, it was equally unanimously pointed out that the short routes were also the more crowded ones and that hence there was little choice left in the matter. A large number perforce had to ply along long distance routes. It was pointed out above that the chief limit laid to the length of the desirable route was the possibility of returning to the home town at the close of the day. But even this allows a fairly long range. A daily return trip could be undertaken along a route up to a maximum of 80 miles in length; though even this would be rather too long a route for a single bus-owner to undertake. Routes of this magnitude and above would be undertaken chiefly by the larger units owning more than three buses. There is, however, another consideration to be taken account of. It is that along most routes there come into existence spasmodically temporary combines of bus-owners and the operation of these * enables even single bus-owners to participate in the traffic along long routes. Hence there are within very large limits no important

* Vide below Chap. VIII.

factors determining the choice of routes other than the convenience of owners and the fact of competition.

(viii) *Unladen weight of buses*:—The following table analyses the data regarding the unladen weight of buses owned by those who replied to our questionnaire.

TABLE 13.

Tonnage analysis of buses from Questionnaires.

District	No. of questionnaires	No. of buses	Buses 1½ Ton	Buses 1 Ton	Buses ¾th Ton	Buses ½ Ton	Tonnage
Poona	43	62	59	...	...	...	3
Ahmednagar	25	57	57	...	...	...	...
Satara	25	61	42	3	7	...	9
Sholapur	25	66	65	1	...	...	...
Kolaba	14	25	2	7	9	...	7
Ratnagiri	14	45	...	...	37	7	1
States	9	47	46	1	...	...	...
Total	155	363	271	12	53	7	20

It will be obvious that the 1½ ton bus is overwhelmingly predominant in the Deccan Districts. On the other hand buses over a ton in weight are almost entirely absent from the Konkan Districts, where the dominant type is the ¾ ton bus.* This is entirely due to local regulations in the two Konkan Districts. Here the bridges and culverts over the large creeks are not of sufficient strength to allow for the passage of the heavier vehicles; hence strict regulations regarding tonnage. The number of touring cars in Satara is due to the fact that from this district a number of routes lead down the ghats in to the Konkan and for this purpose heavy vehicles are especially at certain seasons unsuitable.

* We are informed that heavier vehicles are more generally allowed and more numerous in the Konkan districts at present.

TABLE 14.

Number of motor vehicles licensed to ply for hire inspected,
in each district.

District	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Poona ...	249	292	312	348	422	538	688	735	716	624	632
Satara ...	95	241	287	220	420	538	671	599	573	483	459
Ahmednagar ...	...	...	...	...	...	214	199	321	270	271	295
Sholapur ...	...	...	...	...	...	...	244	262	255	232	212
Kolaba ...	76	104	125	141	165	169	295	224	225	215	223
Ratnagiri ...	...	...	...	180	225	144	165	236	190	230	289

TABLE 15.

Permits, (1) Owner's "A" and (2) Driver's "B" newly issued
and Renewals during the years 1929, 1932

District	Owner's permits "A"				Driver's permits "B"			
	Issued		Renewed		Issued		Renewed	
	1929	1932	1929	1932	1929	1932	1929	1932
Ahmednagar ...	158	93	142	178	225	114	212	233
Poona ...	266	389	371	235	328	379	426	447
Satara ...	248	231	182	252	352	327	254	264
Sholapur ...	194	101	86	131	238	174	100	165
Kolaba ...	72	115	124	130	32	58	202	224
Ratnagiri ...	95	95	95	166	76	88	168	230

TABLE 16.

Motor vehicles (i) Newly Registered, and (ii) Re-registered,
during 1930, 1931, 1932.

District	New Motor Vehicles registered			Motor Vehicles re-registered.		
	Cars.			Cars.		
	1930	1931	1932	1930	1931	1932
Ahmednagar ...	108	50	22	361	375	346
Poona ...	389	313	200	1634	1748	1726
Satara ...	82	50	82	336	355	352
Sholapur ...	89	69	68	344	343	374
Kolaba ...	40	23	20	215	253	241
Ratnagiri ...	21	33	47	152	168	168

CHAPTER IV.

Bus-Sales and Sales Finance.

We intend dealing in this chapter with problems connected with the purchase of motor-buses and the financing of these purchases. The present owners of buses have bought their buses either new or second-hand and have bought them either with cash or on an instalment payment basis. The new buses have been bought through the accredited agents of motor companies and the second-hand buses either directly from the past owner or through agents of some sort. The financial resources of the majority of bus-owners are slender and it is not surprising that a very large number of them either go in for purchase on the instalment basis or have to raise funds by borrowing when they buy the bus outright.

(i) *Volume of cash and instalments business*—In all cases in which a car is bought on the instalment system the fact is noted in the police register at the time of the registration of the car.* Hence it is possible to derive from these registers information regarding the number of cars bought on the instalment plan whose instalments had not all been paid off at the time of the renewal of registration (usually in March or April). The following table gives figures collected from the registers of the various districts during the period September 1932 to February 1933. The instalments are mostly so fixed as to be paid off during the period of one year.† So that these figures represent broadly the instalment transactions that took place during the year preceding the time at which the figures were collected from the district register. As we have no idea of the total number of sales of new and second-hand cars that took place during this period we cannot

* The seller in this case continues to be the real owner of the car until all the instalments are paid and the buyer is merely the hirer for the time being. In the registers the names of both the owner and hirer are given. We have taken it for granted that wherever a hirer is mentioned in the register it is a case of sale on instalment basis.

† It has, however, to be noted that the instalments are not always punctually paid and the hire-purchase transaction may drag on for a much longer period than one year.

determine the proportion of the sales by instalment, to total sales. It is obvious from the figures, however, that this proportion must be an extremely high one.

TABLE 17.

Number of buses bought on instalment, in four districts 1932-33.

District.	No. of buses.	District.	No. of buses.
Poona.	203	Satara.	167
Ahmednagar.	47	Sholapur.	47
Total	250	Total.	154

It is likely that the sales of cars on the instalment or hire-purchase plan has declined recently and that this is specially the case with the sale of new cars. We have reason to believe that this decline took place most markedly in 1931. This will be apparent from the following combined figures of sales of two firms of distributors for the years 1930 and 1931.

	* 1930	1931
Cars (new and second-hand) sold for cash	36	43
Cars (new and second-hand) sold on instalment	144	88
Total no. of cars sold.	180	131

Thus even with a decline in the total number of cars sold there was an increase in those sold for cash. This is obviously the result of the growing realisation, forcibly brought home on account of the depression, by manufacturers and distributors of the fundamental unsound basis of the transport industry and the risks attendant on sales by instalment. This is best expressed in the

* As pointed out below, while these statistics furnished by two big distributors may be taken to indicate correctly the trend regarding new car business it does not necessarily represent the complete picture regarding the second-hand business in which such distributors play a comparatively small part.

terms used by a prominent firm of manufacturers in a letter. "The instalment plan helps in placing more vehicles on the road with consequent increase of sales volume, and ultimate increase in service revenue from both labour and parts sold. However the monthly drain of paying instalments normally leaves insufficient funds available for keeping vehicles in proper repairs and condition, which lack of service is to be deprecated by the manufacturer." Not only is it, however, the lack of service that results but also failure to pay instalments in time, with a lot of inconvenience caused to the seller. This may best be exemplified by the combined figures of the "not-satisfactory" business supplied by the two distributors, combined figures of whose sales on cash and instalment are given above. These are for 1930,31 and for 1931,32. The figures of "not-satisfactory" business all relate to sales on instalment and it will be seen what a large proportion of the total sales effected they represent, especially for the year 1930. Even so, however, we were told that the figures did not reveal the picture completely. For "in a number of instances the hirers have raised monies on personal effects to pay the instalments; besides, knowing the plight of hirers this company has treated them most sympathetically; we can cite cases where instalments have been allowed to lapse for months together. ... But for this leniency the number of defaulters would have been much more." * We have said above that it is chiefly the instalment sales of new cars that must have suffered of late years. This is because the sale of second-hand cars is very largely in the hands of a different set of businessmen from the distributors working for car manufacturers and the method of repayment etc. provided for by these businessmen is such that they do not run the risk of losing their money even if the business of transport may not be paying.

(ii) *The Hire-purchase system*:—The terms on which sales on instalment are made are usually as follows. The initial payment to be made covers one-third of the price of the vehicle, plus insurance premium under a comprehensive policy including passenger risk and deposit for the due fulfilment of the contract. The deposit is repaid at the time of the last instalment. The remaining two-thirds of the price of the vehicle plus 10 p. c. interest on this two-thirds for

* Quotation from a letter from a firm of distributors.

the whole year is paid in 11 equal monthly instalments. In the case of second-hand vehicles the practice is much more elastic than it is with new cars. But here also generally not less than one-third of the price of the vehicle has to be covered by the initial cash payment. The balance is payable in instalments not exceeding eleven.* The rate of interest charged by the bigger distributors is usually 10 p.c. but it varies with the other agents in the business at from 12 p.c. to 18 p.c. One prominent firm of distributors informed us that they did not insist upon insurance unless the price of the vehicle exceeded Rs. 1800. Generally most dealers selling second-hand cars on the instalment basis do not insist on the car being insured.

The way in which these conditions work out may be illustrated concretely. Thus for a new bus costing Rs. 3000 the initial cash payment (including the entire insurance payment for the year and certain miscellaneous expenses) would amount to about Rs. 1400. And the hirer would have to incur an additional expense of between Rs. 300 to 400 for fitting the chassis (which is the only thing usually sold by the company) with a body and buying accessories, etc. The monthly instalments would work out to about Rs. 200. In case the insurance payments are also partially spread over the instalments, which is sometimes done, the initial payment would be less by about Rs. 200 and the monthly instalments more by about Rs. 20. For a second-hand bus priced at, say, Rs. 1800 the initial payment (not including insurance) would be about Rs. 600 and the monthly instalments, if eleven in number, would vary between Rs. 120 and Rs. 130. The buyer of a second-hand bus, of course, gets the vehicle already fitted with a body, though he may have to incur certain overhauling expenses dependent on the condition of the vehicle. It will be observed what considerable difference, especially in initial payments exists in the cases of the new and the second-hand buses. This difference is in some cases made much wider by the practice of certain dealers in second-hand buses in some districts of not insisting on a large initial payment. These dealers fix the initial payment at the level mostly of an instalment. Thus for an initial payment of between Rs. 200 and Rs. 300 but

* These are the standard terms; but as noticed below a very considerable laxity in terms has crept into the business especially in the case of second-hand cars.

sometimes even so low as Rs. 150 a person could enter the transport industry. Such sales are usually made especially to drivers known on the road and the rate of interest in such cases is much higher than in others. Similarly there is to be noticed in many cases a spreading over of instalments over a much longer period than 11 months.*

The instalment system's other name, the hire-purchase system, is in a way more significant; for, until all the instalments are paid off the seller is technically the owner of the car and the purchaser merely a hirer. Apart from compulsory insurance in the case of new cars there are a number of other conditions that are usually incorporated in a hire-purchase agreement. The manufacturers have standardised this form and the smaller dealers selling used cars use a form which is in effect a translation (in Marathi) of this standard manufacturers' form. The most important of the terms incorporated in this agreement are that (i) all monies payable to the hirer by any insurer in respect of the car shall be assigned to the owner, (ii) the hirer shall keep the car free from all liens and charges and shall not remove it without the owner's consent out of a given local area, (iii) the hirer shall keep the car in good condition, permit its examination at any time by the

* The experience in this respect of this tract does not seem to differ materially from that of other countries. From the article on the hire-purchase system in the Social Sciences Encyclopedia the following information has been summarised for purposes of comparison. The instalment sales predominate everywhere in the automobile business. Such sales were estimated with respect to value to form 70 p. c. of business in U. S. A.; 50 to 80 p. c. in England and in Europe for the year 1927-28 they varied between 15 p. c. for Spain to 80 p. c. for Denmark. Whereas in some states of U. S. A. and in France the seller cannot by law retain his title to the car, in England the form of sale is hire-purchase. In this form "the owner agrees to rent the article to the hirer (in reality the purchaser) for a stated period and stipulates certain number of instalments for rent; after the last one the lessee has the option of purchasing the article for a nominal sum or for no sum at all." We learn that in other countries instalment sales declined sharply in 1930-31 and that here also "competition first forced the grant of instalment credit and then smaller down terms and longer periods." The cost of such instalment credit is said to vary between 10 p. c. and 40 p. c. It will be noted that the volume of instalment business in India seems to be somewhat smaller than that in the advanced Western countries and that the Indian system of sale is analogous to the English hire-purchase system. In other respects conditions show very similar trends.

owner, pay on demand expenses for repairs deemed necessary by the owner and not make any alteration in the car without obtaining the previous consent of the owner, (iv) if the hirer make default in the punctual payment of the hire or fail to observe any of the conditions of the agreement the owner may forthwith terminate the agreement and resume possession of the car, (v) the hirer shall have the option of purchasing the car during the currency of the agreement by paying in one lump sum the balance of the total hire remaining due. In this case a fair and reasonable rebate on prepaid hire payments would be allowed by the owner.

The presumption that it is chiefly the instalment sales of new cars that have suffered of late arises from the fact that the difficulties enumerated above are felt by the larger distributors. The bulk of the second-hand business is in the hands of smaller dealers who keep a much closer control over their hirers. In the majority of cases these dealers insist that the net takings of the bus each day should be paid in at their shop at the end of the day. The net takings mean the total money received in fares minus only such essential expenses as cost of petrol and lubricants, tolls, etc. The owner in this case makes a small monthly or daily allowance towards the hirer's keep. The monthly instalment is in this case, in effect, paid by daily payments and the hirer is here more purely a hirer than anything else. The dealers in such transactions run little risk of being defrauded or even inconvenienced. This business, especially when coupled with a low level of initial payment and a larger number of monthly instalments, does not diminish in volume but shows signs of increasing with the increasing turn-over of owners in the industry. As the proportion of second-hand business to business in new cars is very large it is doubtful whether in spite of some decrease in the number of new cars sold on instalment the total volume of instalment business has suffered.

It is not necessary for us to discuss here the economics of sales by instalment. The effects, however, of the prevalence of this mode of sale on the motor transport industry may be indicated. We have seen how of recent years instalment sales have grown in proportion to cash sales and how similarly the sales of second-hand vehicles has grown in proportion to the sale of new cars. Certain firms of manufacturers do not provide at all for the sale of their

cars by instalment. They report that in the business, defaulters are so many and the recovery of arrears through courts so troublesome that the sales thus effected are not worth the time and money spent subsequently on seeing the contracts through. These firms have naturally lost their business heavily in recent years. If, however, the manufacturers or distributors are willing to undertake a certain amount of trouble and undergo some risks the business from their point of view is not necessarily a losing one. From the point of view of the industry, however, this sale has made entry into the business of any one, especially one who knows how to drive a car and knows something about its mechanics, extremely easy.* The only real financing required is for the initial payment; the instalments, especially in the case of the second-hand bus, would be paid out of the earnings from business. No doubt no margin would thus be left for keeping the bus in thorough repair or for replacing it after its short earning life is passed. But buyers rarely look forward so ahead; and this, of course, in its turn explains the rapid turn-over of buses. The instalment plan by reducing materially the financial equipment necessary for entry into the business has certainly widened the range and intensity of competition therein.

(iii) *The financing of purchasers* :—It was possible to get a considerable amount of information regarding the working of the instalment sales, but very little of it was available in respect of the financing of cash purchases or the financing that might be necessary for the initial payments in case of purchases on instalment basis. This was an aspect of the problem on which perhaps we were able to obtain the least amount of information during the course of our enquiry. While those whom we questioned did not show much reluctance to disclose whether they had purchased their cars on the cash or the instalment basis it was otherwise with the question whether they found all the money themselves or had to borrow part or whole of it. No information was oftentimes given; and even when it was given it was found to be not always reliable when checked by enquiries in other quarters. What follows, therefore, is merely the result of general observation. It may be safely asserted that a very large proportion

* The extent of this may be indicated by the fact that those who replied to our questionnaire 25 began life as drivers.

of the buyers find the cash by borrowing. The borrowing is effected on the strength of the car, on personal security and on some other collateral such as land, house or ornaments. Money is most often raised on the security of some property in addition to the security of the car. The rates of interest are said to vary between 9 and 24 p. c.; the variations must needs be large as the rate would depend on the peculiar circumstances of each case. The class of lenders in this business seems to be nowhere different from the general class of people who do money-lending. As a fact most of these lenders are money-lenders in other ways also. In a number of cases these money-lenders follow a procedure for recovering their monies similar to that described above of one class of second-hand bus-dealers. That is they compel a borrower to pay in all the daily net takings each day, paying him a certain sum for his upkeep and financing him also in his incidental business expenses such as the purchase of tyres or tubes, effecting repairs, etc. The balance of these transactions is struck periodically, usually once every six months and the borrower keeps on paying the lender all daily receipts till the whole debt is wiped off. It is in such cases difficult to distinguish clearly between money-lending proper and dealing in cars, etc. For, some who have begun as money-lenders have gone on naturally to dealings in second-hand cars and further to spare parts and accessories shops or repair workshops; and others who have prospered as shopkeepers connected with the motor trade have in course of time taken up instalment sales and money-lending. It is difficult also to state clearly in the cases of big dealers of this type as to who is running the buses. Their control over the cars is so complete and the borrowers or hirers so entirely under their command that it almost seems that they are running the transport services with hired labour. The buses again are never for long out of their ownership; for, soon after the hirer completes his contract and becomes owner of the bus he feels the necessity of disposing of his car and it gets back to the ownership of the former people, who repair it in their workshops and sell it on the instalment plan to somebody else. There remains, however, this important fact to notice, that it is the hirer who conducts the transport business as such and who takes all the risks, and who in the end normally suffers. The people who prosper confine themselves to shopkeeping, to sales and finance; for, as in that other doubtfully profitable Indian industry viz. agriculture, it

is possible to make money out of financing this business but not out of conducting it yourself.

Conditions being what they are we found that no joint-stock banks or co-operative banks in these districts afforded any credit to buyers of buses. Nor are there to be found any co-operative societies, credit or sale and supply, among bus-owners.

(iv) *Distributors and Agents* :—Sales of buses throughout these districts are effected through the authorised agents and sub-agents of the manufacturers. In some exceptional cases the manufacturers do a certain amount of business directly with the public but as a general rule the distributing agency is that of agents. Usually sole agency for a large area such as that of a province is given to one firm and it is left to that firm to appoint sub-agents for smaller areas like districts. In this Presidency the head offices of the agents are usually situated at Bombay. The agents of all the important manufacturers have offices themselves or work through sub-agents at the district head-quarters and at important places like Kolhapur, Sangli, Mahad, throughout the area surveyed. The agents undertake usually to sell a certain minimum number of vehicles each year and they impose a similar undertaking on their sub-agents. The cars are sold to the agents by the manufacturers for cash and not usually sent as on consignment. The agent may sell the cars either on the cash or the instalment basis.

The manufacturers incur a certain amount of expenditure on advertising but this has to be supplemented by advertising by the agents who also appoint their own canvassers and salesmen. In most important centres the car sales business is combined with an accessories and spare parts department and a repair workshop. A ready and near at hand supply of spare parts is essential for sales of vehicles on large scale and the importance of service and repair stations is considerable, especially when the mechanical competence of owners and drivers is small. Indeed, this has been so forcibly realised by manufacturers that many of them have in recent years pursued a policy of compelling their agents and sub-agents to combine these additional departments with their sales agency.

CHAPTER V.

Traffic.

(i) *Density of Traffic*:—All our efforts to obtain some kind of definite information on the volume of traffic along different routes failed entirely. No traffic surveys or counts have been to our knowledge undertaken by Government in this area. We have already noted the fact that Government has recently classified the various roads according to the density of traffic along them. But there seems to have been no traffic survey undertaken before effecting this classification. In U. S. A. in almost all regions elaborate plans of highway improvement have been based on very exhaustive traffic surveys. No doubt the volume of traffic along our roads is not large enough yet to call for such exhaustive surveys. In England "with the object of providing materials for the methodical study of traffic problems the Ministry of Transport in collaboration with highway authorities throughout the country, have collected detailed statistics of the traffic passing over Class I and Class II roads at intervals of three years since 1922".* These censuses yield accurate and detailed information regarding the amount and nature of that traffic, the rate and direction of its growth and its bearing on highway costs. In all these respects we are, in India, absolutely in the dark. Even for the purposes of the report of Messrs. Mitchell and Kirkness no attempt seems to have been made to gather such information. For, though in that report certain estimates of public vehicles plying for hire along important routes are given, nothing whatever is said of the total volume of traffic along roads.

The lack of this data seems to be due entirely to the non-awareness of the authorities to the necessity of collecting it. The system of tolls has been in vogue along District Local Board roads during all these years and the provincial tolls have lately been revived. The toll bars are situated at convenient intervals of between 10 to 20 miles. There are in addition the octroi stations maintained by a large majority of the municipalities. It is obvious that by making use of these agencies traffic counts could have been taken without

* Road Traffic census 1928. Ministry of Transport, London.

a great deal of trouble or expense. The record of the toll bar contractors is not kept in such a form today as to yield either exhaustive or completely accurate information. But if it could have been available to us some useful information could have been extracted from it even in its present form. For obvious reasons the toll contractors whom we approached would not supply us with any information at all. It will appear later that some use has been made by us of some of the municipal octroi records. An alternative source of traffic information that was sought by us was the diaries maintained by police stationed at various subsidiary police stations or nakas. There are at motor stands in most important cities and at various places along important roads police constables stationed, one of whom is expected to record the number of motor vehicles—especially those plying for hire—leaving the stand or passing the roads. We had, therefore, hoped to collect some useful data through this source. Through the kindness of the police authorities of the various districts we had obtained information from these diaries for some weeks of 1932-33 regarding traffic movement. In Poona the information contained in the police diaries relating to a great many stations was tabulated by us for a period of some months. After, however, this information had been carefully compiled it was found that the results it yielded were so obviously defective when checked by reference to other sources that no use could be made of it. For example, the recorded number of buses starting from the two important motor stands was for a number of days shown as even smaller than the number that can be seen at a crowded hour as waiting at that stand on any day. In the same way at Poona, Satara and Ahmednagar the number of buses running along particular routes was shown as being much smaller usually than the number noted from other sources as plying for hire on these routes. It was thus obvious that the work of filling in these diaries was very perfunctorily performed. There is little supervision or check on them and as they are not later used by any superior authority for compiling returns etc. they are naturally entirely neglected.

In the absence of all outside sources of information we have to fall back upon answers to our questionnaires for some information. We had asked the various owners to state the approximate number of buses running along routes over which they

plied their vehicles. This information is available for a great many routes and part of it is printed at the end of this chapter. This, however, it will be seen is no guide to the density of traffic along roads. For, we have no information at all regarding the numbers of private motor cars and bullock and horse vehicles. The movement of all these forms of traffic is very important. It has been noted elsewhere that the proportions between private cars and commercial vehicles is in India very different from that obtaining in the richer and more advanced countries in the world. This is apparent from the numbers of vehicles in these two classes in the different countries. But the extent to which the private car is used for moving about from place to place as against mere city-use cannot be estimated in the absence of road density statistics. Similarly the comparative incidence of tolls etc. on private and commercial vehicles cannot even approximately be ascertained. Even more important than this are perhaps questions connected with bullock-cart traffic. The series of counts taken in England show how rapidly horse transport has sunk in importance since 1922. It is obvious that in India horse transport for stage journeys in the interior away from railways has been killed by the advent of the motor; in the cities the private horse carriage is almost extinct but the hackney carriage or tonga has yet maintained a considerable portion of its ground. The bullock cart has shown much greater capacity of withstanding competition than the horse carriage. But on all these questions we have neither absolute nor comparative figures.* Thus whether it is for purposes of the road engineers and road authorities, for purposes of distributing the fiscal burden or for purposes of ascertaining the changes brought about by motor transport in peasant economy, traffic surveys or counts are of the most vital importance.

The figures given in the appendix show the approximate number of buses that ran along particular routes when the enquiry was made. The figures are entirely in the nature of rough guesses and can do little more than show the comparative importance of the various routes. They cannot even serve for gauging the comparative severity of competition along the routes. For, the data necessary for estimating this—the number of passengers

* For conditions in Bombay city see an appendix at the end of this chapter.

or volume of goods carried—cannot be ascertained for any of the routes.

(ii) *Passenger Traffic Conditions* :—The motor transport industry in this area depends almost exclusively on passenger traffic. The carriage of goods by motor has yet made very little headway. In the Konkan districts and in Satara there is an absolute prohibition of goods motor vehicles, and in the other districts the number of such vehicles is very small. In surveying traffic conditions we are, therefore, concerned almost entirely with the conditions under which passenger traffic is carried on. The size and type of vehicle employed in this business has already been indicated above. * This is the 1½ ton unladen weight lorry for the four Deccan districts and the ¾ ton unladen weight lorry for the Konkan districts. The size of the vehicle employed in passenger-vehicle transport is distinctly smaller than in other countries. For example in U. S. A. there is a distinct trend for decline in the number of the smallest classes of buses (5-17 passenger) and a very large increase in that of the largest (30 passenger and up) †. In Great Britain also the largest number of commercial buses is found in the class seating 26-32 persons. ‡ Condition of road surfaces is an obvious limiting factor in India. It absolutely dominates the situation in Konkan districts and is also of considerable importance in the Deccan. § The breadth of roads in towns through which the buses have to pass, the gradients and curves on the ghat roads must also be other important considerations. There appears to exist also an economic factor of some importance. The larger capacity buses are in the other countries mostly maintained by companies running regularly timed services. Their use depends on the availability of a large volume of regular passenger traffic. These units would be too large for single-bus owners who have daily to canvass at the motor stands for their complement of passengers.

* Vide ante p. 34.

† Bus Facts for 1933 p. 14. National Association of Motor Bus operators, Washington D. C.

‡ Motor Industry of G. B. 1932. p. 50. The Society of Motor Manufacturers and Traders, London.

§ It should be noted that the Ratnagiri-Kolhapur and the Lonavala-Pen-Dharamtar, roads are open to 1½ ton buses during eight months of the year.

The photographs attached show pictorially the general appearance and equipment of the buses that ply for hire in the Deccan districts. It is only the chassis that is bought from the motor manufacturer and the body is built up in the large majority of instances locally. This has given rise to a considerable body-building industry in a number of important places like Poona, Satara, Ahmednagar, Sholapur, Kolhapur, Ratnagiri, Sangli, etc. The accommodation provided for passengers is usually by means of two benches facing each other arranged lengthwise along the whole length of the body behind the driver's seat. This gives the maximum seating accommodation. A seat for a passenger is also provided for, next to the driver. Sometimes one or two benches parallel to the driver's seat i. e. breadthwise in the body of the car are provided for and the remaining portion taken up by the two lengthwise benches facing each other. In the ordinary arrangement all the passengers excepting the one seated next to the driver are fairly closely packed; while in cases where one or two breadthwise benches are found there is a grouping of passengers in smaller units. Higher fares whenever possible are charged for the seat next to the driver and even for seats on the breadthwise benches. In the ordinary cases the length of the lengthwise benches is 10 feet and the usual breadth of the seat 14 inches. The length of the breadthwise bench where it is found is usually 5 feet, and the breadth of its seat the same as above. In a number of cases the wooden seats are bare and where there is any attempt at upholstery it is usually with cushions fitted with coir. The space below the seats and in between the benches is usually filled with the baggage of the passengers, the extra and the heavy baggage going on top of the bus. Little or no attention is thus paid to the seating comfort of passengers. The minimum seating space, 15 inches to a passenger, is laid down by police regulations. This is available when there is no illegal overcrowding of the vehicle. The back of the car is left entirely open for the entrance and exit of passengers. There is no enclosing of this by means of door or window, neither is it usually in any way railed or barred. There are usually also no glass or other windows at the sides. The provision available against inclement weather is by means of waterproof cloth curtains in the rainy season. In all other seasons the sides are merely barred with horizontal wooden bars and the back entirely open. The ventilation is thus very thorough which, though

unpleasant in the few winter months, must be welcome through most of the year in the overcrowded bus. Such is the normal equipment of the bus; it should, however, be noted that even this minimum is not invariably to be expected and one may often have to put up with torn cushions, unsteady seats or rain curtains which are no longer water-proof.

Apart from the lack of comfort in the seating and other accommodation the delays and inconvenience due to breakdowns have to be allowed for as a normal feature of motor vehicular traffic. The reasons for the presence of these features are numerous. In the first instance the mechanical knowledge of a large number of motor-drivers leaves a great deal to be desired. Quite a number, who can drive a car just well enough to get a driver's permit are recruited by bus-owners and put in sole charge of vehicles. Further only a small proportion of bus-owners can either afford to or have foresight enough to keep their cars always in a state of complete repair. Mechanical defects are not promptly looked into and lead to breakdowns of the machinery on the roads. The same applies to tyre and tube equipment. With a lack of complete mechanical knowledge on the part of the drivers and with defective equipment of tools, spare tyres, etc. it is no wonder that breakdowns occur, but also that when they occur they involve inordinate delays and very considerable inconvenience. The improvidence of drivers and owners is such that there are often cases of cars running short even of petrol supplies before completing their regular journeys and having to wait for long until the deficiency was made good by having recourse to the nearest source of supply or through the advent of some helpful motorist with extra supplies.

There is an almost entire absence of any regular time schedules for the running of even old established bus services along the roads; and in very few cases could it be presumed that a bus will complete its journey in any fixed period of time. There is usually, to begin with, a considerable amount of time spent in hunting for passengers at the stands or collecting them from their houses in the place from which the bus starts its journey. We had included a question in our questionnaire regarding the time spent by bus-owners in canvassing for or collecting passengers before the journey commenced. Among the replies received we found a few who said that they left the stands at regularly fixed times every

day. These replies were from the better organised services. These said that it was their experience that if it became generally known that a certain bus always left the stand at a fixed time passengers tended to patronise it more and to arrive regularly at the stand for its timed departure. Before being able to earn the reputation for fixed time schedules the owner has, however, to risk a number of empty or half-filled journeys over a fairly long period. Owners who had established such absolutely fixed time schedules were naturally very few in number. Bus services running from and to—especially to a railway station—are compelled by the train timings to observe a certain amount of regularity in their time-table. The same is true by reason of their contract, of buses carrying postal mails. Along routes where a temporary or permanent union among bus-owners has come into existence the roster system of running the various member buses in rotation is practised and under this, though no fixed time schedules for the running of individual buses obtain, yet there is some guarantee that no passenger will have to wait inordinately long before his bus leaves. The large majority of buses in this tract lie, however, outside the scope of the cases mentioned above. The representative case is that of a bus canvassing for its passengers and collecting them over some length of time before it starts on its journey. The period involved may vary from place to place and from bus to bus and from time to time. Among the replies received by us the maximum period of waiting mentioned was three hours and the minimum half-an-hour. An hour or an hour and half were most often mentioned.

This is the preliminary uncertainty regarding the time of the start. There is an equally large element of uncertainty in the time taken to reach one's destination. Breakdowns, mentioned above, play a large part in this. But there are other factors also. All along the routes stops are made to pick up wayside passengers—after higgling with them regarding the fare—or to set passengers down. Along the routes there are frequent stages at which the buses habitually stop and the time for which the buses will stop is indefinite and depends entirely on the inclination of the driver. Further at such stops as are important termini or originating points of passenger traffic there is a partial repetition of the process of hunting for passengers which took place at the starting point.

Along very long routes the delay and inconvenience to passengers is additionally intensified by their being asked to change the vehicles in which they are travelling. This may be either because the service is run by means not of a single bus running through but by more than one buses making return trips over part of the route * or because towards the end of the route the passengers left in individual buses are so small that the complements in a number of them are put together in only one bus which completes the journey. † When all these factors are considered together it will be realised how great is their influence on the timings collectively. Obviously along the more important routes with a large volume of traffic the uncertainty and the delay may not be very considerable but along the less frequented routes especially if a change of buses is involved the possibility and extent of delays is so enormous as to militate seriously against the development of passenger traffic by buses.

(iii) *Accidents* :—The discomfort of the bus passenger is greatly added to by the constant fear of accidents. The number of accidents on roads in the tracts in which especially the public vehicles are concerned must be considerable. Their character is also serious and they very often result in deaths and serious injuries to the passengers. Unfortunately, the District police do not keep any separate records of motor accidents and it was, therefore, not possible for us to compile statistical data regarding them. The report on the Police in the City of Bombay contains these statistics and there is usually included in this report some comment on the specially serious accidents of the year. But similar information for all the other areas is not available in this connection. † And there is of course nothing to enable us to know the factors responsible for these accidents. We would draw special attention to the remarks on this subject contained in

* As is the practice along Poona—Nasik or Poona—Karad routes.

† As for example in the stage Wai—Mahabaleshwar.

‡ The annual report on the Presidency police for the year 1932 contains only the following bit of information. "From the reports of accidents due to rash driving, mechanical defects, etc. received from various districts it is found that during the year 123 persons were killed or died of injuries while 1,390 persons received injuries in motor accidents". The figures refer to all districts and to both private and public car accidents. It would also appear from the wording of the above sentence that the information is not exhaustive.

the First Report of the British Royal Commission on Transport. This Commission was not satisfied with information regarding accidents that was being already compiled by the Ministry of Transport and it specially recommended that the Ministry should compile comprehensive statistics of the causes of all road accidents. It further recommended that the Minister of Transport should be empowered to order an enquiry into the cause of any accident in which a motor vehicle is involved, but such enquiry should be obligatory in the case of any accident to a public service vehicle in which the death of a passenger is involved. We would specially emphasize the latter part of this recommendation.

For lack of the information we can neither say how the number or character of these accidents compare with those in other tracts, nor can we analyse the factors responsible for the occurrence of the accidents. We had included a question in our questionnaire regarding the frequency and causes of accidents but did not obtain in reply any definite information. It may be useful, however, to indicate here the nature of the replies received. The various reasons put forward were bad roads, mechanical defects in the cars, overloading of cars, racing on roads, and the negligence and incompetence of drivers. We were told that in some cases the road surfaces were so bad that a mechanical breakdown such as the snapping of a spring unexpectedly occurred and led to accidents. Accidents of this character, it was generally admitted, were exceptional. It was further pointed out that in some cases the roads were too narrow, or the curves very sharp and the roads even in dangerous places in ghats not properly protected by an embankment etc. We have already said something above about vehicles on roads being not in a proper state of repair. This factor, especially defective breaks, plays no doubt a considerable part in accidents. The mechanical defects in the cars are specially emphasized when as often happens they are grossly overloaded. By general agreement, however, the two most important causes of accidents were indicated to be the negligence and incompetence of drivers and the competitive racing on roads. Every driver before he can get the Drivers' "B" permit has to pass a test but this does not necessarily mean that he is upto all the emergencies on the road. The mechanical knowledge of the drivers is specially highly defective. But even more than the incompetence of drivers it was

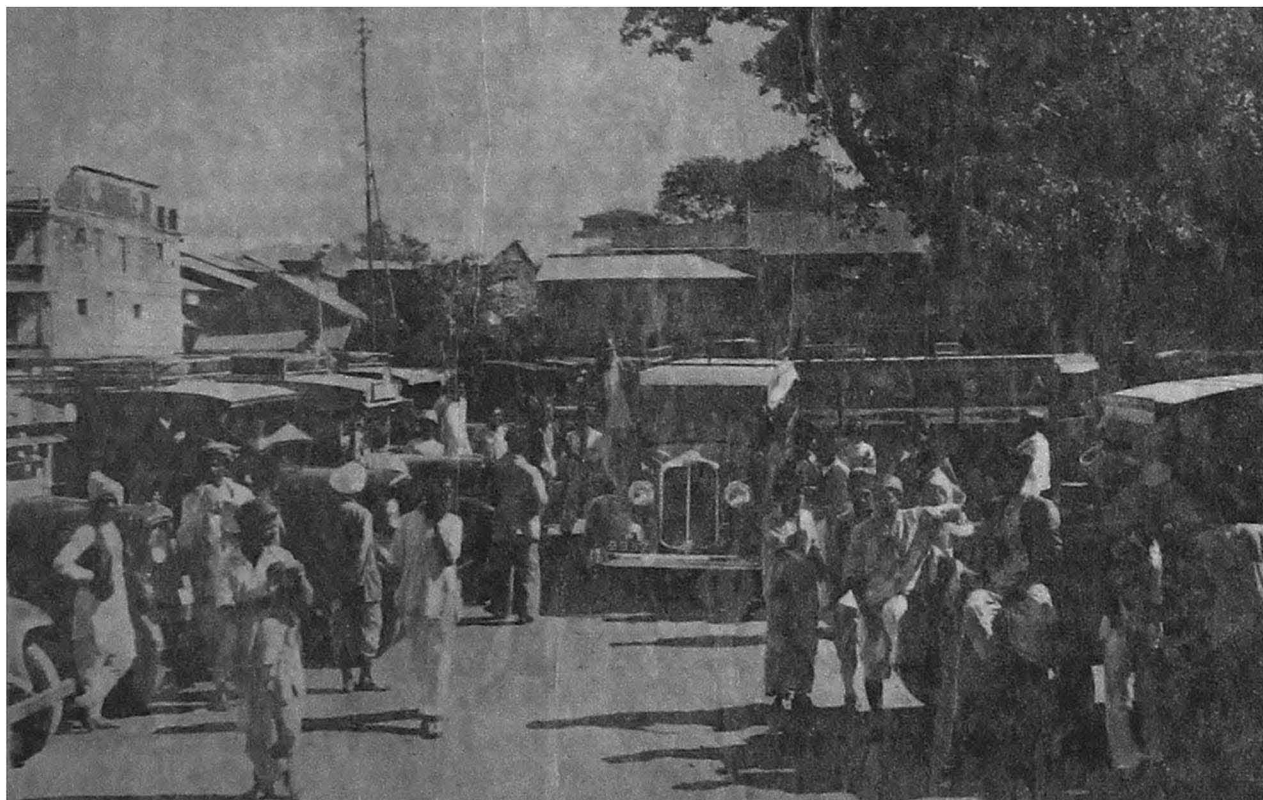
their carelessness and negligence that was stressed in the replies. Driving at dangerously high speeds, not taking the most elementary precautions, being under the influence of drink or not being fully awake due to dissipation the previous night were the types of instances given of negligence or carelessness. It is remarkable that the testimony of our replies—being entirely from the class of bus-owners, many of whom were owner-drivers—should so heavily and scathingly condemn the driver class in general for its share in the accidents happening on the roads. The newspaper reports of a large proportion of the accidents usually indicate the responsibility lying in this quarter, but this testimony of owners emphasizes this factor very considerably. In most accidents high speed plays a prominent part. The speed may be due to sheer carelessness or dare-devilry on the part of the driver; he may be wanting to make up for too long a halt at the previous stopping place. But in a large number of cases it has a competitive basis. Quite a large proportion of the passengers carried are made of persons picked up on the wayside between two stages. An early run before others means a larger share of these than otherwise. This it is that largely incites the bus behind to want get in front and the bus in front to try and prevent this happening. The natural result is at times very furious racing and the wonder is that more accidents do not actually happen as a result of these practices. When it is remembered that in a number of cases the fares of these wayside passengers are at least partially pocketed by the driver it will be realised what a strong incentive to racing is offered thereby.

The measures suggested to us to prevent such a large number of serious accidents from occurring were a stricter driving test, more careful inspection of cars and a stricter enforcement of the regulations against overloading. But more important than all these was the very common suggestion made that a speed limit for all buses should be laid down. This, of course, is not a mere matter of legislation. For, it is generally agreed that in India a regulation in this respect could not be effectively enforced if there was no other sanction than that of a prosecution when found out. It is a question of devising a mechanism to be installed on the vehicle by means of which it could be guaranteed it did not exceed a given speed. And while it is generally agreed

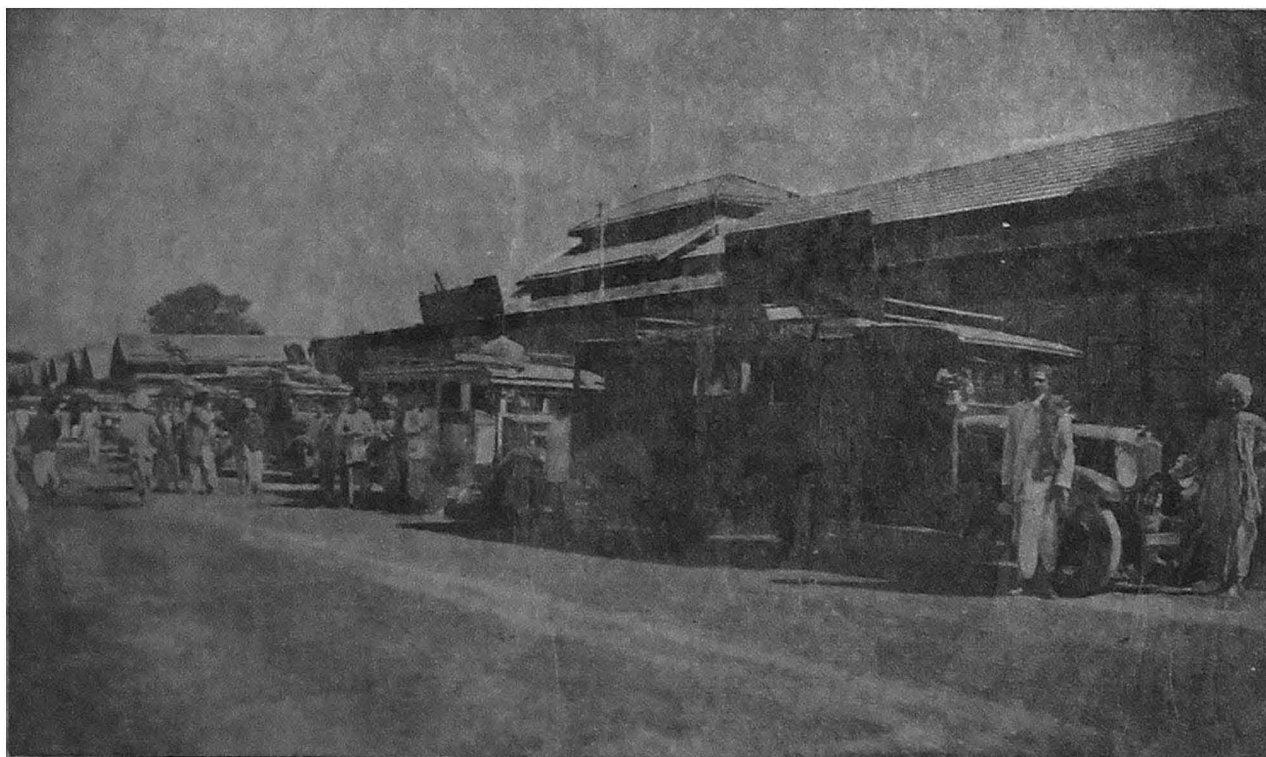
that a speed limit is highly desirable the fact that suitable "speed governors" are not yet available seems to delay the passing of legislation in this behalf. In some Indian provinces e. g. the Central Provinces "speed governors" have been installed on public motor conveyances. But it is reported that it is not very difficult to tamper with these "governors" and that in effect their installation has not been entirely successful.* Failing the devising of a successful mechanism it is, we think, desirable that at least legislative regulation of speed limit should forthwith be laid down. An automatic mechanical check on speeds would be a perfect solution of the problem of high speeds but the want of this should not delay the passing of a definitive regulation. For such a regulation would at least be a first step towards solving the problem; would in case of accidents give a definite starting point of enquiry, would enable passengers or others to complain in definite terms etc. In this connection it may be also urged that the proper functioning of the speedometer may be enforced by police regulation before a car is passed. The presence of a speedometer could enable, especially the passengers, to note dangerous speeds and enable the more public-minded of them to complain.

The most essential measure for the purpose of preventing accidents seems to be that of compulsory insurance. The proposal did not find much favour, for obvious reasons, with the bus-owners; but it is fundamentally necessary. We discuss in another connection the case for making insurance compulsory. We may merely note here that in its absence the victims of the numerous accidents seem to be utterly helpless. We have noted no cases of any claims for damages being made in law courts by those who have suffered from accidents and the private compensation if such has been given would usually be utterly inadequate. It is obvious that for want of insurance, even if a claim in law courts was made, the average driver or bus-owner could not be in a position to pay any considerable sums as damages. With compulsory insurance the check exercised by the Insurance company directly and indirectly through its limitations etc. would undoubtedly prove of the greatest use.

* It should be noted that even an imperfect speed governor has considerable influence in checking high speeds. Vide Mitchell Rinkness, C. P. report p. 27.

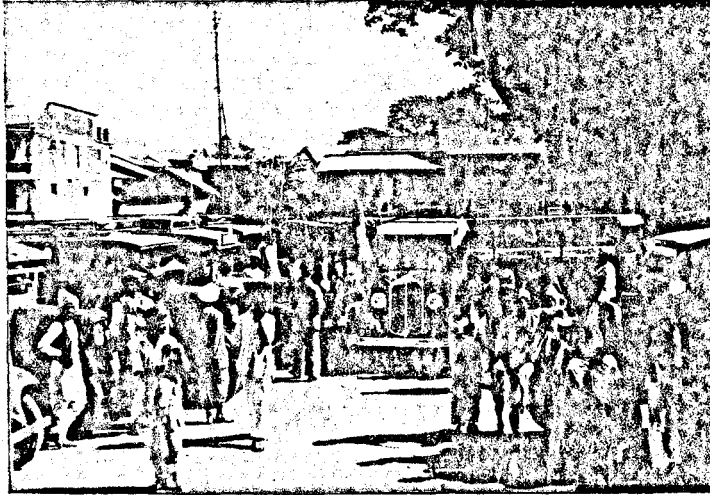


Shanwar Wada Motor-stand, Poona.

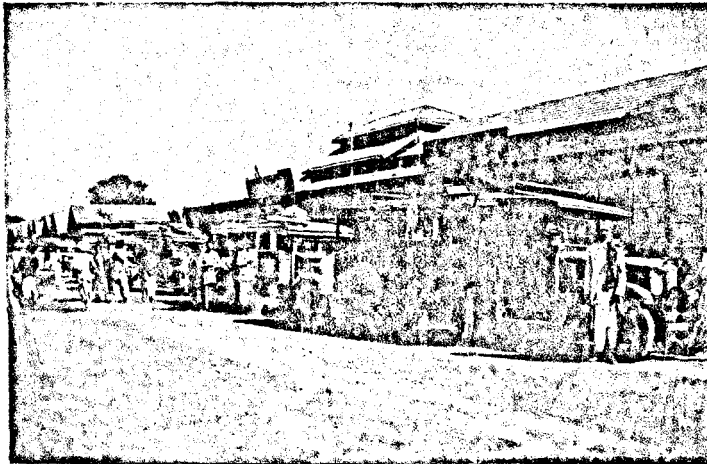


Khadak Motor-stand, Poona.

Note that there is no separate area assigned for the stand as such, this important stand being merely placed along the side of a road.

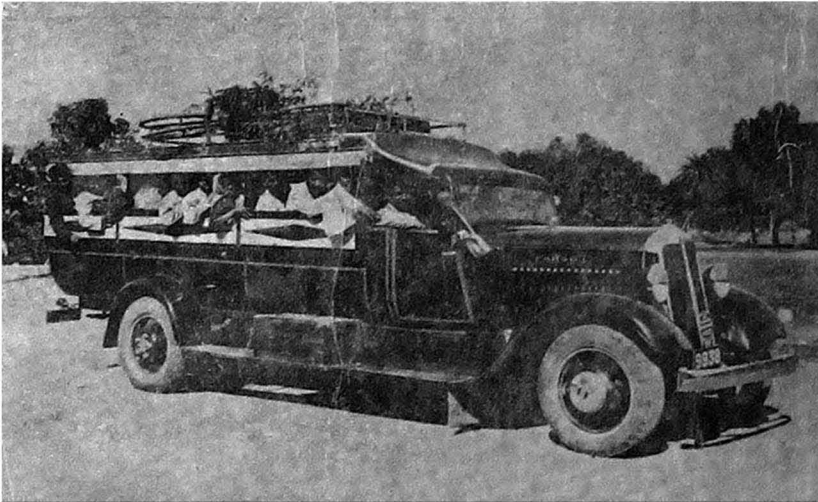


Shanwar Wada Motor-stand, Poona.



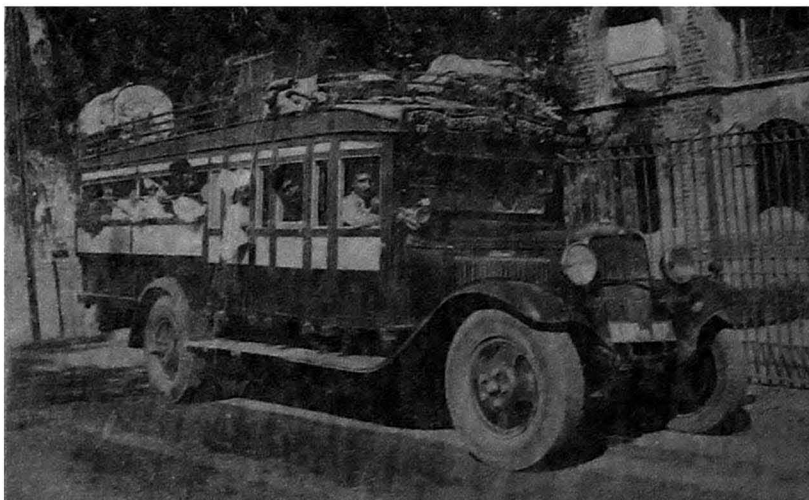
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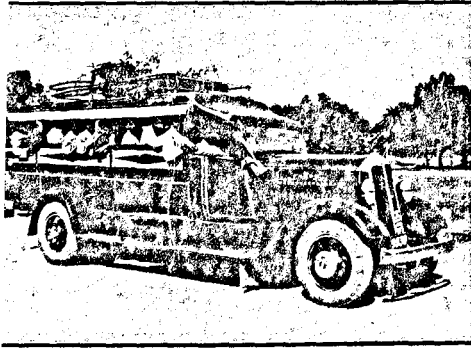


A passenger bus with seats arranged along two lengthwise benches only.

A goods lorry in the premises of the Reay Market Poona, carrying bags and baskets (mostly of vegetables), at the start of its journey.

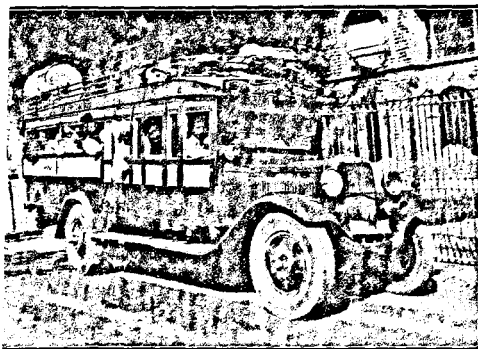
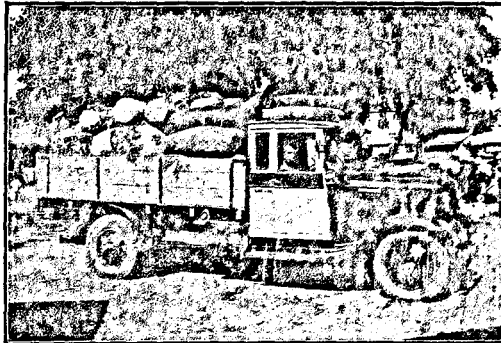


A passenger bus with seats arranged in two breadthwise compartments in front and two lengthwise benches at the rear. Note the heavy vegetable basket showing how goods traffic is carried partially by passenger buses.



A passenger bus with seats arranged along two lengthwise benches only.

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A passenger bus with seats arranged in two breadchwise compartments in front and two leangthwise benches at the rear. Note the heavy vegetable basket showing how goods traffic is carried partially by passenger buses.

(iv) *Motor Stands*.—The Mitchell-Kirkness report discusses the question of parking places in connection with the fees charged for their use in the Punjab. In our tract, however, except at two places no fees are charged for parking. Arrangements for bus stands, adequate or otherwise, are made by a large majority of the municipalities. The bus stands connote in most places merely an open space reserved for the parking of public vehicles prior to their departure on a journey outward or on their arrival from such a journey. As noted above no fee is charged for the use of this convenience, neither is its use necessarily restricted in any way. While the provision of the ground is made everywhere by the municipality, the regulation of the movement of cars to and from it is undertaken by the police. In almost all cases the use of the motor stand is optional, especially in so far as the cars belonging to the particular place are concerned. A bus need not necessarily go to the stand before starting on its journey; it may start the journey from its garage direct. Only it should not obstruct the road in front of the garage for any length of time for the purpose of collecting passengers or in waiting for them. If, further, a private stand is provided not encroaching on the municipal roads there is no objection to its use. The bus stand is thus a convenience provided by the municipality so as to prevent the development of bus traffic from causing undue congestion on its roads. It follows that everywhere there is a police prohibition of buses parking for any length of time on the roadside, in municipal areas, for the purpose of collecting or canvassing passengers. In some municipal areas the prohibition extends to buses even moving about the municipal roads for picking up or setting down passengers. This means that passengers must be set down or picked up at the municipal stand alone, or at a private stand if such is available. The latter type of regulation is, however, not general. Its enforcement in the bigger cities would perhaps mean some inconvenience to the passengers; and it could be enforced only if the municipality provided ample enough parking accommodation for all the bus traffic. This is notoriously not provided, especially in the important case of Poona.

A motor stand everywhere means just a bare parking place and nothing more. In this case the provision by the Satara Municipality forms almost the sole exception. For, here provision

is made of water-taps and of urinals etc. and the whole stand accommodation is well organised. Sheds, however, are erected at no place except at Sirur, and there is thus no protection against rain provided for. Though there are in the big cities some private stands, these also offer no conveniences. Almost the only exception to this rule observed by our investigator was the provision by the Mahad Motor Union of a "Mandap" and other facilities for passengers travelling by its early morning services. It is obvious that under the present chaotic conditions of this industry private stands providing waiting and other facilities are extremely unlikely to come into being. It is, therefore, highly desirable that the municipalities should provide adequate parking accommodation and should also offer sheds and other conveniences to passengers. It could then prevent the roaming about of the buses in the city and regulate traffic better. It may also easily recoup itself for the additional expenditure by a very small parking fee.

(v) *Agents*.—The average unit of operation in this industry is so small that it cannot afford any elaborate organization of business or any considerable overhead charges. It has already been pointed out that the large majority of buses resort to public stands and no units can afford elaborate private stands of their own. In the bigger towns a comparatively large number of units or unions have offices or places where seats can be booked and tickets purchased; but even this is not true of the majority of single bus-owners and there is usually no such facility afforded in most of the small towns. And the common practice everywhere, whether in the smaller or larger towns, is for the passenger to resort to the stand and obtain a seat in a bus going to his destination after settling the fare by the process of higgling. This bargaining with passengers and canvassing for them is at all stands done by a class of persons called "Agents". Indeed, the previous booking of seats is almost negligible and most of the volume of traffic is booked through the intermediary of "agents" at the stands. Having no regular offices and being unable to employ a fully paid person to do the business for him the owner of a bus has naturally to rely on the help of the "agents" to get passengers for him and these "agents" thus form a very important class of people in the case of passenger-traffic. The agents have been in existence for a number of years, but the system under which they work has

recently been regularised. It has since 1932 been determined by the district police authorities that an agent must be licensed before he can operate at a public motor-stand. Any one who desires to work as an agent has now to apply to the district police authorities and his application must be endorsed by two or more bus-owners. After due enquiries regarding the standing etc., of the applicant have been made by the police authorities he is granted a license, his name is registered as an agent and he obtains a badge which he must wear while at work. A registration fee of Rs. 2 is charged, while the annual renewal fee is As. 8. Those endorsing an agent's application declare that the agent is to work for them. This does not mean that any agent works exclusively for those who have endorsed his application. And usually bus-owners endorse applications of many agents. In effect the endorsement has no other significance than showing that the applicant desires to work and has the capacity of working as a bona fide agent. It may be that in the early stages of his business an agent may work in a large measure for those who have supported his application but relations of this sort are not very lasting. The endorsements are required only at the time of the original application and the annual renewal is almost automatic. The bus-owners have thus no hold over an agent once he has been registered as such.

As the agent is the main channel through whom passengers are canvassed, put into particular buses and their fares fixed, he holds a key position in the business. The agents operate almost entirely on the motor stand and their source of earnings is the percentage deduction from the fares which they get from the bus-owners. The normal rate of this is one anna in the rupee. Where the bus-owners are disorganised and competition rages fiercely amongst them, the agents' position is particularly strong and they are found to be able to extort larger commissions, depress fares in particular instances and in a variety of ways keep the bus-owners in a position of a considerable dependence on them.* In a number of the smaller towns agents in such cases form associations of their own, work in turns and pool earnings. Individual bus-owners are helpless in dealing

* On the other hand, owners complained to us that owing at times to keen competition amongst the agents the fares were needlessly depressed.

with strong associations of this type. The only remedy they have is that of setting up a new man as an agent ; but if the hold over the traffic of the old agents is strong, they can make it very difficult for a new man to obtain a footing. Where the bus-owners are organised the agent's position tends to become weak and on routes where motor unions have been operating for a long time and the roster system is in work the agent tends either to go out or to become a paid employee of the union. It is thus found that the agents attempt in a number of cases to prevent combinations taking place amongst bus-owners.

In spite of the efforts made by associations of agents the number of licensed agents at most places tends to grow. The following table shows the number of licensed agents at some important places in the Poona District during the year 1932. The table shows the number of agents at places where there are five or more of them. The total number in the District is 341 and they are distributed over 63 places. It is obvious that an agent may come into existence at any place where enough traffic to support one agent originates. Their distribution is therefore much more scattered than the localisation of buses.

TABLE 18.
Number of bus Agents at a few centres in the Poona District.
1932-33.

Place	No. of bus Agents	Place	No. of bus Agents
Poona	139	Talegaon (Dabhade)	10
Khed	15	Alandi	6
Saswad	14	Nira	6
Baramati	12	Wala	6
Indapur	12	Sirur	5
Ghodasadi	11	Narayangaon	5
Junnar	11		

There is no limit laid down by the District authorities to the growth of these numbers. We could not obtain any information regarding the earnings of agents. We were told that in some cases the earnings of old established agents amounted to three or four rupees a day, but that their earnings tended to decline. Where there are close-knit associations an agent works only for a part of a day, but elsewhere he has to put in a long day's work.

(vi) *Goods Traffic*—We have pointed out above that goods traffic is in this region comparatively unimportant. There is a surprisingly small number of trucks exclusively devoted to goods traffic. It was not possible to ascertain definitely the number of these, but from the enquiries conducted by our investigator it could be said that the number of trucks plying for hire and carrying goods exclusively was in no district more than ten during the year 1932-33. This state of affairs can be explained in a variety of ways. There is in some districts, because of the condition of roads, a prohibition against carrying goods by bus. The prohibition obtains in Ratnagiri, Kolaba and Satara districts but is not everywhere absolute. Under special conditions certain main routes may be allowed to be used for goods traffic. Thus the Ratnagiri—Kolhapur and Karad—Chiplun roads are used for this traffic during the eight fair weather months of the year. Here, we understand special exemptions from the police authorities are necessary. In the same way the Dharamtar-Bombay and Khopoli-Bombay roads are always open to goods traffic. Barring such exceptions, however, there obtains general prohibition of goods traffic by bus in these three districts. In the other three districts the development of such traffic has also been distinctly limited.

In our search for statistical data regarding the movements of goods by motor trucks we approached the various municipalities in the tract. We found that only in the case of three of these was it possible from the octroi records to determine whether a certain consignment had arrived by motor or otherwise. These municipalities were Barsi, Sirur, and Poona. The Barsi and Sirur authorities were kind enough to supply us with detailed tables prepared from their records showing for the year 1932-33 and 1932 respectively the monthly imports into the municipalities by groups of commodities. In Poona the records were, however, not comprehensive. The indication of imports coming in through motor cars was not available for all octroi stations nor for all months of the year. Hence we selected three months of the year 1932 for which this information was available for all the more important octroi stations and got it compiled and tabulated. For purposes of comparison we also compiled figures of the total imports in the various groups of all commodities imported into Poona through those stations during those months.

TABLE 19.
Imports by motor into Poona 1932.

Month.	Grain.	Vegetables	Fruits.	Betel leaves.	Fowls. Poultry etc.	Groceries.	Cloth.	Furniture.	Miscellaneous.	Total.
	M. S.	M. S.	M. S.	M. S.	M. S.	M. S.	M. S.	M. S.	M. S.	M. S.
April 1932.										
Imports by motor	4,810 18	3,543 17½	2,686 19	74 10	72 37	669 2	45 38	221 27	2,842 2	14,966 11
Total imports by road.	53,268 20	60,494—12								3,27,701 18
August 1932.										
Imports by motor	6,077 20	18,010 3	3,545 2½	1,268 ...	166 39	2,268 26	15 ...	274 5	657 38½	32,283 14
Total imports by road.	17,097 30	1,99,780—13								2,29,496 39
December 1932.										
Imports by motor	5,589 ...	8,031 33	4,019 20	931 13	194 8	3,098 3	152 10	187 22	1,570 7	23,773 37
Total imports by road.	35,060 ...	76,363—18								3,30,209 34

M—Maunds, S—Seers

TABLE 20.
Imports by motor into Barsi 1932-33.

	Grain.		Vegetables		Fruits.		Skins.		Cloth.		Furniture.		Metalware.		Miscellaneous.		Total.	
	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.
Imports by motor	90	...	157	10	118	10	130	15	1,618	30	54	10	84	30	303	15	2,555	20

Imports by motor into Sirur 1932.

	Grain.		Vegetables & Fruits.		Groceries.		Cloth.		Miscellaneous.	
	Bags.	Head Loads.	Bags.	Head Loads.	Bags.	Head loads.	Bales.		Cart-loads	Head-loads.
Imports by motor	412	88	70	155	722	293	407		25	287

			Cloth		Grain	
			Bs.		Maunds.	
Total imports of Cloth and Grain during 1932-33 by road and rail into.	Poona	...	4,65,913		1,307,804	
	Barsi	...	11,87,813		601,230	
	Sirur	...	7,140		71,160	

M—Maunds, S—Seers.

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It should be noted that the octroi records are not always carefully maintained and the nature of the imports etc. is not always clearly or correctly shown in the octroi receipt. Hence there is perhaps a large margin of error in these figures. We believe, however, that they are helpful in broadly indicating the nature of the traffic.

The figures for total imports into Poona City represent totals for all the octroi stations for which the motor figures were available. They do not include figures for those octroi stations through which the imports by rail come in. The totals represent, therefore, entirely road imports and it may be presumed that if the motor imports are deducted from the totals we arrive at the figure for bullock cart imports. The Poona table, therefore, helps to show the proportionate distribution of the goods traffic between these two transport agencies. We have not been able to get figures for total imports for all commodity groups in the above table; but only for the combined group of fruit and vegetables and for the group grain, pulses, etc. It will be observed that the proportion of the total imports taken by motor transport differs from month to month from less than 5 p. c. to nearly 14 p. c. For lack of information it could not be said whether the variations are seasonal or due to any other factors.* At any rate it is obvious that in the traffic by road the motor truck does not play an altogether insignificant part. Looking at individual items it is clear that quantitatively the transport of fruit and vegetables—especially the latter—is the most important. But then these form also the most important group in the total road imports into Poona. Proportionately the imports by motor of vegetables and fruit are in none of the three months more than 16 p. c. though never less than 10 p. c. of the total. In the group of grains and pulses, on the other hand the imports by motor have a surprisingly large proportion i. e. more than 35 p. c. to their share in the month of August. This proportion is, however, lower than 10 p. c. in the month in which the largest imports in this group took place i. e. April. The only other group that is important in truck imports is

* It should, however, be remarked that the variations are chiefly due to variations in imports of vegetables and this would indicate that it is really the seasonal factor that is important. Further in April the bullocks are not engaged in agricultural operations and the roads are at their best for bullock cart traffic, while in August the conditions in this regard are most adverse.

the group shown in the octroi classifications as "kirana" i. e. groceries etc. This is a large group consisting of dry fruit, sugar, gur, butter, ghee, oilman's stores and provisions and other kindred commodities. We could not obtain complete correct figures regarding the total imports by road of this class of goods through these octroi stations. But it seems that motor transport plays quite an important part in this traffic. It will be seen that during the month of the highest imports by motor, the daily average of imports of all commodities together comes to about 1000 maunds, which is equal to the capacity of approximately 25 fully loaded $1\frac{1}{2}$ ton trucks. Of course, in practice the number of fully loaded exclusively goods-carrying buses is very much smaller than 25 and even in the busiest season the freightage is divided over a large number of buses which combine this business with the carriage of passengers. This is true not only of the transport of groceries, fruit and vegetables but also of grains, a few bags of which are carried in the season by a large number of passenger buses.

While the Poona figures refer to only three isolated months the Barsi* and the Sirur† figures refer to whole years. At Barsi the goods imports by motor are seen to be entirely insignificant. Fruit and vegetables play no important part here. This is perhaps due to the fact that Barsi is neither an important consuming centre of these commodities nor is it the centre of an important producing area. Almost the entire imports by motor truck come through the Sholapur road. Amongst these imports cloth seems most important but bears a very small share of the total imports into Barsi which are chiefly by rail. The same holds true of all other groups of commodities. No figures were available to us of the imports by roads alone; the figures collected from the municipal reports include imports by rail as well. Hence no indication regarding the comparative importance of bullock-cart and motor transport can be given in this case.

The Sirur statistics are of peculiar interest because the place is away from any railroad and thus all its imports must come by the road. In these imports the most important class is "kirana", groceries etc. On a rough calculation it seems that nearly 15 p. c. of

* Population 25,764.

† Population 3,074.

the imports falling in this class come by motor truck.* The fruit and vegetable traffic, the place being almost a village, is not important. In the class of grains and pulses it is seen that the share taken by imports by motor is very small being only about 1.5 p. c. of the total imports. The reason for the difference in proportion between road grain imports by motor in Poona and Sirur seems to be this. The road imports into Poona of grain are only short distance imports, the bulk of the grain imports coming into the place by rail; so that the Poona road imports by motor are made up of small supplies of individuals. In Sirur all the supplies come in by road and hence the figures include the big traders' imports as well. Evidently this class does not make use of motor trucks for conveyance of commodities like grain.

The statistical information presented above is no doubt scanty but it serves to bring out the main features of the present day goods truck traffic. These may now be amplified by means of information obtained from the questionnaires and the observations of our investigator. In the main it is traffic carried on by passenger buses in small lots, consisting mainly of fruit, vegetables, egg or poultry baskets, potato and grain bags from the rural districts and commodities like dry fruit, glassware, stationery, toys, soap, some types of hardware etc. from centres like Bombay and Poona. As everywhere else, it is the costlier and the more perishable commodities that specially seek transport by motor vehicles. In competition with the bullock-cart the chief advantage that the truck possesses is that of speed. This advantage is decisive in the case of perishable commodities like fruit. In long journeys fruit transport by truck has begun now to play a very important part. Indeed it has brought into being some types of exports such as that of strawberries from Mahabaleshwar to Bombay which were impossible in the pre-motor era. For distances which the bullock-cart can cover in a night's time this advantage is, however, not decisive and it then turns into a question of convenience and cost. The costs for this type of commodities are at present not widely different and for small lots within the capacity of passenger buses the car offers a distinct advantage to those situated on the motor roads.

* It may be noted that while the statistics furnished to us of motor traffic by the Sirur Municipality relate to the year 1932, the figures given in the reports on municipalities are for fiscal years. Hence an exact calculation of percentages is not possible.

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Or it might be thus put, that under the present circumstances the carriage of goods in small lots being a by-product of the main passenger carrying activity of the buses, the bus-owners can offer a speedier service at a rate that is competitive with the bullock carts. Within a limited area, for certain types of commodities and for carriage of goods upto a limited amount they have established a position in goods traffic for themselves. *

It is generally recognised that the truck can successfully compete with the railways only within a limited range. Per mile costs of truck operation do not substantially decrease with increasing mileage and after a certain limit there are definite disadvantages involved in operating individual trucks. It is otherwise with railways. Terminal charges play an important part in short railway hauls and the charges per mile distinctly diminish as the mileage increases. But even in short hauls there are limits to the classes of goods that trucks can carry. The cost in this area of truck haulage of goods can at a minimum be put at 1 pie per mile per maund. In a large number of classes of goods the railway rates are very much lower than this figure. It thus happens that even in competition with railways the truck occupies a favourable position in chiefly the types of goods mentioned in the last paragraph. The position along the Konkan coast, where the competition in bulky goods carriage is with sea-going country craft, is even less favourable to the truck. For, the rates charged by these are much lower generally than the railway rates. One respect in which the trucks labour under a special disadvantage in this tract is the difficulty involved in making night journeys through the hill passes of the ghats. A journey from any of the Deccan Districts to Bombay or to Konkan involves a journey through the hill passes of the ghats. The same is true of any lengthy journey along some of the Deccan roads themselves such as the Poona—Kolhapur. Through most of the more difficult ghats journeys by commercial motor vehicles between sunset and sunrise are prohibited. The trucks thus lose one important advantage; for, it has been pointed out that the limit of effective trucking is the distance to be covered in an overnight trip. †

* For a detailed discussion of the competition between bullock and motor transport in the case of fruit see publication No. 3 of this Institute: Gadgil and Gadgil, Marketing of Fruit in Poona (1933) pp. 122-132.

† American Transportation Problems, p. 665 Brookings Institution, Washington, D. C. 1933. See also Mitchell and Kirkness, Punjab report p. 14.

And it was found by an investigation that in the movement of goods by motor truck from New-York City to Philadelphia the factor of overnight delivery i. e. movement between the shipper's plant and the consignee's store-door, between the plant closing time and the store-door opening time the next morning, was of paramount importance.* In this tract overnight delivery may not have the same importance in all classes of goods but it certainly counts for a great deal in such traffic as that of fruits, vegetables, poultry and eggs, etc. The difficulties in the way of overnight journeys thus act as an obstruction in the way of the development of motor transportation of goods.

This discussion of the topic may be brought together by considering the reasons why no regular goods services have come into being. When we questioned the bus-owners regarding this they invariably answered that there was not enough traffic available. The large bulk of the goods traffic in this tract consists of agricultural produce moving to markets, big and small. This traffic is mostly in non-perishable bulky goods and it is seasonal in character. It is also largely one-way i. e. in the traffic season the flow of goods from the countryside to the markets, is much greater in bulk than the traffic in the opposite direction. The movement of agricultural produce takes place on behalf of the agriculturist or of the trader. In this traffic the bullock cart holds a dominant position as far as the road is concerned. The hauls along roads are mostly short distance hauls to a central market or to a railway station. But in the case of non-perishables the position of the bullock-cart is not unfavourable even for comparatively long hauls. The bullock-cart has this supreme advantage that it can go anywhere, use any kind of tracks and thus can be available at all points at which traffic originates. The motor on the other hand can move along a limited number of roads and thus for all traffic originating at places away from the motorable road there has to be a preliminary transportation by bullock-cart to a point on a motorable road. Secondly, and this is the most important factor, the bullock-cart is an integral part of the agricultural economy of the tract and its use when bullocks are not wanted for agricultural operations is most obviously

* B. W. Talbot:—Shipping Situation between New York City and Philadelphia (1931).

economical. Thus when the agriculturist moves his own crops he naturally does it in the bullock cart and further the agriculturist's bullock-carts are available to the non-agriculturist or to other agriculturists during the off-season of agriculture at rates at which the buses cannot compete. Even when, however, the truck rates are competitive, the trader tends to favour the bullock-cart. The explanation of this phenomenon commonly given to us was that the trader in the countryside was in most cases a money-lender also and in employing the bullock-cart he was mostly taking advantage of the services of his debtors. He thus either recovered a part of his loan or at least was under the necessity of making no immediate cash payment. In effect the costs of bullock transport to a trader so situated were really less than they appeared. This may be the explanation of the complaint of bus-owners that country traders never offered them payment at rates similar to those that they nominally paid to the owners of bullock-carts. The difficulties experienced by the buses in getting hold of this seasonal movement of agricultural produce seem to be the most important factor in preventing regular goods truck services from coming into being. The bullock-carts which move agricultural produce to market centres have a fully paid load only one way and they offer a cheap means of transporting, from the market centre into the country-side, various commodities like cloth, groceries, etc. Thereby they cut into part of another field of truck transportation. While the short haulage of agricultural produce remains a field for the bullock cart, the truck cannot compete with the railway in long distance traffic of this type. The railway rates for this class are so low that the truck can never hope above a certain distance to enter the competitive market. The paucity of all the year goods traffic available to the buses and the one way nature of a large part of their seasonal traffic are important factors in preventing regular truck services coming into being in this tract.

Trucks regularly engaged in the carriage of goods are mostly to be found along certain restricted routes. For example, there are services connecting places above the ghats like, Poona, Raburi, Sangamner and Nasik with Bombay. The nature of the traffic in all these cases is similar. On the trip to Bombay the trucks carry chiefly vegetables, fruit, eggs, etc. and on the return journey, cloth and yarn, furniture, toys, bangles and miscellaneous glassware, dry fruit, stationery, hardware, etc. The

goods brought in from Bombay are for local shopkeepers; the vegetables and fruit are normally taken to Bombay on consignment and delivered at the market direct to commission salesmen. But we also found that some of the truck-owners did this part of business on their own i.e. bought the vegetables and fruit themselves and transported them to Bombay for delivery to commission salesmen acting on their behalf. This combination of two activities was perhaps necessitated by the fact that there was not enough regular supply of goods consigned by others. The rates charged varied according to our information between ~~1 to 15 pias~~ per maund per mile. Better rates were usually obtained for the trip to Bombay than for the return trip. There is always some difficulty in obtaining a sufficient load from Bombay and the truck-owner who usually operates from the up-country place has to depend on some agent in Bombay for securing this to him. The trucks are also usually overloaded and but for this overloading, the business would not be economical at all. While for the 1½ ton truck the usual limit is between 35 to 40 maunds of goods the trucks normally carry 50 maunds or somewhat beyond even this. It should be noted that the volume of even this truck traffic is extremely limited. There are not, for example, more than five trucks which regularly operate over all the fairweather season between Poona and Bombay.

The type of service described above competes directly with the railway. The only other important type of service competing with railways noticed by us was the carriage of fruit and vegetables especially from the talukas East and South of Poona to Poona. From the important fruit growing areas of Purandhar taluka a very large portion of the traffic takes place through buses.* But this traffic is carried on chiefly by buses which are in the main employed in the passenger business.

Considerable goods traffic through trucks takes place from the Khed and Junnar talukas of the Poona district to Poona or Talegaon. This is not competitive with the railways but complementary to it. Here also the buses maintained by the G. I. P. auxiliary service are employed mostly in the carriage of parcels traffic and comparatively only a small portion of the potato, groundnut, *Hirda* crop moves through them. The consignment of these commodities to Poona also takes place in the main

* Vide Gadgil and Gadgil op. cit.

through bullock-carts, though, as noticed above, isolated small units of bags are sent in passenger buses. Thus we were told that for 9 months of the year potatoes move from Khed to Poona at the rate, on an average of one truckful i. e. about 20-25 bags a day.* For lack of definite information it is impossible to say how far this cuts into the total traffic once carried by bullock-carts. Of a nature and extent similar to this is the traffic in goods from Kolhapur to Ratnagiri and Sangameshwar and from Karad to Chiplun. This traffic is necessarily restricted to the fair weather season. All these places in the Konkan lie at the mouths of creeks up which sea going country craft comes and produce from the up-ghat districts is carried down to Konkan and rice carried up the ghats. The whole of this traffic has to work under a number of police regulations and limitations and its development is, therefore, uncertain.

Goods truck services having come into existence only to a very limited extent there has been no special adaptation of cars and bodies to these services. Thus the usual size of bus employed is the 1½ ton and this comparatively small size may be one of the reasons why it is not possible to work the services more economically. The bodies are also not specially adapted to goods carriage, as the alternative of passenger carriage is almost everywhere present before the eyes of the owner. There has been no specialisation of goods' agents. Thus while the development of passenger traffic has brought into existence the specialised agent, the canvassing of goods has usually to be done by the bus-owner himself.†

To summarize, over a large area in this tract the development of carriage of goods by buses is restricted by police regulation such as the total prohibition of carriage of goods, or the restrictions on the use of heavy commercial vehicles and the closing of the ghat passages at night time. As against the bullock-carts the bus cannot compete in the bulk of the seasonal traffic in agricultural produce because of the peculiar position that the bullock-cart holds in the agricultural economy of the tract, because of the restricted area which motorable roads serve and because of the bullock-cart's

* This is entirely a one way traffic and no exclusively goods trucks are engaged in it.

† Cf. Mitchell and Kirkness, Punjab Report p. 13 for goods agencies in Amritsar.

cheap rates. The truck has, however, made considerable headway in the transport of perishable products, especially above the 15-20 mile limit and in traffic in all sorts of goods offered in lots that could be conveniently carried in passenger buses. With railway the truck competes in the transport of perishables over short as well as long distances (distances from 100 to 150 miles) and in the more highly rated classes of goods. However, the non-existence of regular traffic both ways, as well as restrictive regulations have prevented organised services from coming into existence and the lack of organisation is itself an important reason for the delay in development.

(vii) *Competition with other forms of transport*:—We were unable to collect any fresh or valuable data regarding the competition of motor transport with railways. For, the railway authorities refused to supply us with any information whatever regarding this aspect of the problem. It has, however, been discussed exhaustively by Messrs. Mitchell and Kirkness in their report. In the Bombay report Messrs. Mitchell and Kirkness give estimates prepared by the G. I. P. Rly. authorities regarding the losses suffered by them on account of the competition of motor transport. It is said that the estimates of the number of passengers lost to the railway "are based on periodical checks undertaken from time to time". It is difficult to understand the nature of checks that the railway authorities could have undertaken that enabled them to arrive at estimates of such character. Could these checks have been in the nature of traffic counts? And if the checks were really of a valuable nature, it seems a pity that the railway authority (in this case really a state department) should bury in its confidential files information of such vital interest to the public. It cannot be imagined what damage railway interests would suffer by the publication of the figures of the intensity of traffic on various road routes.

It has been pointed out by Messrs. Mitchell and Kirkness that motor transport competes with the railways only on routes where the roads either run parallel to railways or, in a journey between two cities, short-circuit them. In countries like the U. S. A. and Great Britain the fall in the passenger earnings of railways has been attributed mainly to the increase in the number of private cars. It is impossible to say to what extent this factor is important in India. It is obvious, however, that its importance

is very much less than in the richer countries of the West. An overwhelmingly large proportion of Indian railway passenger earnings consists of the income from third class passenger fares and these can hardly be affected by a growth in the numbers of private cars. The fall in third class passenger earnings may, when due to motor competition, be safely attributed to the passenger bus. A glance at the Road Map will show that in the area surveyed there are roads running either parallel to railways or short-circuiting them for almost the entire railway mileage. Even so the estimates put forward by the G. I. P. Rly. show that the fall in passenger earnings of railways has not been considerable.*

Some of the reasons for this are the same as those pointed out above while considering the goods traffic. The state of affairs may also be largely due to the irregularity, inconveniences, discomforts and dangers attendant at present on travel by the passenger bus. Little is known in India about such matters as the average distance travelled by a passenger. Broadly, however, the facts in this respect would approximate to conditions in U. S. A. rather than to those in a country like England and hence railways would have less cause to fear from the development of the passenger bus. For the shorter run the advantage both in respect of the time taken and the cost is with the bus. The longer the distance the greater is the pull that the railway has.† There is, however, reason to believe that within these limits the competition has not yet made itself fully felt on account of the unorganised and primitive character of the bus industry. It is thus likely that with an improvement in the organisation of the industry the railways will feel the competition to a greater extent than at present.

We have already indicated from information that we were able to collect the extent to which motor transport competes with the railway in the carriage of goods. The loss inflicted on the railways by competition in this sphere is according to Messrs. Mitchell and Kirkness much less than the loss incurred in passenger earnings, though in this case also it is obvious that there will be still further extension of the field of competition.

* M. & K. Report Bombay, pp. 13-14. The estimate of loss for the entire G. I. P. Rly. system was 6 p. c. of total passenger earnings.

† The competitive distance would be smaller in the case of a broad gauge and conveniently aligned than in a metre or narrow gauge or badly aligned railway.

Though the inroads made by motor competition in railway income may not be very large, the railways have already begun to take vigorous steps to combat this new entrant into their field. The means adopted have been various. In the first instance greater attention has been paid in arrangements and timings to the convenience of customers. The advent of the motor car has in this way conferred a really great boon on railway users in India; for, in this country notoriously and to a much larger degree than anywhere else railway authorities whether in accommodation or rate fixation have paid little attention to the complaints of especially the poorer customers. The situation has considerably changed for the better in recent years. There has been generally a better looking after the passengers. More specially as Messrs. Mitchell and Kirkness point out, cheaper tickets, running more trains and speeding up trains have been the devices adopted. In some other parts of India railway authorities have specially lowered their passenger fares as between two points where motor competition was keenly felt. Only one such case was noticed in the area surveyed by us.* There is to be noticed an analogous instance in goods traffic also. This was a special wagon rate offered as between Rahuri and Bombay when direct motor services began to divert a considerable portion of the orange traffic from the railways. The running of more and faster trains between Lonavala and Poona may be cited as an instance of the other type of measures. In this tract the most serious effort made by a railway authority to combat the effects of motor competition has been the agreement entered into by the G. I. P. Ry. with one Motor Bus Service on the Talegaon-Junnar route. The aim of this was to stop the loss of the Talegaon-Bombay traffic originating on the Talegaon-Junnar route to the railway. To the north of Talegaon there is no railway line and hence all traffic originating in the Khed and Junnar Talukas of the Poona district and moving towards Bombay must travel at least upto Talegaon by road. But so long as the railway had not entered into an agreement with the motor service there was a marked tendency for a part of this traffic—whether goods or passenger—to move all the way by road to Bombay. It was to prevent this loss of the Talegaon-Bombay haulage that the railway took the step of joining hands with a motor service.

* The G. I. P. Ry. in conjunction with the Barai Light Ry. issues tickets between Sholapur—Pandharpur and Sholapur—Kurduwadi at reduced fares.

On account of the strict orders of the railway authorities the owners of this service were unable to supply us with any statistical or other information. We can, therefore, here set down only the generally known facts regarding the working and effects of this agreement. The motor service plies along the Junnar-Talegaon route and at all important places along the road arrangements are made to book goods and passenger traffic through, over the railway line and of course similar bookings are made on the railway stations also. A through rate or fare is given and it is divided into fixed shares of the railway and the bus. The traffic that is booked through must travel one way after Talegaon by railway and the other way by the buses of the auxiliary service. The railway reserves special accommodation on some of its trains for passengers joining at Talegaon. The auxiliary motor service provides vehicles at Talegaon at the time of the arrival of each train and has to time its runnings to Talegaon so as to fit in with the departure of trains from that station. The railway maintains at Talegaon an office to supervise the working of the arrangements with the auxiliary service and has booking offices at Junnar, Narayangaon, Manchar and Khed. It is supposed that the arrangement which has been in operation for nearly 3 years has profited the railway considerably. It has certainly given the auxiliary service such prestige and pull that a great many of the bus-owners running along this route formerly have had to change their route. The auxiliary service has now almost a monopoly of the through traffic to Talegaon. The through traffic all the way by motor from this tract to Bombay is now almost non-existent. The auxiliary service owned in 1932-33 a fleet of 22 cars of 1½ ton unladen weight for the purposes of carrying on the goods and passenger traffic. All these cars are not on the road the same day.

It is not possible for us to say much in addition to what has been written above regarding the competition of the motor with the bullock cart. The details regarding this are not really known at present. The motor bus has entirely driven the horse-driven vehicle from inter-urban traffic,* but very little commercial passenger traffic of this nature was carried by the bullock-carts before the advent of the motor car. The sphere of competition between these two means of transport is, therefore, entirely the transportation

* The horse-vehicle continues to compete vigorously with the bus and the taxi in the cities and towns.

of goods. We have qualitatively indicated the extent to which the bullock-cart has lost ground and the areas in which it holds its own. But little can be said quantitatively. Further while it is clear that the motor bus will continue to make inroads in the province of the bullock-cart the process of displacement will, as the above discussion will prove, be necessarily slow. Already, of course, there are complaints that the peasant economy has been badly upset because of the shrinkage of earnings from bullock-cart traffic. This shrinkage is two-fold. Formerly at the end of the agricultural season a great many agriculturists from these districts plied their carts for hire in big cities, especially in Bombay. This source of the agriculturists' income has no doubt shrunk very considerably on account of the advent of the motor bus.* Then there is the competition on the country roads. The fall in income due to the competition in the latter sphere is not perhaps as large as in the former case. But here again we are in the region of mere guess-work. There are no ways in which the bullock-cart owners can organise to meet the competition of the buses, neither can any special legislative or other steps be recommended to protect their interests. The general environment, however, favours the bullock cart and its struggle with the bus is bound to be prolonged.

(viii) *Postal mails*:—One type of traffic that remains to be considered is the carriage of postal mails. The carriage of postal mails is being increasingly done in tracts away from the railway through the agency of bus services. From information kindly supplied to us by Divisional Superintendents of Post Offices it appears that in this tract postal mails are carried by bus services over nearly 1700 miles of roads. For the carriage of these mails a monthly subsidy is given to the motor service. Tenders are invited before the contract is given and the contract is periodically renewed on fresh terms. The main terms of the contract are as follows. The contractor has during the continuance of the contract to carry the mails in vehicles of good and reliable manufacture, safely, in locked receptacles. He is bound to supply additional vehicles if the bulk of the mails on a particular day require them. He is required to run the vehicles carrying the mails according to the time table annexed to the agreement. The contractor may carry passengers only if accommodation for them is

* See note at the end of this chapter.

available and no interference is caused to the mail service. The Postal Department reserves to itself the right of approving the quality of vehicles, asking the contractor to keep a certain equipment of spare parts etc., of rejecting the appointment of drivers found unsatisfactory etc.. Failure to maintain efficient service makes the contractor liable to fines.

In no case has a service come into being to carry postal mails. Passenger services have first been started and then postal contracts given to them. The number of these contracts is annually on the increase. The carriage of postal mails not only lends dignity to a service but it also, by creating a fixed time-schedule, gives it a more regular supply of passengers. The monthly subsidy was at one time a fairly substantial source of income but of recent years increasing competition has brought down the rates low—very low in some cases. The total number of the postal services in the tract are 64. They vary in distances from two miles to 92. Their classification according to distances is given below. Below 5 miles 4, 5 to 20 miles 19, 20 to 40 miles 16, above 40 miles 16. The total monthly cost to the Postal authorities is approximately Rs. 6680. We give below a table showing how in one division the contract subsidy has been reduced at the latest renewal of the contract.

TABLE 21.

Changes in subsidy rates for carrying postal mails in one Postal Division.

Route mileage	Previous contract rate	New contract rate
14	45	9
12	35	10
23	80	70
25	80	40
21	75	30
32	130	90
42	175	120
43	150	165

NOTE:—In the absence of a set of exhaustive statistical series for the Presidency or any district, the following table compiled from different parts of the annual police reports of the City of Bombay may be found to be of some interest, as it shows over a period of more than two decades the growth of motor vehicles in the city and its effects on other types of conveyances.

TABLE 22.

Motor and other vehicles in Bombay City (1910-1933).

	1910	1914	1918	1922	1926	1929	1933
Total number of motor vehicles. ...	1,015	2,123	3,314	3,338	11,300	12,200	11,300
Total number of lorries. ...	...	...	176	623	800	950	900
Number of cars licensed for hire (Taxi)...	48	186	259	617	901	1,208	931
Number of lorries licensed for hire. ...	...	...	...	180	198	140	128
Number of busses licensed for hire. ...	...	...	...	...	32	56	116
Private vehicles other than motor vehicles.	7,028	6,769	5,527	4,623	3,723	3,085	2,328
Public vehicles other than motor vehicles.	11,473	12,716	11,641	11,708	8,248	5,756	3,654
Victorias. ...	1,526	1,800	2,217	2,554	2,219	1,950	2,059
Labour Carts. ...	9,832	10,845	9,528	8,329	5,518	3,421	1,387

The whole table shows the marked influence of two periods of industrial fluctuations; the post-war boom of the years 1919-1922, and the world depression of the years 1929-1933. Eliminating the effect of these factors it would be seen that the increase in the number of motor vehicles has been continuous and steady. It should be noted that the term lorries as used in this context in the police reports is not the same as the "heavy motor vehicle"; its exact definition is nowhere indicated in the reports. The separate figures for lorries are not available previous to the year 1919. The lorry growth is specially marked during the years 1919-1922. It has been steady since; it is curious to notice that lorries for hire (not separately recorded before 1922) have, in spite of a general increase in the total number of lorries, declined in numbers since 1926. There is only one licensed bus service in the city, that of the B. E. S. T. and a beginning with this was made only in the year 1926. The number of private vehicles other than motor vehicles, which we suppose are mostly horse carriages but may include privately owned bullock carts, have diminished steadily throughout this period. The decline has, however, been not rapid and the horse carriage evidently continues to exist to a much larger extent than in the countries of the West. This conclusion is reinforced by the numbers of victorias that continue to ply for hire in Bombay. The number of victorias kept on increasing until the year 1922, the only effect of the presence of the taxis before this period being, one supposes, a slowing of the rate of increase. And though since 1922 there has been a fall in the number of victorias it has not yet been considerable. The slight recovery in their numbers during the latest period may be attributed to the depression which has forced many to resort to a victoria who would otherwise hire a taxi. The public vehicles other than motor vehicles consist almost entirely of victorias and labour carts i. e. carts drawn by a pair of bullocks. The other small groups included in this are hand carts and single bullock-carts. It is the bullock-carts plying for hire in Bombay City that show the most rapid movement. Till the year 1921 the development of motor transport had evidently left them largely untouched. The small decline in numbers during the war years was made good by the post-war boom and the number of labour carts reached its final peak in the year 1921 in a total of 10,753. Since then, however, the decline has been both rapid and continuous and it is obviously a question of only a few years when the lorry will completely replace the labour cart as the means of the carriage of goods within the city.

APPENDIX

TABLE 23

Some (59) motor routes, approximate number of buses running on them during each day, and the fares charged. (1932-33).

Route.	Mileage.	Number of buses running.	Fares.	Fare per Mile; Pies.
			Rs. As. P.	
Poona-Dharamtar	72	4	2-8-0	66
Poona-Paud	21	3	0-8-0	45
Poona-Bombay	120	7	2-8-0	40
Poona-Bhigwan-Indapur	84	5	1-12-0	40
Poona-Indapur-Pandharpur	141	2	2-8-0	34
Poona-Baramati via. Bhigwan	70	3	1-8-0	41
Poona-Talegaon (Dabhade)	20	7	0-7-0	42
Poona-Chinchwad	9	4	0-4-0	53
Poona-Junnar	58	20	1-2-0	37
Poona-Satara	69	60	1-2-0	31
Poona-Ahmednagar	72	25	1-9-0	41
Poona-Saswad	20	40	0-6-0	39
Indapur-Nimbgaon Baramati	31	4	1-0-0	63
Baramati-Bhigwan	18	4	0-8-0	53
Ahmednagar-Shevgaon	42	12	0-12-0	34
Ahmednagar-Nevasse	37	15	0-11-0	36
Ahmednagar-Beed	90	2	3-3-0	68
Ahmednagar-Sangamner	42	22	0-12-0	34
Sangamner-Nasik	42	13	0-13-0	37
Sangamner-Poona	83	7	2-0-0	46
Sangamner-Kopergaon	42	13	1-0-0	46
Rahuri-Belapur	13	4	0-4-0	37
Belapur-Nevasse	22	3	0-12-0	65
Satara-Satara Road	9	3	0-6-0	8
Satara-Karad	30	35	0-8-0	32
Satara-Mahableshwar	42	15	1-2-0	51
Karad-Chiplun	60	5	2-0-0	64
Karad-Poona	101	4	2-0-0	38
Koregaon-Mhaswad	50	7	1-0-0	38
Mhaswad-Dahiwadi	15	3	0-6-0	48
Mhaswad-Pandharpur	30	4	0-8-0	32
Lonand-Satara	22	4	0-8-0	44
Lonand-Shirwal	15	10	0-6-0	48

Route.	Mileage.	Number of buses running.	Fares.	Fare per Mile; Pies
			Rs. As. P.	
Sholapur-Akkalkot	24	12	0-12-0	6
Sholapur-Tuljapur	26	17	0-12-0	55
Sholapur-Barsi	42	22	1-1-0	49
Sholapur-Pandharpur	49	27	1-0-0	48
Barsi-Kurduwadi	21	4	0-6-0	34
Kurduwadi-Pandharpur	33	7	0-10-0	36
Jeur-Karmale	11	5	0-6-0	65
Karmale-Ahmednagar	60	3	2-8-0	8
Alibag-Rewas	15	16	0-12-0	96
Alibag-Dharamtar	13	10	0-12-0	11
Alibag-Revdanda	11	7	0-8-0	87
Panvel-Pen	50	12	1-4-0	48
Panvel-Khopoli	21	18	0-10-0	57
Panvel-Bombay	55	11	1-2-0	39
Panvel-Poona	70	7	2-0-0	55
Goregaon-Dharamtar	42	5	1-8-0	69
Mahad-Bombay	150	4	3-0-0	38
Mahad-Dharamtar	56	29	2-0-0	69
Ratnagiri-Chiplun	60	14	2-0-0	64
Ratnagiri-Kolhapur	82	23	2-0-0	47
Ratnagiri-Rajapur	48	15	1-8-0	6
Vengurla-Savantwadi	17	9	0-12-0	85
Malvan-Kudal	25	11	0-12-0	58
Sangli-Nipani	57	10	1-2-0	38
Miraj-Vita	35	10	0-12-0	41
Kolhapur-Belgaum	70	15	1-0-0	27

CHAPTER VI.

Earnings and Expenditure.

One of the most important objects of our enquiry was to ascertain, if possible, the economic condition of those in the industry. The question whether the roads are at present overcrowded and there exists an enormous amount of wasteful competition and the question whether the organisation of the units in the business is economic or not could, we thought, be best tackled by way of an enquiry of this type. We, therefore, attempted to get as complete statistics regarding actuals of receipts and expenditure of bus-owners and as detailed information on all questions regarding transportation costs as possible. It must be admitted at the very outset that the results of the enquiry in the shape of data obtained are meagre. They do not enable us with any confidence to lay down definite conclusions as regards the prevailing rates of profits or losses etc. We still believe that looking to the entire absence of any such information under Indian conditions the results of our enquiry will be found to be of much interest and some use.

The attempt to get this information was made from two directions. We asked for extracts from accounts where such were kept and we included in the questionnaire questions regarding fares and other items on the receipts side and running and other costs on the expenditure side. The information obtained from the questionnaires was fairly full but was necessarily vague and general. Information from accounts, on the other hand, was obtained only from a much smaller number of persons and was fragmentary. The primary reason of this was that a remarkably small percentage of the bus-owners in this tract keep accounts that could be called full. As a fact quite a number keep no accounts at all. This is not to be wondered at, perhaps, especially in the class of one-bus-owners and owner-drivers. In a large number of cases no records of any sort could have been made available. About the only accounting record these people possess is the ticket coupon book from the counterfoils in which some idea regarding the number and price of passenger seats booked may be

obtained. Even these books are, however, not carefully preserved. Where some accounts are kept they are also of a very rudimentary character. They usually consist of figures of daily gross receipts on the one hand and details regarding the main items of running costs such as petrol, lubricating oil, tolls, wages etc. on the other. Information regarding occasional and extraordinary expenditure is not to be always found and careful reckoning of capital expenditure is extremely rare. Further, such information as the number of miles travelled by each bus, the number of passengers or goods carried, the average length of journeys and halts, which though not technically financial, is essential if any important conclusions are to be drawn from the financial statistics, was nowhere obtained. We had thus to face a situation where in a majority of cases no accounts as such were kept and the condition of such accounts as were maintained by the bus-owners was very imperfect. Added to this was the extreme unwillingness shown by the majority to give us access to the accounts that were kept. While there was evinced considerable readiness to supply us with information of a general nature, particulars especially such as were likely to throw light on the exact economic condition of the bus-owner were usually not supplied. The result is that what follows is really not in the nature of a costs study. The amount of information of the nature of extracts from actual accounts was too small to enable us to do anything on those lines. What we have attempted is to throw some light on the economic condition of bus-owners by compiling information on various items of earnings and expenditure and where possible by building up estimates of approximate accounts of some particular units. Of the 155 bus-owners regarding whom we have been able to get details as per our questionnaire almost half supplied no useful information on this topic. Of the half who supplied information which was both reliable and useful only about 60 supplied it from actual accounts kept or detailed notes or memo books the nature of which our investigator was able to ascertain. Even this information was plentiful on the side of expenditure. Out of the 155 only 35 supplied actual details of income, for however short a period.

(i) *Income*:—Thus while we could construct some estimates of the running costs per mile along particular routes the information regarding income obtained is extremely scanty. In a sense the calculations should not be difficult; because as we have pointed out

often, by far the most important business of motor transport in this tract is the carrying of passengers. The income from the transport of goods or income from any other source is unimportant. We were able to collect fairly full information regarding the fares that obtained on most routes. But the other parts of the necessary information before income estimates could be framed—the average number of passengers carried and the average miles travelled by each passenger—were completely lacking. In spite of all our efforts we were unable to collect any information regarding, for example, seasonality in traffic and in fares. Besides the generally known fact that traffic is slack in monsoon months we can say nothing definitely regarding seasonality. During the rainy season the nature of agricultural operations which call for constant attention, the generally unfavourable weather and also in the case of motor transport the bad state of roads all prevent a large movement of passenger traffic. But there may be other important variations also. Migrations of labour to and fro, the fact of a marriage season or off agricultural season must be affecting traffic movements and may be affecting it in a varying manner and degree from tract to tract. A knowledge of such movements may be important from the industry's point of view. But whatever these movements, they are at least not marked enough to have been commented upon by any of those who replied to our questionnaire; for, we had included in it a special question on seasonality. Local movements of another type are of course well known; there are important fair days in the year which lead to large additions to traffic for a very short period or the weekly market days which usually occasion acute overcrowding for the day. Apart from the question of seasonality is the question of average loading. With what complement of passengers does a bus usually commence its journey, what is the percentage that it carries throughout the journey and how many are picked up and let down en route and for what average distances, these are vital points in connection with the problem we are considering. But even the best organised services in this tract were unable to give us any information on them.

In the estimates of monthly income and expenditure that we append to this chapter we have worked out the average income per mile in each particular case. These figures vary extremely widely from 3 As. per mile to more than 6½ As. The income from carriage of goods is included in the gross

income figures that we obtained and could not be separated therefrom. There is no way of determining the allowance that has to be made for this before the net income from passenger traffic can be obtained. From the discussion that follows on passenger fares it will be observed that these fares also vary over a very wide range, the lowest being near 3 pies a mile and the highest above 10. If we calculate the entire income of a concern as derived from passenger traffic and if we calculate that the bus always carries a full complement of 16 persons and works all the time, then the average income figure per mile per passenger works out at between just below 2 pies to just above 5 pies. Our income figures do not allow for loss of income due to a bus not running. For, they have been mostly obtained from records for periods when there was full traffic and therefore this factor does not enter into these average income figures. The difference between the level of per mile fares and the level of per mile income is to be reckoned as due to the average number of passengers carried in a bus being lower than the full complement. This also does not allow for occasionally carrying a larger number than that legally allowed. There is another factor to be considered and that is the number of free seats carried by a bus. The number of these free seats is sometimes surprisingly large. A few of them may be carried because the bus-owner wants to oblige his friends or relatives but the large majority of them are carried to keep on good terms with those in authority. This abuse is general and is also very onerous to the bus-owner. We were told that in some cases those who forced the free seats on the bus-owner even received payments for them for themselves. Twenty-two persons in our questionnaires supplied us information regarding the number of free seats carried during the period of a week or a month immediately preceding the enquiry. A classification of this information shows that the number of free seats carried per bus per month was thus distributed. Below 30, 3; 40-60, 10; 60-100, 5; above 100, 4; total 22. This points to two free seats per bus per day as the normal rate and means a deduction of from 8 to 10 p. c. from the income of the bus-owner.

(ii) *Fares* :—The table on page 80 regarding routes and the number of buses running along them shows also the fares charged. These fares are the fares that were usual along the routes mentioned during 1932-33 when our investigator visited the various places. They were, of course, subject to considerable variations even then.

and it may be that their normal level also has on many routes been changed subsequently. We know, as a fact, that on most of the more crowded routes there has been since then a further downward tendency exhibited in the fares. What the table exhibits is merely the level of fares in the normal traffic season of the year 1932-33 at times when they were neither unduly elevated or depressed on account of temporary circumstantial variations. A glance at the table will show the immense variations in the rates from route to route. The table gives information regarding all the important routes and may be taken as fairly representing the condition of fares. The routes in the table are classified below according to the classes of per mile per passenger fares into which they fall.

Lower than 3 pies—1; 3-4 pies—18; 4-5 pies—16; 5-6 pies—7; 6-7 pies—11; 7-8 pies—nil; 8-9 pies—4; over 9 pies—2. Total 59.

It will be observed that the rates vary from less than 3 to more than 11 pies per passenger per mile. While there is marked concentration in the group 3 to 5 pies, a large number of fares fall within the 6 to 7 pies group. Above 7 pies there is only a small number of exceptional fares.

It may be noted at the outset that the very high fares are all for stages below 20 miles and that 4 out of 5 of them come from the Konkan districts and that in none of these cases is there a parallel railway line. It would, therefore, be correct to say that except for short stages the normal fares rarely exceed the 6-7 pies per mile level. The 6 to 7 pies fares evidently rule for stages of varied length, but again with regard to them it could be said that no railway lines run parallel to routes along which these fares rule. Railway competition, where it exists, would thus seem to lay down a maximum of about 6 pies. This conclusion can be seen to be otherwise valid also. For, the railway rates of 3rd class passenger fares are 4 pies per mile up to 50 miles, from 50 to 100 miles $3\frac{1}{2}$ pies and above 100 miles 3 pies per mile and the extra expense and inconvenience of railway travel has further to be allowed for. This addition works out at a fairly high rate for short distances and thus gives a competitive maximum of 6 pies in such cases. But this is only for short stages. Where effective railway competition over long stages operates the maximum determined for bus fares would in that case be no more than about 4 pies. The competition of railways is merely one of the factors in the determination of fares.

It is not of paramount importance for this tract, as the railway mileage is small compared with the extent of the tract and further not all of it effectively competes with parallel road transport because of the inconvenient situation and the state of the track. It would further be apparent that effective railway competition is not a governing or even very important consideration in the case of low fares. The lowest fares actually rule on routes where there exists no effective railway competition. In the same way no marked difference seems to obtain between fares ruling for long and short stages. While it is true that the highest fares all rule for short distances, fares as low as 3 to 4 pies rule on a number of comparatively short stages. It should be noted in this connection that our table takes account of only those short stages between the terminal points of which there is considerable normal traffic and between which in the large majority of instances regular services are being run. It does not include fares for, what may be called intermediate stages especially for passenger picked up or let down en route. The fares for these, though fluctuating violently, are normally higher than the regular stage fares. From our questionnaires we learn that the rate at which these are charged may be as high as 9 pies per mile and are rarely below 6 pies. Other factors that would appear to be important in the fixing of fares are the condition of roads, the infrequency or especially a marked seasonality of traffic, numerous ferries or tolls along roads, prohibition of large size buses i. e. all such factors as would make the running costs high. We have little data to judge how far such factors really influence fares but the influence does not appear to be considerable. While it is true that in the Konkan districts where fares are as a rule high the $1\frac{1}{2}$ ton buses even cannot operate, the high fares here are more due to organisation among bus-owners than to higher costs of operation. An analysis of most low fares seems to indicate that the ruling rates of fares have little to do with average costs of working. The fares seem in the main to be determined by the nature of the competition along routes and the existence or lack of organisation amongst owners. A normal rate of less than 4 pies per mile seems indicative of the existence of severe competition, which as the severity increases may force the rate down to even below 3 pies. On the contrary organisation amongst owners does not necessarily mean very high rates. Under special conditions an organisation may enable owners

to command very high rates such as at Alibag, but even a well-worked out roster system did not mean a rate higher than 4 pies per mile on the Ahmednagar-Poona route. These seem to be merely some limiting factors. As between the limits, however, local circumstances vary immensely and bring about a very large variation in rates of fares that may rule from time to time.

The trucking business in this tract is very limited in quantity. There are thus no definite rates evolved for the business, though as pointed out above the rates in this tract which we have been able to note seem to vary between $\text{₹}1$ and $\text{₹}1.5$ pies per maund per mile. These are the rates quoted by the specialised truckers. The rates for the carriage of small quantities of goods by passenger buses are even more variable than the other rates.

(iii) *Expenditure:—(a) Petrol and Lubricants:—*What we have to say regarding costs of operation is based particularly on the twenty one monthly estimated balance sheets printed at the end of this chapter and more generally on the evidence obtained from the questionnaires. We shall consider the items under costs in various groups. First we may consider the group of what may be called "Running Costs." The most important items in this group are Petrol and Lubricants. The difference in fuel costs would be due to two factors. (i) Difference in fuel consumption and (ii) Difference in the price of petrol. Though we did not receive complete records regarding petrol consumption, the figures of miles per gallon consumption were worked from data of consumption of the previous few months in a large number of cases. Generally the mileage per gallon varied between 16 and 18. In some cases the particularly bad state of the bus was held responsible for a distinctly higher than average consumption and in some cases the same was due to very bad roads. The difference in price is largely determined by the distance from the distributing centre, Bombay. The variation in price even as within this tract was quite considerable, the extreme variations being from Rs. 1-0-6 to Rs. 1-12-0 per gallon. It will be seen that 0-1-2 per mile seems to be the normal cost of petrol. Nowhere is it higher than 0-2-6 $\frac{1}{2}$ or lower than 0-1-1. The same factors governed the variations in the costs of lubricating oil. While in this case the influence of the state of buses or roads was similar, there was an added consideration of quality in the question of oil prices. There is a whole range of

differing quality of oils in the market and as a number of bus-owners suffer from a lack of cash resources the demand for very cheap grade oils is considerable. The lubricant costs in our calculations do not allow for any effects that the use of cheap oils may have on repair or overhauling costs. It is natural, therefore, that the variations in the costs of lubricants should be larger and that the dispersion within the range also more widespread.

(b) *Tolls and Ferries* :—Tolls may also be taken to be a strictly running cost as their incidence depends directly on the daily mileage run. At the time when our enquiry was made there were no tolls on the provincial roads. They were confined to the District Local Board roads. We have, in the estimates framed, not allowed for the subsequent imposition of the provincial tolls and calculated only those tolls etc. which were in operation when our figures were collected. But for purposes of estimating the present burden of tolls we give below a table showing the number of Provincial and District Local Board tolls in the various Districts. It will appear from the table that the incidence varies from district to district, but that the average for the whole tract comes to about one toll bar for every twenty miles run if we reckon the total of motorable roads in the whole tract as being between 3600 to 4000 miles. The rates of tolls etc. are considered in the chapter on Road Finance.

TABLE 24
Number of Provincial and District Local Board tolls.

District	Tolls Provincial	Tolls D. L. B.	Tolls Total	Mileage of Roads	Average miles of Road per toll bar
Poona	19	5	24	713	29
Satara	28	16	44	747	17
Ahmednagar	28	12	40	967	24
Sholapur	15	13	28	528	18
Kolaba	17	15	32	321	10
Ratnagiri	8	15	23	319	16
Total	115	76	191	3655	19.1

The expenditure on ferries which has to be incurred along certain routes is also a running cost. At all important points where the fords are, through the large part of the year, specially difficult, ferries are maintained. They are also maintained at certain places where during some months the causeways are liable to be submerged because of the rising of the water level. The ferries are auctioned out like tolls to contractors who are expected to charge certain scheduled rates. They, of course, differ from tolls in the sense that payment at a ferry is not a tax but payment for service received. We may here mention two grievances which were loudly voiced by most bus-owners who ran along routes where there were ferries. Firstly it was complained that the auction is not held early enough before the monsoon and even when the auction is held early the contractor does not put his ferry arrangements in order in time. The result is that the first monsoon floods cause considerable inconvenience to buses running along these routes. Further at places where even during the monsoon the ferry has to be only intermittently used sudden downpours and floods often find the ferryman unprepared or away. This also is a cause of delay and inconvenience. The other complaint was that though the rates which a ferryman can charge for his services are fixed according to a schedule, advantage is often taken of the circumstances by ferrymen to charge much higher rates.*

(c) *Tyres and Tubes* :—The expenditure on tyres and tubes is also a running cost when the vehicles are normally in operation. Information regarding the normal costs of these was more difficult to obtain than that about other running costs. In the case of petrol and lubricants a few months' record suffices to yield results which are substantially representative and accurate. This is not so with tyres and tubes. And as records for a series of years were only exceptionally available our investigator was forced to rely on accurate information for about a year—which was usually available—and to get it corrected by cross-questioning as to whether there were any extraordinary circumstances during that period to be allowed for. All the vehicles are equipped with pneumatic tyres of similar quality. Not even trucks are equipped with solid tyres. The price variations in tyre-

* There are ferries only in two out of the six districts, viz. 10 in Peona and 2 in Sholapur.

makes are not very considerable and the number of our units was too small to allow us to collect information regarding the real costs of either the cheaper lubricants or tyres. By general experience it was agreed that 15,000 miles was the average running period for a set of front-wheel tyres and 10,000 miles for those of rear wheels.

(d) *Repairs and maintenance*:—Repairs and maintenance charges were very difficult to ascertain. For, in their case the average has to be taken over a very long period to obtain a representative result. As a result of our enquiries in this connection it was made clear that the large majority do not attempt to keep their buses in a state of good repair throughout the year. The desire on the part of bus-owners to run their buses without a break for as long a period of time as possible is responsible for this. It is only at the time of the annual inspection of the motor vehicles for the purpose of the renewal of the permit that a certain amount of repair and overhauling expenditure is undertaken. No doubt such a policy may lead to frequent breakdowns and more costly and lengthy repairs as the bus grows older, but the representative owner seems to be neither in a position to, nor able to take a long run view of the situation. We have in the estimates given at the end of the chapter taken a monthly figure from the actuals given or general information supplied for the year immediately preceding the enquiry. It cannot be said how far these figures are representative.

(e) *Agent's Commission*:—The Agent's commission is in a sense also a running cost. As has been explained in a previous chapter almost all passenger traffic is secured through agents who charge a fixed percentage of the fares—usually an anna in the rupee—as their commission. This charge is therefore, strictly proportionate to income obtained from traffic booked through agents and is closely related to the mileage run. In a very few cases are there any important standing charges incurred by the owners for the purpose of securing and booking the traffic.

(f) *Wages*:—The items considered above are all in the nature of running costs; the second group to be considered is that of standing charges which normally do not vary with the mileage. The main items in this group are wages, garage, wheel tax, license and registration fee and expenses in connection with motor passing etc. The item

wages usually includes only the driver's and cleaner's wage. There is no other staff maintained by the vast majority of bus-owners. It is only the exceptional big units that maintain an office or anything in the nature of office establishment. The others merely run the buses either themselves or with drivers and look to the agents to obtain and book the traffic for them. Where an office establishment in the nature of even one clerk is maintained the services of the agent are dispensed with at the place of the office. In this case however, the office clerk does the work of the agent and is usually got licensed as such for enabling him to do this properly. From among the 155 bus-owners who replied to our questionnaire 76 had no office establishment, whether separate or joint.

The level of the wages of drivers and cleaners varies considerably and is of recent years steadily on the down grade. The maximum recorded by us of driver's wages was Rs. 60 p. m. and the minimum Rs. 25. Similar figures for cleaners were Rs. 20 and Rs. 8. The police regulations make it necessary that each bus be accompanied by some person in the employ of the owner other than the driver. This person may be said to act as a conductor during the journey, collecting fares from wayside passengers, signalling the driver to stop to pick or let them down etc., and to act as cleaner and assistant to the driver at other times. The drivers and the cleaners are all employed on a monthly basis. It is only rarely that an extra allowance has to be paid to them. When a service involves normally the staying away for a night by the driver, the fact is allowed for in the monthly salary paid to him. Occasionally, however, when on some special trip or on a short period fair route or because of breakdown, the driver or cleaner has to spend a night away from the place of origin some allowance is usually paid to him. Further in the way of extras, a double set of uniforms which it is necessary for the driver to wear when in charge of a vehicle may be provided for a number of times by the owner; and the owner may even pay the fees necessary for renewing the license and the driver's permit of the driver. Such payments of extras is, however, not usual and occurs only in the case of drivers long in the employ of an owner.

(g) *Rent*:—The rent of a garage is a standing charge whose scale varies largely from place to place. In the larger cities this may amount to as high a figure as Rs. 10 or even more per bus p. m.; in

the smaller towns the charge would be much less. In a number of cases it has not been possible to ascertain this charge as the bus is garaged in the yard of the bus-owner's house. There are usually no rental charges other than that of the garage. It is only the biggest concerns that maintain a separate office. It should, however, be noted that in Poona and a number of other places it is usual for a number of small owners to form unions or associations and have a union office. The rental expenses in such cases are very small and have been included by us in the item "miscellaneous".

(A) *Taxes*:—The wheel tax where imposed is shown separately. Its nature and extent is fully explained in the chapter on Road Finance. This has been also done with regard to "Licensing and Registration fees etc." But this item includes, apart from the actual fees to be paid, other types of expenses incurred in connection with obtaining the licenses and permits and especially for getting the vehicles passed as fit for the road. One part of these is expenses, whose nature is well-known, may be called fixed in the sense that it is usually incurred at rates which seem to be uniform throughout the tract. The other part is variable; this is chiefly composed of the expenses incurred in taking a vehicle to the place where vehicles are inspected or licenses and permits granted and staying there for the necessary duration. For owners who stay at places far away from district headquarters this expenditure is quite considerable, not even counting the loss of revenue for days lost. This also applies to the obtaining of counter-signatures. For, though the fee for a counter-signature is only Re. 1, you must travel for obtaining it with the vehicle to the headquarters of the other district through which it is desired to run the vehicle.

(i) *Miscellaneous*:—The head "miscellaneous" naturally covers a large variety of expenses. As the administrative expenses are small they have been put by us under this head. These consist chiefly of expenditure on account of rent and clerical wages, when an office is maintained either singly or in co-operation with others, office sundries and the printing of the coupon-books for passenger tickets. When along a route the roster system is working this expenditure is cut at the source i. e. each bus-owner gets his share of the income only after his proportionate share of administrative expenses has been deducted. The most important part of

the head "miscellaneous" in our classification is, however, formed of what may be called "secret distributional funds", though in reality the distribution is open enough. Indeed, this was perhaps the item in which the total costs and rates of distribution supplied to us by various bus-owners most tallied. The expenditure on this account is proportionately much less when the bus-owners are organised in a union or association. For unorganised individuals the average monthly expenditure on this account varied between Rs. 10 and Rs. 15.

A glance at the table of per mile costs shows the very large variations in the running costs for the different units. They range for the items allowed for, from As. $2\frac{1}{2}$ to As. $4\frac{1}{4}$ per mile. There is no obvious reason for such large variations. It should be observed that there is throughout the tract and especially in the cases for whom detailed estimates have been framed very considerable uniformity in general conditions. The $1\frac{1}{2}$ ton truck for the Deccan districts and $3/4$ ton for the Konkan districts is, as already shown, the overwhelmingly dominant type of vehicle. And there is no reason to believe that there is any considerable difference in the performance of the various types of such vehicles now on the roads. There is also a sameness in the type of work in which these vehicles are engaged. They all carry passengers to and fro along fixed routes for the major portion of their working life. They are all engaged in countryside and inter-urban traffic, and whether they work over long or short routes the length of their stages etc. is more or less the same. Analytically, it would appear that the variations may be due chiefly to such factors as the following: (i) the condition of repair of the bus, (ii) the condition of the roads, (iii) varying incidence of tolls, ferries and wheel taxes, (iv) size of the operating unit and (v) daily mileage run. There is, however, no way of judging how far these factors are really important in causing the variation. It is difficult to know anything definitely about the first two. The third is not quantitatively very important. The size of the operating unit and the daily mileage run would seem to be most important but in the cases presented by us there is no definite correlation one way or the other between these and high or low costs. Both in owner-driver or large units and in cases both of long or short runs have high or low running costs been exhibited. Our data are obviously too imperfect and the number of cases too small for us even to attempt to say anything on this point.

(iv) *Depreciation, Interest and Insurance*:—We have, heretofore, considered only those items of expenditure on which a certain amount of definite information was available and which the bus-owners in this tract consider as the items which enter into cost. There remain, however, some other important necessary costs to be considered. These are depreciation, interest and insurance. None of these is normally allowed for as costs and regularly calculated. Hence there is no information available from the side of the vast majority of bus-owners. It is obvious, however, that these are real costs which must be properly calculated before arriving at any decision regarding the profitability of road transportation in this tract.

The great difficulty in allowing for depreciation arises from the fact that there are no data from which to calculate these. We received only one solitary piece of accurate information regarding the life of cars. This was from a very well-organised firm with a fairly large fleet. The average calculations of this firm were 25,300 running miles per bus during a year of 327 working days per passenger vehicle (this amounts to an average daily run of about 78 miles over working days and 70 miles over the whole year); and the average life of a bus was calculated at $4\frac{1}{2}$ years. The firm being well-organised with its own repair workshop its vehicles are always kept in perfect order. It is extremely unlikely that the buses of the average owner in this tract are similarly cared for. We cannot calculate the average miles run by passenger buses. As shown in a former chapter* the mileage run daily varies considerably from service to service. Further it is impossible to say for how long a period each vehicle works on the road during the year. The owner-drivers work their vehicles the hardest. Our investigator came across an owner-driver during his tour who stated that he had been on the roads every day for nearly eighteen months continuously and he had lost during the whole time only 3 days and these were due to way-side accidents. A large firm of distributors with a very large repair workshop estimates that the owner-driver works his bus on an average for 350 days in the year. Where the buses are run by paid drivers the average is much lower. This the same distributors estimated at 320 and odd days; it may sometimes go down to as

* See ante p. 31

low a figure as 290 days. These calculations do not allow for cessation of a service or part of it, where this takes place, during, say, the monsoon months. Even in countries where accounts are very fully kept the average life of a car and the proper depreciation rates are matters under dispute.† There seem to be two chief practices of allowing this; a rate of so much per mile run and an annual percentage of cost basis. In U. S. A. it would seem that the 25 p. c. of cost is very generally in vogue.‡ A four year life and a general rate of this sort would also seem suitable for our conditions. Of course it is needless to work out these vague assumptions in considerable detail. But acting on them we may state an allowance for depreciation of nearly Rs. 60 p. m. as necessary in the case of the average passenger bus in the tract.§ The matter of interest calculations is as vague as that of depreciation. A certain amount of information regarding this has been embodied in another chapter. Calculating the average rate at about 9 p. c. it would seem that an allowance of nearly Rs. 15 p. m. must be made an account of this head.

Insurance is not compulsory throughout this tract; and where it is compulsory it is so only in respect of third party risks. At present it is only under the discretionary powers vested in the District Police authorities that insurance has been made compulsory in the districts of Ratnagiri and Kolaba. The case for making, at least, third party and passenger insurance compulsory seems to us to be overwhelmingly strong. The economic condition of the large majority of bus-owners is such that they can never pay any considerable damages for loss of life or limb of passengers. The condition of the buses, the state of roads, the mechanical competence of the drivers and the sense of responsibility shown by them, the regulations regarding vehicle inspection, overcrowding etc. and the way in which they are or can be enforced, all these make it imperative that the very large class of bus-passengers should be adequately protected against the risks that they have to undertake. The number and seriousness of accidents that occur are sufficient proofs and we feel

‡ B. Wintry:—Automobile operating cost and mileage studies (1931).

† U. S. A. Dept. of Commerce:—Motor Truck Freight Transportation (1932) and A. T. A. Bulletin No. 425 (1933).

§ On our calculations the depreciation rates calculated in the Mitchell-Kirkness report at various places (vide p. 101 App. I) seem to us to be too high.

that Government should no longer ignore this very important question. There is little doubt that with compulsory insurance conditions of travel improve immediately in a considerable degree and in the long run on account both of better handling of buses and of development of traffic the bus-owners benefit as a class. The only reason that is put forward against the proposal for compulsory insurance is its cost. It is always urged that the industry is run so uneconomically today that it is unfair to saddle it with further burdens. In the first place we do not consider this to be a relevant consideration. Nobody would dream of suggesting that because the legally allowed complement of passengers is not sufficient to run a bus profitably, overcrowding of buses should be permitted. And in our opinion compulsory insurance against third party risks stands exactly on the same footing as the police regulations meant to secure the safety of passengers. Further we believe the argument to be fundamentally fallacious. For, the root trouble with the industry as it is run today is that all the relevant costs of the business are not brought home to the average bus-owner. The consequence is an incomplete appreciation of the economic condition of the business and continuous virulent competition. Non-profitability could be a strong argument against increased taxation but never against proper steps for passenger safety. A government which can by imposition of tolls levy on certain routes new taxation which amounts in certain cases to Rs. 100 p. m. should not shirk the proper responsibility of making third party and passenger insurance, whose cost amounts to roughly less than Rs. 100 p. a. compulsory.

For accounting purposes however, it is the whole insurance and not only third-party insurance that is a proper charge on the earnings of the vehicle. Whether the various risks undertaken by the owner are insured against or not the element of cost involved on their account cannot be ignored. And when the cost of given risks is determinable according to the rates quoted it must be allowed for in strict accounting. We must especially do this for our calculations, as in arriving at the estimates of average costs, we have everywhere eliminated the extraordinary element. The average insurance costs in this tract for the passenger buses would vary between Rs. 250 and Rs. 300 p. a. This is a charge of Rs. 20 to Rs. 25 p. m. * If then we reckon the depreciation, interest and

insurance charges together we must allow on the expenditure side a further monthly charge approximating to Rs. 100.

(v) *Profits*:—We may repeat our statement that the data collected by us is too meagre to enable us to say anything about the profit-earning capacity of the average bus-owner. At the same time the general information given above and the details of the 21 monthly estimates of income and expenditure given at the end of this chapter should prove to be of some interest. These 21 cases are distributed widely over the tract and represent a variety of routes and conditions. They also contain a variety of unit types. The income figures are calculated from actuals obtained for periods varying from six months to one week. The expenditure figures are in some cases actuals, in others estimates from fairly full data supplied from notes, memo-books etc. We believe, therefore, that for a particular short period they are substantially correct representations of the actual facts of the particular cases. It is, however, very difficult to say how far they are representative of the conditions in the whole industry or approximate to average conditions over a long period. Certain obvious considerations may be noted. The income figures are less representative of the average period than the expenditure figures. The former are calculated from figures supplied for a period (at times very short) sometime shortly before our investigator visited the place. In all cases they represent the income of a period during the traffic season. Thus they tend to exaggerate the average income for those routes (and these are very large in number) over which there is a distinct seasonal fall in traffic for a part, say monsoon, of the year. In the majority of cases the income figures do not allow also for days lost in overhauling, or repairs to the bus. Further our calculations do not allow for any extra costs such as those involved in buying buses on the hire purchase system. Where, therefore, in the actual calculations in the cases estimated by us a profit is shown the presumption is that its level has been shown unduly high. It will be seen that allowing for depreciation, interest and insurance at the rate of Rs.100 p. m. per bus there yet remain 11 cases out of our 21 which make substantial profits. The others have during the particular period obviously run at a loss. We tried to analyse the factors that enabled these eleven to make profits in light of the information available from other parts of the questionnaire. There were found to be

exceptional factors present in some of these cases. In one case the fact that the service had a monopoly over those parts of its routes which lay in the Nizam's Dominions was a very important factor in its profit-earning capacity. In another case the figures we obtained pertained only to one bus in a composite service running on a very long route with through passengers and little competition. The figures regarding earnings and expenditure of the other buses of the service running along shorter and more competitive routes were unobtainable. This case has, therefore, to some extent to be treated as exceptional. In two other cases the income figures were obtained for periods during which traffic is specially full along the routes which are worked only for few months of the year; the figures for this period cannot be taken as representing the conditions for the entire year. In the remaining cases no exceptional factors appeared to be present. The only feature common to those who made profits was that in all their cases the daily run was higher than 80 miles; otherwise there was considerable divergence in other conditions. Generally, however, in all cases which show profits, income figures pointed to specially good traffic along the routes for the period for which the data were obtained. A similar examination of the circumstances under which the units running at a loss were working did not reveal the existence of any special factors. As a fact it should be remembered that all these units are exceptional in another way. They all keep fairly full accounts and this is highly exceptional amongst bus-owners in this tract. The experience of most countries shows that the keeping of regular accounts is normally associated with better all-round organisation and more than average profit-earning capacity. On the data we present, no definite conclusion is possible. Profits were made mostly along the more sheltered routes i. e. routes which were at the moment not experiencing, for one reason or another, any considerable overcrowding. Profit-making was not necessarily associated with better organisation. On the other hand taking all the limitations of our statistics into account it appears clear that a very large proportion of even the better-organised units were during the period to which the figures refer running distinctly at a loss.

(vi) *Bus-owners' standing in the business* :—There is another type of information collected in our questionnaires which may

indirectly throw some light on the profitability of commercial passenger transport by bus. We had asked all owners for how long they had been in the business. 141 out of 155 gave definite information regarding this. These replies are classified below.

TABLE 25.

Number of years spent in the Bus-Industry, by individual Bus-Owners.

One year	Two years	Three years	Four years	Five years	Six years	Seven years	Eight years and more	Total
12	35	29	19	12	7	8	19	141

It is difficult to say how exactly these statistics are to be interpreted. But we suggest that they indicate a somewhat rapid turn over in the composition of the class of bus-owners. There is to be noticed in this connection an obvious bias to our sample. In getting the questionnaires filled our investigator had deliberately to omit those who had been in the industry for less than a year almost entirely (as a fact only two of this class were included). He also tried to approach as many of the older-established units as was possible. Thus the above table may be said heavily to overweight the older elements. Even so it shows that the proportion of those who have been less than four years in the industry to be more than 53 p. c. and of those who have been more than 8 years in it to be just over 13 p. c. In actual fact the percentage in the total must be considerably more in favour of the smaller age groups. Elsewhere* we have given a table of the number of public motor vehicles inspected by the police since 1923. Presuming these statistics to represent the proportionate growth in the number of passenger buses fairly correctly, it is obvious that 8 years before 1932-33 (the year to which our table refers) a considerable number of buses were already running along roads and also that during the 4 years preceding 1932-33 there had been no very large growth in their numbers. The conclusion that seems apparent from these facts taken in conjunction with the table compiled above from the questionnaires is that the composition of the class of bus-owners is a rapidly changing

* Vide ante p. 35

one. Further it also appears that the conditions in the business are not favourable to concentration of ownership of buses; or rather that even a business organised on the large scale cannot hope under present conditions to make continuous headway. This conclusion is reinforced by the detailed information that we obtained from some of those who have been very long in the business. It seems borne out by their experience that the best period for the bus-owner was from the year 1922 to 1925 or 1926. The majority of those who have been in the business for more than 8 years possessed in 1932-33 a smaller number of vehicles than they did at the end of this period of prosperity. Almost all of these reached the highest number of vehicles owned by them some time during the period 1925 to 1928. The years 1925 to 1928 may be taken to be years of distinctly declining prosperity and increasing competition. It is since 1928, however, that the real heavy slump, by general consensus of opinion, began. Comparatively large units which during the period 1925-28 had come to own from 10 to 25 vehicles have now fallen to ownership of 5 to 10 vehicles only. There are a few owners who have continued to prosper throughout, but these are distinctly the exceptions.

The facts put together in this chapter seem to us definitely to point to the condition of the industry of bus transportation as heavily overcrowded and considerably depressed, one in which even the better organised units find it difficult to earn a profit and in which consequently the number of those who are forced to leave it after a few years' losses is very large.

NOTE. The following tables represent estimated monthly accounts of 21 selected cases from among the detailed accounts that were available to us. The income is calculated from figures of actual receipts, obtained for some weeks in the year 1932-33. Under expenditure, certain items represent actuals for the corresponding period, certain other averages taken from actuals of a longer period and some are in the nature of mere estimates. The figures are as far as possible taken from actual accounts but a certain element of estimation enters into them. The details regarding this are explained in the body of the chapter. In estimating profitability from the gross amounts of income and expenditure given in the table, it should be remembered that the figures of expenditure do not allow for depreciation, interest and insurance and that the level of taxation refers to 1932-33 i. e. before the revival of the provincial tolls.

TABLE 26.

No.	Number of Buses.	Mileage of Routes operated.	Average Miles travelled per bus per day.	Total income.		Total expenditure.	Average income per bus per mile.	Average cost per mile.	Petrol cost per mile.
				Rs. As.	Rs. As.				
*1	1	22	70	390-5	438-6	3-0	5-0	1-4	
*2	1	69	140	805-9	675-3	3-1	2-6	1-1	
3	1	72	150	1-05-7	833-11	4-7	3-0	1-2	
4	1	31	65	550-0	448-0	4-6	3-9	1-1½	
5	3	10	40	1252-8	1150-6	5-7	4-3	1-10	
		14	50	913-9	1044-12	4-10	2-9	1-2	
6	2	25	50	1007-4	480-3	5-10	2-9	1-2½	
7	1	46	92	442-0	359-0	6-9	4-0	1-2	
*8	1	17	35	442-0	381-1	3-7	3-0	1-2	
*9	1	32	65	90	1-01-1	1046-2	3-3	2-6	1-1
10	2	42	90	2-85-0	1335-9	3-10	3-0	1-1	
11	3	24	69	140	2671-15	2346-5	3-4½	4-0	1-2½
12	3	69	140	161	1411-0	994-0	4-8	4-0	1-1½
13	2	161	161	45	1109-12	691-12	6-7	4-0	1-3
14	2	22	45	94	98-9-3	6532-10	5-7	4-3	1-8½
15	10	42	94	98-9-3	6532-10	5-7	4-3	1-8½	
		20	85	1582-0	982-14	4-11½	3-0	1-1½	
16	2	42	85	2345-14	1537-5	5-½	3-3	1-1½	
17	3	42	85	555-7	286-12	3-10	3-9	1-8	
18	1	26	55	55	2867-2	2337-0	5-7	5-2½	2-6½
19	5	12	55	2867-2	2337-0	5-7	5-2½	2-6½	
20	2	50	72	1655-1	1013-13	5-10	3-9	1-3½	
21	5	24	72	1655-1	1013-13	5-10	3-9	1-3½	
		57	127	4563-0	3092-8	3-10	2-7	1-1	
		36							

* Owner driver.

TABLE 27.

No.	Running Costs.				Agent's Commission.	Wages.			Taxation & Miscellaneous.			
	1 Petrol.	2 Lubricants.	3 Tyres & tubes.	4 Maintenance.		1 Driver.	2 Cleaner.	Garage. ¹	1 Toll.	2 Wheel Tax.	3 Motor passing.	4 Miscellaneous.
	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.	Rs. As.
1	178-2	13-0	100-0	44-4	26-0	...	19-0	...	36-0	3-0	6-0	15-0
2	285-0	17-8	150-0	37-13	49-14	...	10-0	...	90-0	3-0	6-0	25-0
3	337-8	21-0	175-0	49-7	81-8	45-0	13-0	...	45-0	7-8	7-0	25-0
4	138-12	8-0	95-12	36-1	34-0	45-0	10-0	...	30-0	24-8	8-5	18-0
5	416-4	52-8	283-4	7-0	10-0	100-0	16-0	...	60-0	46-0	8-6	30-0
6	220-2	20-0	416-10	40-0	13-0	80-0	24-0	13-0	100-0	5-8	12-8	60-0
7	213-12	18-0	70-0	41-15	68-8	...	11-0	...	37-8	...	5-0	20-0
8	78-6	7-8	50-0	30-0	27-10	...	8-0	...	37-8	...	7-0	15-0
9	155-14	9-0	75-0	31-11	...	45-0	10-0	...	37-8	...	3-0	12-0
10	365-10	22-8	100-0	75-0	68-8	80-0	20-0	15-0	67-8	4-0	13-0	15-0
11	587-19	40-8	187-8	68-9	129-3	120-0	30-0	...	10-0	6-0	8-0	60-0
12	961-14	90-0	750-0	111-15	167-0	150-0	36-0	...	18-0	6-0	33-0	22-8
13	345-14	33-12	200-0	23-1	13-5	42-8	7-0	...	2-8	2-8	17-0	15-0
14	218-12	30-0	150-0	40-0	62-0	75-0	20-0	...	10-0	45-0	15-0	12-0
15	3037-8	300-0	1666-0	250-8	103-0	400-0	100-0	20-0	300-0	41-11	170-10	131-9
16	360-15	24-8	200-0	65-10	92-0	80-0	23-0	...	60-0	8-5	17-8	27-0
17	536-14	42-0	300-0	112-8	146-10	120-0	30-0	...	135-0	6-0	26-4	45-0
18	173-8	13-8	83-5	28-13	...	30-0	10-0	...	30-0	2-0	10-0	10-0
19	1316-8	103-0	368-8	112-8	129-4	175-0	50-0	15-0	270-0	22-8	25-0	50-0
20	356-4	21-0	360-0	65-10	103-7	40-0	18-0	10-0	40-0	4-3	0-5	25-0
21	1316-6	125-0	474-0	208-4	284-12	175-0	10-0	...	330-0	52-1	25-0	51-10

CHAPTER VII.

Road Finance and motor taxation.

It is obvious from the discussion on road mileage that no considerable expansion in road building activities has taken place in this area during the last decade. In spite of the very considerable increase in motor transportation the area under metalled roads has not gone up, nor does a comparison of the conditions today with the Motor Guide of 1923 show any marked change in road facilities available. As a fact there has been, it would seem, a distinct deterioration of the position in respect of portions of the roads under the control of some District Local Boards. As motor traffic has increased, the road surface, whether metalled or unmetalled, has to be of a better quality than before and repairs have to be much more frequent than was formerly the case. It is with great difficulty that the District Local Boards have been able to cope with the increase in maintenance and repairs charges and most of them have been unable to undertake any important works of improvement such as widening or straightening of roads, building bridges and causeways, etc.

(i) *Income and expenditure of road building authorities:—* Roads in this Presidency are maintained by three sets of authorities; the Provincial Government, the District Local Boards and the Taluka Local Boards. The construction and maintenance of the provincial roads is a charge on the annual provincial budget. After the introduction of the Montagu-Chelmsford reforms it was intended to transfer the control of all provincial roads to local authorities. And a small experiment in that direction was tried in the Ahmednagar and Poona districts. A great many difficulties, financial and other, in the way, of such transfer have held up any further progress in this direction.* The District Local Boards finance road expenditure from their annual income and further receive special grants-in-aid for communications from the provincial government. The Taluka Local Board resources very largely consist of grants from the District Local Boards, their only other important source of revenue being certain land revenue receipts.

* Vide Reviews of administration in the Bombay Presidency, 1933. pp. 824-829.

The detailed figures regarding the finances of these authorities are given in the various tables at the end of this chapter. The facts that they indicate may briefly be noted here. The average expenditure of the provincial Government, the municipalities and the District Local Boards, during the years 1930-31 to 1932-33 on roads in these six districts has approximately been annually Rs. (thousands) 1143; 433 and 857=2433 Total. The taluka local boards also spend a certain amount annually on the roads in their charge. It is not possible to get these amounts from the published statistics. We may for our purposes, however, neglect this expenditure as few of the roads maintained by the taluka local boards would be motorable. The income that the District Local Boards and the municipalities obtained from the taxation of vehicular traffic was during the same period on an average approximately Rs. (thousands) 149 and Rs. 237 p.a. respectively, i.e. Rs. (th.) 386 total. While the district local board and the municipal income from taxation can be ascertained by districts, this is not possible in the case of provincial taxation. The head, "inspection of motor vehicles" in the provincial budget shows during the latest 3 years (for which period alone separate statistics are available) an average income of somewhat over Rs. 13 lakhs and an expenditure of a little less than Rs. 1 lakh, leaving a net income of more than Rs. 12 lakhs from this source to the provincial Government. Of this sum approximately Rs. 2 lakhs may be credited to the six districts.* It would thus appear that as against an expenditure of Rs. 23.4 lakhs, the various authorities receive an income from the taxation of vehicular traffic of only about Rs. 5.8 lakhs. The provincial road tolls were not in existence during the period for which the above figures are calculated. The income from this new source is, however, not large. The revised estimates for 1933-34 put the income from this source at Rs. 2.22 thousands of which about Rs. 50 thousand may be credited to the six districts. This would still leave the above income figure appreciably below Rs. 4 lakhs. It should be noted that the expenditure on the taluka local board roads which we have neglected above is also a charge on this income, as the Taluka Local Boards derive their funds entirely from the District

* This sum has been arrived at by taking the figures of registrations, licenses and permits as returned in the police reports for 1933 and calculating the income from them according to the schedule of fees.

Local Boards and do not separately tax vehicles and vehicular traffic.

If these income and expenditure figures of the present day are compared with those of a decade ago i. e. of the time when commercial motor vehicles had not become very numerous in these districts it will be found that in spite of a not much greater mileage than before the burden on the revenues of the local authorities has grown enormously. This is specially so with the district local boards. The provincial expenditure has not grown to any considerable extent.* The expenditure of the municipalities has grown in a much larger proportion than that of the provincial Government.† With the enormous growth of inter-city traffic by bus and the increase in the numbers of private cars this increase has become inevitable. Whereas the average expenditure on roads of the municipalities was during the period 1922-23 to 1924-25 Rs. (thousands) 3,17 p. a. it was in the latest period Rs. (th.) 4,33. There has been a 33 p. c. increase in expenditure. The income of municipalities, however, from the taxation of vehicles and vehicular traffic has grown more than proportionately. This income in the two periods amounted to Rs. (th.) 1,23 and Rs. (th.) 237, respectively. The situation, in this respect, of the District Local Boards is distinctly the worst. Their expenditure has doubled during this period while their meagre income has failed to increase even proportionately. Their income and expenditure during the years 1921-22 to 1923-24 used to be Rs. (th.) 96 and Rs. 4,47 while the figures now stand at Rs. (th.) 1,49 and Rs. (th.) 8,57 respectively.

The reasons for these disparities will become clear when we examine the sources of the revenues of the various authorities. The sources of provincial income are the registration, the renewal and the licensing fees. The fee for the first registration of a car is Rs. 40 and the fee for successive annual renewal of registration Rs. 32. This scale applies to all cars and also all buses,

* It will be noticed that there has been an increase only if the repairs and maintenance charges alone are considered. There has been an actual decrease in the total expenditure i. e. including expenditure on original works and improvements.

† During the period two municipalities in the Ahmednagar Dist. had been abolished. The number of municipalities in the six districts was in 1922-23, 43 and in 1932-33, 41. This change, however, does not materially affect the figures.

lorries etc. of less than 2 ton weight. The initial fee for a motor driving license is Rs. 20 and for the renewal of the license Rs. 5 annually. The owner of a public conveyance vehicle has before being able to operate it as such to acquire a permit called owner's or 'A' permit and the driver of such a vehicle has also to acquire a driver's permit called 'B' permit. The fees for these permits are.

	Initial	Renewal
'A'	5-0-0	2-8-0
'B'	8-0-0	4-0-0

A prominent feature of this taxation will be observed to be that no differentiation is made as between all types of vehicles which are less than 2 ton weight. And as the number of heavy motor vehicles i. e. those above 2 tons is extremely small it means that there are uniform registration fees for all classes in this Presidency.

The sources of municipal taxation are (i) taxes on animals and vehicles, (ii) tolls on roads, (iii) taxes on hackney carriages, and (iv) fees from motor stands. Of these the last two are for all practical purposes negligible. In 1932-33 only one municipality in this tract showed any income under head* (iii) and only two under head† (iv), and all these were from among the smaller municipalities. On the other hand there were only two municipalities which showed no income under the head taxes on animals and vehicles during the year 1932-33‡ and there were eight which levied no tolls. These eight were the Poona city and Suburban municipalities, the hill stations of Mahabaleshwar, Panchgani, Matheran and Lonavala and Satara suburban and Rahimatpur. The wheel tax is imposed on horse carriages, tongas, bullock carts as well as motor vehicles. It is usually graduated, being lesser on the bullock carts and horse carriages. As within the class of motor vehicles however, there is no graduation and there is a flat rate per annum for all types. The rates for the motor vehicles wheel tax differ from municipality to municipality. The extremes are represented by Rs. 12 p. a. of Malvan and Rs. 120 p. a. of Mahabaleshwar; but the range of normal fluctuations is not very considerable. The standard rate for the smaller municipalities seems to be Rs. 24 p. a. Barring Mahabaleshwar the highest is Rs. 50 of Sholapur and the

* Panvel.

† Saswad and Sirur.

‡ Sirur and Alandi.

typical rates for the bigger municipalities are represented by the following. Ahmednagar Rs. 42; Poona Rs. 36 (Rs. 42 for trucks); Karad Rs. 30; Pandharpur Rs. 30. The Kolhapur municipality charges at the rate of Rs. 40 p. a. The wheel tax is usually charged only at the place where the car is registered and is garaged. There would, however, arise difficulties in cases where the route followed by a bus is long and each bus cannot return to the starting point in a day's trip. In such cases the bus would have to be alternately garaged at two places and would become liable to a wheel tax at both of them. There would also be cases where the payment of a wheel tax would mean exemption from toll. Here on routes where the road lies through a municipal area the regular service owners may find it more profitable to compound by paying the annual wheel tax rather than pay daily tolls. Such cases are however, extremely exceptional. At Ahmednagar a special daily toll is levied on all cars whether local or not. This is a temporary measure intended to defray the costs of certain special road construction. Ordinarily, a vehicle pays a wheel tax at only one place and pays tolls on its route at places where it finds it necessary to enter the municipal limits.

The only way in which the District Local Boards tax vehicular traffic is by the levy of tolls on roads. The scale of taxation on local board roads is usually half that of the provincial scale. On the provincial roads Re. 1 per day is levied on all public conveyances (whether taxi or bus) except large goods trucks which pay Rs. 2, and As. 8 on all private cars. The corresponding District Local Board scale is As. 8 and As. 4. It would thus be observed that in theory no difference is made between the light and heavy cars in this taxation. But as a fact as touring cars operating as public conveyances are extremely few on the District Local Board roads and as conversely there are few private buses or lorries there is a difference between the taxation of the touring car and the bus or lorry. This differentiation is, however, somewhat modified by the fact that the toll is levied not at each time a vehicle passes a toll bar but once in a 24 hours period only. This means that the taxation is not strictly proportioned to road use and that public conveyance vehicles which use a stretch of road many times a day are taxed at a lesser rate than private cars which would not do this. It has not been possible for us to obtain any data regarding toll incomes from various types of vehicles. It is not in the

interests of the toll contractor to divulge the figure of annual receipts and we were consequently unable to obtain any information from this class of persons. The authorities do not unfortunately compel the contractors to keep or present any type of information and hence valuable information that may otherwise be obtained from this quarter could not be gathered together.

The sources of municipal income are wheel taxes on cars within the limits of the municipality, and the tolls. The vast majority of motor vehicles in the tract are garaged within municipal limits. Thus this becomes a very important source of municipal revenue and as inter-urban traffic also usually passes through municipal limits it becomes liable to a toll payment. The initial levy of the wheel tax in some cases and the increase in its ratio in most others is also a recent phenomenon and this explains the rise in municipal income from this type of taxation. The District Local Boards could not profitably levy the wheel tax; and as comparatively the private cars use their roads less they do not profit equally from an increase in their numbers.* On the other hand the most important District Local Board road users are the heavy road-destructive public conveyances. Hence the comparatively smaller increase in District Local Board income and the comparatively larger increase in its expenditure †. The necessity for the increase in municipal expenditure has arisen not so much because of the increase in the cost of road maintenance as of the need felt for road widening and the improvement of road surface, especially to allay the dust nuisance. Where such works have been undertaken municipal outlay on roads has during the last decade been very considerable. But except in the case of a few larger municipalities this has not been done. Thus though the income from vehicular and traffic taxation of all the 42 municipalities of the six districts has throughout these years fallen short of their total expenditure on roads this has not been so in all individual cases. Government have by resolution laid down that all municipalities must spend the whole of the proceeds from wheel tax and road

* The total registration of private cars has further increased at a more rapid rate than the increase in the number of public conveyances.

† It should further be noted that on account of financial stringency the provincial grants for civil works to D. L. B's. have of late years progressively declined. The total provincial grants-in-aid to local boards in the Presidency were as follows. Rs. (lakhs). 1928-29; 19, 1929-30; 16, 1930-31; 16, 1931-32; 10.75, 1932-33; 8.

tolls, after making allowances for the cost of collection and one-third of the expenditure on watering roads, on road repairs and road construction. In spite of this each year there are found to be a number of municipalities in the Presidency disregarding this order of Government. We learn, for example, that in 1932-33 in the districts of Ahmednagar, Poona, Satara and Sholapur, the Ahmednagar, Poona City, Lonavala and Mahabaleshwar municipalities spent much more on roads than the income derived by them from the wheel and toll taxes, while Baramati, Talegaon-Dabhade, Alandi, Islampur, Karad, Vita, Wai, Pandharpur and Karmala municipalities spent less than their income from these taxes.*

It is not possible to estimate with any measure of accuracy the total income derived from the central taxation of motor vehicles, their accessories, etc. The figure for the whole of India is easily available; but it would be impossible to attribute a definite share of it to the area under consideration. The Mitchell-Kirkness report shows that for the whole of India the yield of central taxation much exceeds the total of provincial and local taxation yields. The standards of local and provincial taxation assumed in the Mitchell-

* Government resolution reviewing reports of municipal taxation and expenditure in the Bombay Presidency for the year 1932-33.

† The following table gives the approximate figures for the latest years.

(Rupees in Thousands)

Sea customs Revenue.	1932-1933	1933-1934
Motor spirit	29,09	10,20
Motor cars— Lorries etc. †	68,10	95,02
Pneumatic rubber-tyres etc.	37,57	32,63
Total	1,34,76	1,37,85
Excise on motor Spirit	3,95,29	4,29,22
Grand Total	5,30,05	5,67,07

† Excludes customs on lorries etc. till Dec. 1932.

Kirkness calculations* exceed appreciably the standard in the area studied and it would, therefore, be no exaggeration to say that the yield to the centre from this area is at least double that of the total of provincial and local yields.

(ii) *Motor contribution and its basis*:—We are not in a position to determine from the figures given above what is the contribution of motor vehicles and traffic to local revenues. For, though the motor registration income figures are unmixed, the wheel taxes as well as the tolls, provincial, municipal and district local board, do not derive their income entirely from motor vehicles. All sorts of vehicles contribute to this income and as horse vehicles are still important within municipal limits and bullock carts still the most important means of goods carriage on the district roads, the pure element of motor taxation is difficult of determination.

It is thus not possible to calculate for our area the proportion in which motor transport contributes to the building and upkeep of roads. Messrs. Mitchell and Kirkness say: "It seems that commercial motor transport alone is in the provinces concerned, contributing in all forms of taxation a sum which exceeds both the actual increment in the maintenance bill and the total revenue expenditure on original works".† Their calculations are, however, open to serious objections at least so far as the Bombay Presidency is concerned. It is, for example, taken for granted that the average wheel tax is Rs. 60.‡ As has been made clear, at least for the six districts surveyed, the average is distinctly less than Rs. 35. Further according to their calculations the contribution of commercial motor vehicles alone to tolls would amount to Rs. 14.25 lakhs. The total income from tolls and ferries of all the municipalities and district local boards in the Bombay Presidency (including Sind) amounted during the year 1930-31 (for which the Mitchell-Kirkness calculations have been made) to only Rs. 10.42 lakhs. It should be pointed out that in the case of the District Local Boards alone is this a net figure. The municipal cost of collection of tolls and ferries was for this year Rs. 1.23 lakhs. The corresponding District Local Board figure cannot be known. From the point of view of the tax burden the gross figure is important and from the point of view of the income of authorities it is the net figure that is

* Op. cit. p. 44.

† Op. cit. p. 47.

‡ Ibid. App. J.

important. The figure of net income for 1930-31 is Rs. 9.19 lakhs; the gross figure is not available. Whatever that may be, it is obvious that the Mitchell-Kirkness estimate of Rs. 14.25 lakhs is a considerable over-estimate as the total actuals given above include, of course, substantial contributions from bullock-carts and private motor vehicles.

It is also more difficult in India to determine what the basis of such contribution should be. In other countries where motor vehicles are by far the most important road users it has been possible to arrive at working principles for the co-relation of road expenditure with motor taxation. For example, the Salter Conference arrived at the unanimous conclusion that the total contribution payable by all classes of mechanically propelled vehicles should be equal to the entire current expenditure on roads.* In U. S. A. a joint committee of Railroads and Highway users agreed in 1933 to the following statement of principles: "Motor vehicles should pay the entire cost of the State highway system. They should pay also a part of the county and or township highways, that part to be determined by the extent to which such county and or township highways are in general use rather than local use. Furthermore, motor vehicles should contribute in part to the cost of arterial roads through cities".

Messrs. Mitchell and Kirkness approach the problem in India through calculations of the increase in road maintenance expenditure since 1925-26 and the cost of new construction. They impute this specially to motor vehicles. There are, however, obvious difficulties in this approach. A fundamental objection to the general use of such a method would be the differences in the price levels at the two periods; but further it seems unfair to take the entire cost of the road system in 1925-26† as a permanent charge on other than motor users. When a constantly increasing proportion of road use is by motor vehicles such a fixed deduction in their favour seems unjustifiable. For, the ultimate position when all vehicular road-use is by mechanically propelled vehicles would be analogous to that of the Salter Conference‡ where interest on the

* Report of the conference on rail and road transport p. 17 (1932)

† It is obvious also that already in 1925-26 road maintenance and building was considerably affected by motor transport.

‡ Even the motor interests in U. K. do not claim that the road budget figure before say 1918-19, should be taken as a deduction from the current expenses charge which they are asked to bear.

"legacy from the past" is held to be balanced against "community use".*

The approach to the problem has, therefore, to be direct on the lines indicated by the report of the U. S. A. committee of Rail-roads and Highway users. The problem is that of determining on the various types of roads, provincial, municipal and local board, what proportion of total road costs should be allocated to motor vehicles. In India even the provincial roads are used to a certain extent for bullock cart traffic and hence their complete costs could not be allocated to motor transport. At present, data are completely lacking for making even the roughest allocation; but if certain elementary traffic surveys or counts were undertaken at the various toll bars and even if rough information were extracted from the toll contractors' records some approximation of this sort could easily be arrived at. All important works of original construction and improvement of roads, bridges, etc. by all authorities could fairly be debited to motor transport and a varying proportion of local board, municipal and provincial maintenance expenditure allocated to it. It is only when this is done that we could say whether motor vehicles are bearing their fair share of taxation or not.

It has further to be emphasized that under the present circumstances road maintenance has no relation to motor taxation because the main recipient of motor tax income has no direct responsibility for the construction or up-keep of roads. Messrs. Mitchell and Kirkness calculated for the whole of British-India a total motor tax contribution of Rs. 830 lakhs for the year 1931. Of this Rs. 530 lakhs went to the Imperial Government and only Rs. 300 lakhs to provincial and local authorities on whom fell the real burden regarding roads. Of the Imperial Rs. 530 lakhs only Rs. 100 lakhs represented the Road Fund while the rest i. e. Rs. 430 lakhs was a pure contribution to general revenues. This is obviously an excessive contribution from a single source for general purposes and it is specially to be deprecated as this contribution makes it impossible for the provincial and local authorities to levy a fair contribution from motor transport. This in turn means that the resources of these authorities cannot bear the burden of increasing road maintenance charges and the standard of this maintenance deteriorates, inflicting considerable injury on motor vehicle owners.

* *Op. cit.* pp. 14-17.

In the absence of the relevant data we cannot determine with any greater accuracy than indicated above what contribution motor vehicles are making in taxation to-day and whether the contribution made is commensurate with what they ought to bear in relation to road costs. As between the various classes of motor vehicles also the allocation of their separate contributions is not easy. It will, however, have appeared from what has been said above regarding the various tolls and taxes that the commercial bus or lorry bears less than its proportionate share of taxation. It has been pointed out that so far as the provincial taxation and the municipal wheel tax, in the majority of cases, are concerned there is no differentiation made between all the vehicles of the less than two ton class.

This is evidently against the established practice of motor vehicle taxation in most countries. The Salter Conference deliberately adopted the "ton mileage" criterion of taxation as the most important and in U. K. the petrol duty is counterbalanced by a graduated registration tax. In this Presidency some differentiation is made in the tolls which are usually levied on motor lorries or buses at double the rates paid by the ordinary touring cars. But the income from tolls, at least in the provincial system, is small as compared with the income from registration and license fees. In the case of public vehicles also the A and B permit fees are levied at the same rate on all vehicles irrespective of their size or weight. The private buses, lorries and trucks are not subject to even this additional taxation.

The central taxation is of two kinds, import duties and the petrol excise. The import duties are mainly on the entry of cars, tyres, tubes, and the accessories, spare parts, etc. This taxation is ad valorem and therefore, discriminates against the luxury type of car and not against heavy road destructive vehicles. The duties on tyres, tubes, etc. would be proportioned to the use of these articles and perhaps, therefore, roughly to road use. The petrol duty is strictly proportioned to petrol use but as the Salter Conference point out it is "a defective measure of varying use and wear of roads by different classes of vehicles."* The Salter Conference recommend its continuance for securing a just incidence as between different vehicles of the same weight and description but feel that some other

* Op. cit. Page 19.

means must be found to correct the inequality left between the different classes. The toll system makes a rough attempt at graduation but in so far as it is based on a day's use of the road it seems to work in some measure in favour of regular service commercial vehicles. No absolute or proportional figures of amounts of taxation by different classes of vehicles can be estimated but as most taxes are levied either at a flat rate or are proportioned to petrol, oil, tyre or tube consumption it seems obvious that the heavier vehicles using the roads constantly escape with a lighter burden than should properly fall to their share.*

(iii) *Improvement and Original Works*:—It is obvious that while the finances of the various authorities do not allow them to maintain the existing road mileage under proper repairs the construction of original works or any considerable measure of improvements cannot be undertaken by them. From the figures obtained by us through the courtesy of the Provincial Public Works Department it is apparent that there has been practically no extension of the road mileage made by the provincial Government during the last ten years. We have obtained, through the same source, figures of the expenditure on original works and improvements undertaken by the provincial Government in the districts of Poona, Sholapur, Satara, Ahmednagar and Kolaba. This expenditure for the year 1923-24 amounted to nearly Rs. 6.56 lakhs, for the year 1928-29, Rs. 2.26 lakhs while for the four years 1929-30 to 1932-33 it has on an average been only Rs. 1.25 lakhs p. a. The figure for the first year is abnormally inflated through special works undertaken in Poona itself and on the Pasarni Ghat near Mahabaleshwar. The original works grants continued to be comparatively liberal till 1926-27 since when, they have been drastically cut down and have reached during the past five years a practically nominal figure. Even with the larger figure of some years ago, except for

* Similarly the U. S. A. Joint Committee of Railroads and Highway users recommended that in addition to the petrol tax there should be levied on (i) passenger automobiles, a registration fee graduated according to weight or horsepower, on (ii) commercial passenger vehicles, a registration fee based on mileage operated and graduated according to seating capacity and on (iii) trucks, registration fee so that it will increase more than directly with weight. The U. S. A. Bureau of Roads has in its recent proposals regarding different types of taxation proceeded on the theory that the different kinds of highway users should pay for their use of roads in accordance with the extra strength of the facilities which each class would require.

the construction of some approach roads, no original construction had been taken in hand. And only in Poona and Mahabaleshwar had any improvement in the surface of the road, such as by ashphalting, been undertaken. In the main this expenditure was spent in the building of causeways at some important crossings, the improvement of culverts and drains and the strengthening of bridges. This was an absolutely essential improvement of the weakest points of the old road system if the increased motor transport was to be at all carried on. The Jayakar Committee had pointed to four main defects of the Indian road system. These were (i) the lack of a coherent road system "the natural result of an outlook which was concentrated primarily on local needs and was limited by the range of movement of bullock cart and the provision of short feeders to railways", (ii) the lack of bridges and crossings, (iii) deteriorating road surfaces, (iv) unsatisfactory condition of subsidiary roads connecting villages with main roads. Of these defects only the second defect was being partially corrected by the expenditure incurred by the provincial Government on original works and improvements during the last decade. Even here the provision of new bridges and causeways on a great many important routes is still lacking. The fourth defect has properly to be remedied by the district local boards; but the complaint of deteriorating road surfaces on provincial roads continues as sharply as before. The reason for this will be clear if the annual financial allotment to road repairs is examined. From the information made available to us it appears that the rate per mile of road at which the cost of maintenance and repairs (including special repairs) worked out in the districts of Poona, Satara and Sholapur was as follows :

TABLE 28.
Provincial roads, Repairs and maintenance expenditure.
(Rupees per mile).

District	Metalled and Bridged Road				Unmetalled and Unbridged Road			
	1923-24	1924-25	1931-32	1932-33	1923-24	1924-25	1931-32	1932-33
Satara. ...	588	676	544	566	206	234	197	186
Poona. ...	836	839	1147	1173	342	356	530	527
Sholapur. ...	...	325	356	371	...	300	315	291

This shows, even allowing for the fall in prices, a surprisingly low rate of increase during the decade considering the enormous increase in motor transport during that period. It is only in the case of Poona that a special increase in the rate of expenditure per mile is to be noted; but even here the inclusion of part of the road mileage of Poona city and cantonment (with the special road surfaces and the special costs incurred because of its being partly a seat of Government) unduly heightens the rate. It is not surprising, therefore, to learn that the District Engineering authorities are unanimous in holding that the rates of maintenance to-day are not adequate for present day traffic.

On the recommendation of the Jayakar Committee a Central Road Fund was established to put at the disposal of provincial authorities, funds which would enable them to correct the main defects of their road systems, especially the first defect given above i.e. the lack of coherence and balance in the system. The Road Fund was created out of the proceeds of an extra duty of As. 2 per gallon on motor spirit imposed by the central Government. The duty is collected and its proceeds credited to the central Government, but barring a small percentage kept in reserve, the whole of the revenue from the duty is distributed to provincial Governments according to a schedule fixed mainly in proportion to the petrol consumption in the provinces. The grants given to provinces are, however, not block grants to be spent by provincial Governments in any manner they choose. They are grants to be spent specifically for purposes approved of in advance by the central Government. The Roads Committee did not lay down any definite principles for the determination of projects to which grants could be given and thought that grants might be approved of for maintenance as well as for construction. In practice, however, maintenance grants have not been given and the monies have been allotted to schemes of improving or adding to important roads. The following passage makes clear the nature of the initial programme sanctioned.*

* Indian Road and Transport Development Association; Annual Report 1931, p. 4.

"Among the schemes approved for execution may be mentioned some 13 bridges or causeways on trunk roads in Madras, while here in Bombay the programme provides for the elimination of gaps by bridging or the construction of missing lengths of road in important trunk roads and amongst those included in the programme may be mentioned the Bombay-Ahmedabad, Dhulia-Nagpur (which is also being completed in the C. P.), Bombay-Agra, Bombay-Goa, and Bombay-Poona-Sholapur and other roads. Important trunk roads in Sind are also contemplated. In Bengal the extensive waterways render it difficult to have any wide-spread system of trunk roads and their programme is largely for the strengthening, widening and bridging of important roads in the Presidency. In the United Provinces a new road is to be made from Roorkee to Hardwar and certain inter-provincial and trunk roads are to be widened, strengthened and generally improved. In the Punjab the arterial road construction and improvement programme already in hand will be expedited while in the other Provinces schemes of development and improvement have been drawn up and will be carried out as funds permit."

The Petrol Road Tax came into effect from 1st March 1929 but it was not until April 1930, that certain amount of money having accumulated to the Fund, a Road Conference as proposed by the Jayakar Committee was held at Simla and the nature of the schemes to be financed from this source discussed. The recommendations of these conferences are subject to the approval of the Government of India on the advice of the Standing Roads Committee of the Central Legislature. The following table shows the position of the Road Fund as at the end of December 1933.*

* This programme naturally looked considerably into the future. The total cost of the initial schemes approved for the Bombay Presidency was, for example, estimated at Rs. 62,59 lakhs which is considerably more than what has been spent to date.

TABLE 29.

Details of the Road Development Fund, showing Distribution to Provinces, etc. and Expenditure therefrom as at 31st December 1933.

Name of Province	Amount allotted	Expenditure reported to the end of Dec. 1933	Amount diverted as a loan for maintenance or works in progress treated as expenditure whether fully expended or not	Balance with Local Governments
		Rs. (Lakhs)	Rs. (Lakhs)	Rs. (Lakhs)
Madras	48.58	42.82	.....	5.76
Bombay	57.54	36.29	16.00	5.35
Bengal	47.83	28.24	.....	19.59
United Provinces	19.39	6.83	.....	12.56
Burma	33.75	23.00	17.18	-6.43
Shan States	2.76	2.76	.....	.....
Punjab	23.63	12.76	14.97	-4.10
Bihar and Orissa	12.86	8.10	.....	4.26
Central Provinces	10.77	3.39	2.50	4.88
Assam	7.11	1.95	4.42	0.74
N. W. F. Provinces	6.78	4.02	.....	2.76
Total...	270.60	170.16	55.07	45.37

It will appear from this table that certain provincial Governments have been allowed to divert part of the sums allotted to them to uses other than expenditure on the sanctioned projects. The Bombay Government has taken the money as a loan for ordinary expenditure on road maintenance to be repaid when financial condition improves. This is another indication of the low financial condition of the provincial governments and their inability to maintain even the existing system of roads adequately. The road fund grant of this Presidency has been used for a few important improvements in the six districts viz—(i) improvements to miles 75-84 of Bombay-Poona Road; (ii) improvements to Wadkal, and Mahad-Poladpur roads (Ratnagiri).

The condition of the District Local Boards is not very different from that of the provincial Government. We have unfortunately no information whatever regarding new roads constructed within the last decade by the District Local Boards. But in any case it is unlikely that such new mileage is considerable. To a certain extent our investi-

gator was able to ascertain the extent of motorable roads in the various districts visited and it was found that no new important routes or roads had been added to those noted in the motor guide for 1923. This, of course, applies only to motorable i. e. mostly metalled roads and would not indicate whether or not the connecting roads with villages or other non-motorable roads had been improved. We have pointed out above how the expenditure of the District Local Boards has increased much more rapidly than that of any other authority. The difference between the provincial and District Local Board proportions in this respect is most probably due to the fact that the original construction and surfaces of the District Local Board roads being usually much inferior to that of the provincial roads the scale of maintenance in the former on account of increased motor traffic has increased much more rapidly than in the latter. The District Local Board expenditure on original work and improvements has also increased considerably. The published figures for District Local Board expenditure on roads are shown separately for repair and original works; comparing figures for the three years 1921-22 to 1923-24, with those for recent years we find that while the annual average expenditure on repairs has increased from approximately Rs. 73 thousands to Rs. 240 thousands, the average annual expenditure on repairs has gone up during the same time from approximately Rs. 374 thousands to Rs. 619 thousands. From such information as we were able to gather it appears that in this case also the preponderant share of this expenditure was taken up by improvement, strengthening or construction of bridges, causeways, culverts, drains etc.; though a larger share, than in the case of provincial expenditure, was also spent on the construction of new roads—metalled and unmetalled. In this respect, however, the position differed materially from district to district. In some cases financial conditions were comparatively satisfactory and District Local Boards followed a consistent policy of improving village approaches, increasing the number of motorable roads and bettering their surface. In other cases very little was done in these directions and with the coming of the depression road conditions distinctly worsened further and further.*

(iv) *Lines of reform*:—The main defects of the Indian system of road finance and taxation are firstly, the enormous contri-

* Vide remarks regarding the Bataagiri D. L. B. on p. 9.

bution to general revenues that is taken from specific motor taxation; secondly, the lack of resources and consistent policy on the part of the District Local Boards on whose activities depend mainly the maintenance and development of motor transport throughout the country side; and thirdly, the extremely uneven distribution of the burden of taxation as between the lighter and heavier vehicles. There seems to be no immediate way out of the first difficulty. The whole system of division between provinces and the centre in India results in robbing the provinces of all important resources while laying all the increasing responsibilities on them. Motor taxation is merely a special illustration of the general principle. And the present and the probable future condition of central finances is such that no considerable relief from this burden can be expected in the near future. Under the circumstances it is obvious that any ambitious programmes of road development by such means as the raising of loans are premature. Further road development by loans means the undertaking of a double burden of interest charges and considerably increased maintenance costs on current revenues. The above discussion should have made it clear that even the present system is not being adequately maintained by either the provincial or local authorities; it is out of question that these authorities should embark upon schemes which would increase their responsibilities.

So long, therefore, as relief from central taxation is not obtainable all efforts must be directed towards remedying the other two major defects pointed out above. Without increasing District Local Board expenditure on original works and maintenance charges the "lack of balance" in the Indian road system cannot be remedied. The institution of the Road Fund is going some way towards eliminating the first defect of lack of coherent road system pointed by the Jayakar Committee. But while thus the standard of efficiency of the big arterial roads is being still further increased nothing is being done to the secondary road systems, the feeder roads and the village approaches. Messrs. Mitchell and Kirkness state "In Poona District alone there were said to be some 230 villages of 1,000 population and over of which 100 are not on any public road."* And Poona has a larger mileage of District Local Board roads than any other district in the tract. No doubt Messrs. Mitchell and Kirkness

* Bombay Report p. 9.

state that the meeting at which they discussed this question thought the matter was of no great importance. So long as the agriculturists' produce moves over bullock cart tracks through bullock carts the matter is certainly not of great importance; but from the point of view of the development of motor transport it is an aspect of the question that cannot be neglected.

Apart, however, from development the inability of the District Local Boards to maintain even the existing system efficiently and effect the essential improvements regarding bridges and causeways in it, is a source of very considerable hardship to motor transport in general. It undoubtedly increases the per mile cost of running all vehicles, especially the heavy commercial vehicles. This problem of placing further resources at the disposal of the District Local Boards and at the same time removing the inequality of the incidence of taxation can only be solved by doing away with the present variety of taxes and taxing authorities and replacing it by one consolidated provincial tax. A move in this direction has already been made by a number of Indian provincial Governments.

The Jayakar Committee had expressed the opinion that a well-balanced system of additional taxation on motor transport for purposes of road development should include a duty on motor spirit, vehicle taxation and possibly also license fees for vehicles plying for hire. The Committee also recommended that the vehicle tax should be a provincial tax and should replace local taxes and tolls. Already before the Committee reported a provincial tax had been in operation in the Punjab. After the report of the Committee a provincial tax has been imposed in Bengal, Bihar and Orissa and the Madras Presidency. In all these provinces local taxes and tolls have been abolished. In the Madras Presidency, however, the District Local Boards still retain the right of levying license fees from commercial vehicles. In the provincial tax schedules taxation is graduated according to weight on commercial trucks and according to seating capacity on passenger buses. On private cars the taxation is graduated according either to weight or seating capacity. The burden of taxation, however, varies enormously from province to province. Thus for a bus carrying 16 passengers the annual tax would work out in the Punjab at Rs. 135, in Bihar and Orissa at Rs. 290 and in Madras at Rs. 480. It should be remembered that in Madras a commercial vehicle is in addition subject to a license

fee which may under certain conditions work out at anything from Rs. 400 to Rs. 2300, varying from district to district.* The Madras taxation is thus enormously greater than that in any other province. In U. P. there is no provincial tax yet levied, but a committee appointed by Government in 1932 recommended the adoption of such a tax with consequent abolition of local taxation. The scale of taxation recommended by this Committee was of the magnitude of the Madras provincial taxation; no local license fees were, however, contemplated. The Todhunter Committee appointed by the Mysore Government recommended the adoption of a much more complicated system of taxation. It recommended the retention of tolls though with numerous exceptions and recommended in addition a State vehicle tax, and for commercial vehicles a road tax graduated according to weight or seating capacity called the 'service tax' plus a mileage cess for the grant of limited monopoly along fixed routes. In provinces where provincial taxes have not yet been abolished the system of tolls and a variety of local taxes is still retained.

It is difficult to generalise from the short experience of the working of the Indian provincial motor taxes. In Madras where they are very substantial they are indeed, taken together with the local board fees, so high as to pass the point of diminishing returns. The fall in the number of commercial vehicles immediately after the imposition of the provincial tax was so large that the estimates of the provincial Government were entirely upset and it was not found possible to compensate the District Local Boards adequately for abolition of tolls. On the other hand in the other provinces where a provincial tax has been adopted the scale of taxation is so low that the income therefrom does not contribute substantially towards road maintenance and improvement expenditure of the provincial and local authorities. It is, however, undeniable that a lump provincial tax is to be vastly preferred to a series of local taxes and tolls.† It will be easy and cheap to collect and it can be intelligently

* Mitchell-Kirkness Report, Madras p. 19.

† The revival of tolls on provincial roads by the Bombay Government in 1933 was particularly inexcusable. For, it is obvious that the small additional sum obtained could have been easily raised by an increase in and a better graduation of registration and other fees on motor vehicles. And this would have meant almost no additional expenditure. The universal method of farming tolls makes it one of the most costly modes of taxation.

adjusted to road use. Tolls are notoriously vexatious and extremely costly in collection, while the element of leakage and evasion in the wheel taxes of most municipalities is enormous. An argument often put forward in favour of the retention of tolls is that this is the only way of taxing bullock carts which use the district roads to such a large extent. But it may be argued as against this that the profits of bullock cart traffic accrue largely to the agriculturists and its chief use is in the marketing of agricultural produce; and as the agriculturist contributes in the main to the general income of the District Local Board it is neither necessary nor equitable that this form of bullock cart taxation be retained.

The total income in 1932-33 from municipal wheel taxes and all the municipal and District Local Board tolls in Bombay Presidency including Sind was approximately Rs. 20 lakhs. To this may be added nearly Rs. 8 lakhs for the provincial tolls. In the Presidency (excluding Sind) according to the annual report on the Bombay city Police (1933) there are about 21,500 motor vehicles of which nearly 1000 ply for hire in Bombay city and about 4,000 in the districts. It is easy to see that if a scale of taxation analogous either to the Madras Act or the recommendations of the U. P. Committee is adopted a revenue which is larger than Rs. 28 lakhs could be raised from the Presidency alone. And if the extra revenue after compensating the municipalities and District Local Boards for loss of income from local taxation is utilised in giving grants-in-aid to co-ordinated programmes of road maintenance or development put up by the District Local Boards it will go largely towards remedying the lack of balance complained of by all authorities.

Note:—The announcement of the Government of Bombay regarding their new proposed motor taxation was made after the above was sent to the Press. As the new scheme seeks to abolish wheel taxes and tolls and to substitute, therefor, a general provincial tax, as recommended above, no special comment on it is required. It is proposed in addition to abolish the registration and renewal fees also. The rates of taxation proposed are lower than those of Madras and are near the level recommended by the U. P. Committee. On present figures the taxation should yield a revenue of well over Rs. 35 lakhs. This should cover adequately the loss from all the sources of taxation which it is sought to abolish, though it will not bring in any surplus for being distributed to the District Local Board

authorities. In the Government announcement regarding this new taxation measure it is suggested that if the "taxation yields more than the money now accruing from registration fees, provincial tolls and the tolls and taxation of local bodies upon motor vehicles, the extra revenue should be devoted in equal proportion to road repairs, in addition to the grants now made, and to the abolition of the tolls and wheel taxes now imposed by local bodies on animals and vehicles other than motor vehicles." We would suggest that the latter should have precedence over the former. As pointed out above the bullock cart owner already contributes a large share of revenue in other ways and further the savings that will accrue to local bodies from the abolition of the administrative machinery in connection with the collection of tolls and wheel taxes etc. will not be fully gathered unless these are abolished in toto. Our calculations would show that the immediate revenue from the proposed taxation would be enough to cover the proceeds of all the abolished sources of taxation, including taxes and tolls on all animals and vehicles. The fiscal reform should be immediately completed and the increased yield because of the increase in the number of motor vehicles should afterwards all be used towards increasing the road grants to local authorities.

APPENDIX

TABLE 30.

Provincial expenditure on roads

Year.	Maintenance and repairs.	Improvements and New Construction*.	Total.
1923-24	8,89,500	6,55,854	15,45,154
1930-31	11,15,370	98,372	12,13,742
1931-32	10,56,846	1,16,139	11,72,987
1932-33	9,05,713	1,37,855	10,43,568

* Figures regarding improvements and new construction expenses were not separately available for Ratnagiri division.

TABLE 31.

Income and expenditure of District Local
Boards for the years

1921-22, 1922-23, 1923-24.

Income and expenditure of District Local
Boards for the years

1930-31, 1931-32, 1932-33.

District.	Average income.	Average expenditure.		Average income.	Average expenditure.	
		Original works.	Repairs.		Original works.	Repairs.
Poona	13,737	7,915	74,941	13,417	10,185	1,32,035
Satara	17,410	4,871	1,01,679	24,273	30,131	1,61,439
Ahmednagar.	19,356	21,526	80,493	28,689	88,651	1,37,723
Sholapur	15,476	4,693	38,285	25,872	31,071	74,698
Kolaba	10,780	29,800	48,760	21,478	64,439	57,458
Ratnagiri	18,977	4,320	22,323	35,728	12,571	55,502
	95,733	73,531	3,73,981	1,49,457	2,37,948	6,18,905

TABLE 32.

District.	Income of Municipalities in six Districts for the years 1922-23, 1923-24, 1924-25.			Expenditure of Municipalities in six Districts for the years 1922-23, 1923-24, 1924-25.		
	Average			Average		
	Tax on Animals and Vehicles.	Tolls on Road- and Ferries.	Total Income.	Collection of Toll on Roads and Ferries.	Roads.	Total Expenditure.
Poona	19,725	12,868	32,600	3,070	1,83,569	1,86,660
Satara	10,034	11,844	22,302	1,421	19,507	20,929
Sholapur	6,765	28,012	35,107	2,053	64,389	66,443
Ahmednagar	1,170	4,563	5,733	1,025	9,036	10,661
Kolaba	7,959	9,738	17,697	3,902	16,608	20,505
Ratnagiri	2,479	7,094	9,650	2,027	10,068	12,095
	48,132	74,119	1,23,089	14,098	3,05,192	3,17,298

TABLE 33.

Income of Municipalities in six Districts
for the years

1930-31, 1931-32, 1932-33.

Expenditure of Municipalities in the six
Districts for the years

1930-31, 1931-32, 1932-33.

District	Average			Average		
	Tax on animals and Vehicles.	Tolls on Roads and Ferries.	Total Income.	Collection of Tolls on Roads and Ferries.	Roads.	Total Expenditure.
Poona	87,268	21,756	59,577	4,089	2,32,578	2,36,617
Satara	14,599	25,400	40,055	2,968	30,350	33,318
Sholapur	27,943	56,652	84,595	3,668	1,10,095	1,13,963
Ahmednagar	4,883	5,333	10,242	752	10,725	11,477
Kolaba	9,096	15,422	24,520	3,928	20,706	24,744
Ratnagiri	3,134	14,419	17,583	1,044	10,666	12,650
	96,918	1,38,982	2,36,572	17,519	4,15,230	4,32,769

CHAPTER VIII.

Voluntary Association and Government Regulations.

(i) *Bus-owners' Associations*:—A number of efforts have been made in all these parts to form associations or unions of bus-owners. These efforts have been of two kinds. Firstly, to form general associations of owners for looking after the interests of the industry as a whole and secondly, to form business combinations or unions. Attempts of the first kind have been few in number and none of them has yet succeeded. The most ambitious attempt that we know of in this direction was the Poona Motor Owners' Association which was founded in the year 1930 and which aimed at the starting of a Maharashtra Central Motor Owners' Association. This body evidently secured considerable public support initially and it seemed to secure adherence from representative and influential owners from all the six districts. But it made little headway after the first few months and soon died a natural death. The lack, even of efforts made in this direction, is most probably due to the absence of any considerable number of substantial men in the industry. The very large number of very small men no doubt prevents effective action being undertaken in this direction. The want of a central organisation must be keenly felt by the business; for, it has no means to represent its case authoritatively at times when measures of taxation or further regulation or control are contemplated by the authorities.

The actually existing organizations are all of the second kind i. e. those which are predominantly local in character and which aim at a certain amount of business combination. These may again be classified into two broad divisions. There are some which come into existence primarily for the purpose of regulating competition amongst the bus-owners; there are others which are merely in the nature of combinations for a defined purpose of a number of small business units into one larger unit. Both these types come into being as amongst those who follow certain routes of traffic. They are mostly route organisations. But this characteristic is more the peculiarity of the first type than of the second. It is also clear

that the first demands for its success the adherence of the large majority of those who follow a certain route while this is not a necessary condition for the success of the second. The first type comes into being when the large majority of those whose buses run along a certain route come together with a view to put an end to the purely competitive regime and organise themselves into one body. The traffic available is then sought to be divided over all the members evenly. A register of the buses is made out and the order in which the buses leave their points of origin is pre-determined. In most well-organized unions of this type the traffic is booked by the paid agents of the union and each bus leaves the stand at the direction of the controlling union official. The rates of fares are fixed both for the through journeys and for the intermediate hauls. The unions are usually keen on the drivers and conductors strictly following police regulations regarding overcrowding etc. and on their not either undercutting the schedule of fares or charging occasionally at an exorbitant rate. They, therefore, watch the working of the traffic and fares regulations by means of a small inspecting staff. All earnings are pooled and are periodically divided according usually to the proportion of the number of buses of each owner to the total. With good organization the unions are able to fix a rough time schedule of the running of union-buses and work it out. Generally all expenses are incurred by each owner on his own account, and no attempts at common or co-operative purchases of goods or services is made. These unions, however, arrange a number of times for the defence of members if prosecuted by the police for an offence against the motor vehicles regulations. They also arrange in common for that part of the miscellaneous expenditure which we have termed above as "secret distributional funds." It is obvious that the funds disbursed by a union in this manner would be much smaller than the total of the sums distributed if the owners were all acting independently. It is alleged that this fact creates difficulties in the formation and maintenance of unions and that the unions have on this account to be specially particular regarding the observation of regulations. Unions of this type can be very large and influential bodies.

For example, during the year 1932-33 there were two route associations, one with its headquarters at Poona and the other at Ahmednagar and having a total membership of nearly 30 buses,

which together controlled the traffic along the Poona-Ahmednagar route. These associations had then been in existence for over two years. Our investigator also noticed similar associations which had been functioning fairly efficiently for a period longer than a year over the following routes: (i) Sholapur-Akkalkot, (ii) Ahmednagar-Sangamner, (iii) Ahmednagar-Newase, (iv) Satara-Koregaon-Mhaswad. The above remarks apply chiefly to the Deccan districts. In the Konkan districts-Ratnagiri and Kolaba, conditions were very different in this respect. These are described in detail elsewhere below.

There are, however, a great many obstacles in the way of their successful working and their number at any time is small. They are also on an average short-lived. They come into being occasionally on most routes; on some routes, however, such unions have never been known while on others they are functioning with short or long breaks over a series of years. The main difficulties in the maintenance of such unions are (i) disputes over the distribution of earnings and the management of the roster and (ii) the ease with which outside competitors can enter any field. Usually a distribution of the earnings takes place when all the members have had a turn over the route. The office and other overhead expenses are deducted out of the total receipts before distribution. The arrangement of the roster involves many points on which a dispute is likely to occur. The initial settling of the order is a matter of much delicacy. There may further be certain days or periods of specially brisk traffic when all may desire to have their turn. So that the roster has to be arranged from time to time in such a way that every one gets a fair turn of the different types of traffic periods. Disputes regarding all these matters and charges of favouritism against union officials are common occurrences. Further, in the distribution of earnings a share may be claimed even if an owner's bus had been disabled and unable to take its turn. Unless, therefore, the advantages of the formation of the union are fully realised and are patent, the existence of these voluntary associations is ever beset with dangers. There are further a number of forces working against the unions. The most important among these must be mentioned as those who profit from the secret distributional funds. They naturally dislike organised and powerful unions and are ever willing to help wreckers. The other is the class of

agents who have been profiting from the disorganisation of owners. *

But the most important factors in making for the paucity and short life of such associations is the fact that no association of existing owners can guarantee a definite limitation on competition. It is true that once a union is formed considerable care is taken to prevent competitors from appearing on the route and that all members of the union take concerted action against new entrants in the field. Rate-cutting against intruders is freely practised by the union and the consequent losses are equally shared among members. The mere threat of such action on the part of a union is, however, not sufficient to keep out new people. There are many ways in which single interlopers can harass a union and struggle in spite of concerted action against them. Timing the departure of buses just before the departure time of union buses and slightly undercutting fares are practices which if continued over a number of days are enough to put into serious difficulties associations of the type of these unions. There are no reserves with these unions and their overheads handicap them in competition with single-bus owning outsiders. So that if a few keep out of the union, a few malcontents get out or if some outsiders newly come on to the route attracted by stable conditions established by a successful union, there is no powerful means by which the union could counteract the effects of their competition. And the adhesive force within the union is in no case strong enough to induce members to stick to the union and suffer loss of income for such time as may be required to crush outside competition. We have already made it clear how easy it is under present conditions for anybody to set up in this business, especially with a second-hand bus. It is this combined with the entire absence of any licensing or other regulatory control which makes it impossible for route associations to be formed and be run successfully.

The second type of unions which are merely business combinations are very numerous indeed. It seems that the small bus-owners find it useful to organise themselves into somewhat larger units for business purposes. A single bus-owner is a great deal handicapped in securing traffic and managing the entire business

* Vide above p. 58.

and finds it helpful to club together with others. And hence these combinations which go usually under the name of "services". A few owners get together, usually such as have been operating along a given route for some time and form a "service." This means that they have a common office, common agents for booking and canvassing traffic, a roster system among themselves and usually a common pool of earnings. The degree of combination in some cases may go even further. Our investigator noticed one or two cases in which not only were all receipts pooled but even all expenditure debited to a common account and only the net earnings distributed according to a fixed proportion among partners in the service. It is likely that in this case the combination gets some advantage from large scale purchase and common management; but the sharing of expenses is, in an association of this type, much more difficult than the sharing of earnings. Because the expenditure depends a great deal on the condition of individual buses and this is bound to differ from owner to owner. It is, therefore, usual to find that while in these services earnings are pooled, the expenses are incurred by each individual owner on his own account. These are then virtually combinations for the better securing of traffic. From the point of view of the organisation of the business the chief significance of this phenomenon lies in the modification it thus brings about in the situation of one-bus owners. For certain purposes, such as running on long routes the competitive power of the one-bus owner is thus increased.* These organisations are not very stable. In exceptional cases only have they any continued history over a considerable period. Disputes are frequent and the composition of the organisations constantly changing. Old combinations break up and new ones are continually coming into existence. But as a form they have considerable importance. Our investigator had noted during his tour the number of such combinations existing at most of the important places that he visited. Some of the data thus gathered is reproduced below.

* Vide above p. 33

TABLE 34.
Bus-Owners' Associations.

District	No. of Associations	No. of Bus-owners in the Associations	Total no. of Buses in the Associations
Poona	10	71	140
Poona City	(4)	(37)	(71)
Sholapur City	7	29	47
Ahmednagar	7	63	112
Satara	6	38	81
Kolaba	6	49	106
Ratnagiri	12	143	209
Sangli State	3	15	45
Total ...	51	407	740

The data relates to the period of the investigator's tour. It should be observed that the data is not exhaustive. It is quite likely that information regarding every combination was not obtained or that the particulars were in some cases not entirely accurate. The table, however, suffices to show the importance of these combinations. The importance of these services can also be estimated in another manner. Out of the 155 bus-owners who replied to our questionnaire 57 belonged to some type of union of association.

While it is true that these combinations mostly come into being along routes, this is not with them an absolutely essential factor as in the case of the route associations of the first type. It is thus found that the buses belonging to members of some of the services run along more than one route and at times owing to intensity of competition these combinations are found to move their members' buses from one route to another. As has been made clear above, these types of combinations have little significance from the point of view of bringing about more orderly conditions to exist in the industry. Some of them, however, sometimes go a little beyond the usual sphere of running a conjoint service and pooling traffic receipts. An attempt is made by some to regulate the timing of their services i. e. run the services not as the buses get filled up but to a fixed time schedule. Some services have been thus able to establish a reputation for themselves for regularity. Rates also are maintained in some cases at a steady level. This does not mean that the

services are in a position to withstand general movements of fare levels. But the better organised of them do not allow daily fluctuations and attempt to maintain a definite scale until competitive conditions render a general revision necessary. Some exceptional organisations also, try to pay special attention to passenger convenience and safety. Regulations are thus framed for the guidance of drivers and fines imposed for being drunk or disorderly when on service. One union had a curious regulation that the drivers of the union buses must slow down almost to dead stop when crossing each other on the road. This was meant, it was explained, to emphasize cautious driving. All the bigger of such combinations find it necessary to employ some travelling inspectors to check the receipts in fares by drivers and conductors and their general observance of traffic regulations. This is merely to suggest what the best attempt to achieve. The standard of actual attainment, however, is fairly low. The pace of competition is furious and it tends everywhere to lower fares as well as the quality of the service offered.

What has been said above applies in the main to conditions in the four districts of the Deccan. Conditions in the Konkan districts were somewhat different when our investigator visited these districts during the early months of 1933. Ratnagiri district then presented the picture of an industry which was well organised. There was one District Association for the whole district which claimed a membership of 143. The Association embraced within itself a very large proportion of the bus-owners in the District. It was not a route-Association i. e. it did not control the buses running on any route and it did not lead to business combination except in one particular. This was the business of insurance. The District Superintendent of Police of Ratnagiri had under discretionary powers conferred on him by the motor vehicles rules made third party and passengers' insurance upto Rs. 3000 compulsory. To lessen this burden the Association had come forward to guarantee all claims made against its members in respect of the insurance requirements. It had satisfied the District Superintendent of Police that it was in a position to meet all such claims and the District Superintendent of Police had agreed to waive compulsory insurance so far as members of the Association were concerned. The Association in return had asked for an initial

deposit of Rs. 20 per passenger seat and an annual fee of Rs. 12 from its members and it intended to levy such further annual contributions as later circumstances made necessary. It was found that for a year or two this arrangement had worked very well. The insurance liability undertaken by the Association entailing considerable responsibility the Association had to take steps to see that the drivers, cleaners, etc. took proper precautions to prevent accidents from occurring. For this purpose the Association employed a staff of inspectors who were daily on the roads inspecting the condition of the vehicles, checking contraventions of overloading and other traffic regulations and making enquiries regarding high speeds and reckless driving. The main work of the Association was in respect of the insurance business but it had under consideration a number of other activities. These were, giving credit facilities to its members for purchase of cars, regulating fares on various routes, etc. The actual work of the Association in 1933 was already considerable. The District Association embraced within it bus-owners all over the District. There were in addition route unions at the other centres especially at Vengurla, Chiplun and Deogad, for routes radiating from these places. The history of the Ratnagiri District Association after 1933 emphasizes the point we have made above regarding the lack of a cohesive element in the normal situation at present in the industry. While one officer as District Superintendent of Police had consented to give certain concessions to the Association members regarding insurance his successor refused to extend the facility the next year. This dissolved immediately the one factor that had brought so many bus-owners together and kept them in the Association. The moment this happened the Association began rapidly to disintegrate, its other activities began to suffer and today the lack of cohesion and the presence of competition are such that conditions in Ratnagiri tend to approximate to those in the Deccan Districts.

What is true of Ratnagiri is also true of the other Konkan district. In this district also insurance was made compulsory and here the District Superintendent of Police consented to treat the combinations favourably. Whereas in Ratnagiri there was one District Association for the whole district, there were for Kolaba a number of local unions. These were the Alibag motor union, the Mahad motor union, and the Goregaon motor

union. These unions functioned as general unions as well as route associations. They fixed fares, arranged a roster, had an inspecting staff and worked for a long time more efficiently than any similar bodies in the Deccan districts. They had come into existence before compulsory insurance and the privileged position accorded to them by the District Superintendent of Police for insurance purposes strengthened their hold on members. The privileged treatment was, however, subsequently withdrawn and this meant a great blow to the unions. At the same time external competition and competition of route unions amongst themselves caused further loss of strength. We were informed that some of the Kolaba unions suffered on account chiefly of the latter reason. At the terminal points of a route association's territory it comes in contact with unions working along other routes. Now it sometimes happened that along the neighbouring route there existed not one but two powerful and competing associations. In such a case discriminatory treatment by an association of either of these brought retaliatory measures in the form of competition along the external routes from the offended association. Thus a Mahad-Dharamtar union offending any of two Mahad-Chiplun services would find itself suffering along the Mahad—Dharamtar route on account of the competing buses of the offended Mahad-Chiplun union. The result of all these forces has been that latterly route associations have lost much of their former strength and except along some specially situated routes such as those round Alibag the conditions in Kolaba are almost as chaotic as in the Deccan districts.

(ii) *Government Regulations* :—The picture presented so far is that of a small scale, unorganised business, which is comparatively inefficient in the service it renders and which because of the intense competition that obtains within it is in the large majority of cases not paying to the class of owners. Not only is there no co-ordination as between the various means of transportation but also a lack of organisation as among the bus-owners themselves. Neither is there any attempt made by Government regulations to bring about any order in the industry. The present regulatory regime is of the most elementary kind. A series of miscellaneous regulations are in force but in some of the most vital matters such as speed limits, insurance or the

control of the numbers and routes of buses plying for hire no action has yet been taken by Government.

The main piece of legislation governing motor vehicles in India is the Motor Vehicles Act of 1914. This Act which replaced former laws of provincial authorities gave the provinces power to frame rules dealing with the licensing and control of motor vehicles. Rules have been framed by all provincial authorities and they deal specially with the registration of motor vehicles, their construction and equipment, the grant of licenses, plying for hire, speed limits and other provisions necessary for ensuring public safety. These rules, however, are in many important respects of an elementary character. In the Bombay Presidency there are a special set of rules regulating the use of motor vehicles let or plying for hire in all the Districts in the Presidency outside the City of Bombay. According to these rules the regulating authority in each district is the District Superintendent of Police. It is the responsibility of the District Superintendent of Police to examine and inspect vehicles and see that they fulfil the requirements of the rules regarding technical efficiency and equipment. Some interesting particulars in these rules may be noticed. The rules lay down that the free luggage carried shall not exceed 20 lbs. per passenger; they give the power to the District Magistrate to fix the hire or rates of fare; they prohibit the display of any advertisements either inside or outside the vehicle without the permission of the District Superintendent of Police; they provide for the licensing of agents and prohibit any person other than a recognized agent to sell motor tickets. It is also these rules that give discretion to the District Superintendent of Police to refuse to license any vehicle until the owner has taken out an insurance policy to cover passengers' and third party risks upto a certain minimum amount. Special rules regarding width, length, etc. of body are applicable chiefly to heavy motor vehicles i. e. those above two tons unladen weight; and these are not to be found in the tract surveyed. The points left entirely at the discretion of the District Superintendent of Police are chiefly such matters as the furniture and appointments of the vehicle body. We heard, however, some complaints from bus-owners even regarding the way in which this limited discretion was used by the District authorities. It is complained that the District Superintendent of Police may each year want to introduce some slight changes in body types

which, though they may be of little consequence to new owners, cause considerable expense and inconvenience to old owners. The same as regards the equipment of buses. While in some cases curtains may be made of any type of waterproof cloth in others a particular type would be insisted upon. While in all districts the number plate is of ordinary galvanised sheet in one the District Police Superintendent insisted on an aluminium plate. The cushions to be stuffed with cotton or coir may be insisted upon. While the regulations insist a minimum of 15 inch space per passenger a large body accommodating even upto 22 passengers to be fixed on a 1½ ton bus would be permitted in some districts while not in others. It is urged by the bus-owners that such seemingly capricious variations from place to place and from year to year should be minimised, and that where a variation is sought to be introduced a long period notice of it should be given to them. When practices differ in contiguous districts it is obvious that those who apply for countersignature through a neighbouring district have to look to the varying needs of the different police authorities, which again means unnecessary trouble and expenditure. It is complained that often, merely a change of officers means a considerable change in requirements in the same district.*

Another grievance of the bus-owners was that all vehicles were inspected only at the headquarters of the district. This means that all those stationed at places other than the headquarters are put to a considerable expense and to loss of income over many days. The owners have to go to the headquarters with their vehicles, drivers and cleaners and may have to stay there for three or four days. It is suggested—and the suggestion seems very reasonable—

* It is interesting in this connection to quote the following extract from the Annual Police Report of the Bombay Presidency for the year 1928: "The general control of public motor traffic throughout the Presidency is a problem calling for early solution. At present each district has its own particular fancies in the shape of local regulations relating to details in amplification of the public motor vehicles rules. These may in some cases be necessary but these variations do not tend to smooth the path either of the enterprising owner who wishes to ply his buses for hire in different districts or for the agents or the motor trade who have to vary their goods according to local official requirements. Again, the provision of adequate and convenient stands for public buses in some of the more populous towns is a matter which calls for early attention."

that the D. S. P. and his assistants should carry out the inspection at at least three or four important centres of bus industry instead of confining it to the headquarters. A glance at the map will show what large distances it is necessary for bus-owners to travel in some cases (upto even 100 miles) to get to district headquarters. The expense and trouble is, of course, greater in those districts viz. Kolaba, Ratnagiri and Ahmednagar, where the inspection by the D. S. P. is carried out twice a year, than in those (Poona, Satara, Sholapur) where it is carried out only once. The same inconvenience is felt also in the case of the inspection of the engine which is carried out by vehicle inspectors from Bombay. These also visit the district headquarters once a year at the time of the renewal of licenses and pass the vehicles as fit for road service. In a number of cases the D. S. P.'s inspection takes place at a different time of the year, thus further increasing the troubles of bus-owners. In this connection the bus-owners also suggest that as the giving of a countersignature is essentially a formal matter it should not be necessary for obtaining it to travel with the vehicle to the headquarters of the other district. A certificate from the licensing authority of the district where the bus is registered should be deemed sufficient for purposes of granting the countersignature and the permit to ply through the neighbouring district.

In the Annual Police Report of the Bombay Presidency for the year 1928 the Inspector-General of Police drew pointed attention to the problems regarding the regulation of motor traffic by putting in for the first time a long paragraph on the subject. In this he says, "One of their duties which is annually casting an increasingly heavy burden on the police is that of the licensing and control of public motor conveyances.....Except in a few districts near Bombay where the services of an expert from the Bombay Motor Vehicles Department are available the task of examining these vehicles for mechanical fitness twice a year and of testing drivers for "B" permits falls on Superintendents of Police and their Sub-divisional officers. This work demands careful attention and takes up considerable time. As not every officer charged with this duty has a bent for motor mechanics and some do not even drive a car the standard of reliability of both the public bus and its driver must necessarily vary in different districts..... More road patrols properly equipped to

supervise and control running traffic are also urgently required. It seems that at no distant date it will be necessary to set up a separate department to deal with all matters pertaining to public motor traffic in the Presidency." * A step in the direction indicated in this report was taken in 1929 by the inauguration of a small separate mechanical inspection staff for public motor vehicles. At present the mechanical inspection of all public vehicles before obtaining the issue or renewal of the "A" permit is undertaken by members of this staff who visit the headquarters of all districts annually.† If any person requires the issue of a new "A" permit before the annual visit of the Bombay vehicle inspector the vehicle has to be taken all the way to Bombay. In exceptional cases, however, the District Superintendent of Police may grant a temporary permit for a short period. The testing of drivers is still in all cases undertaken by the local Police authorities and except for the institution of the small mechanical inspection staff the situation has in no way improved to-day over that in 1928. The other elaborate proposals put forward by the I. G. P. were postponed indefinitely on account mainly of financial reasons and we find the following in the Annual Police Report of the Bombay Presidency for the year 1932. "The supervision of public motor traffic entails heavy extra duties on the police for which no staff is allotted, while the strength which is with difficulty made available is not adequate for its proper supervision, at the same time the force available for the primary duties of the police is weakened by these withdrawals."§

Among the powers given to the District Magistrate by the Bombay motor vehicles rules is that of fixing the rates of fares. These rates have been so fixed everywhere. But they are maximum rates beyond which a charge could not be made. In most districts the rate is fixed at 9 pies per mile. It is obvious that the rate fixed is really inoperative. The fares run at rates very considerably below than those fixed by the District Magistrate.

* Para 31.

† In the case of Poona the visits take place once every month.

§ Para 20.

CHAPTER IX.

Control and Coordination.

(1) *Aims and methods of control* :—We have seen above that the private cooperative efforts of busowners have failed to bring about any considerable measure of order, coordination or organisation as within the industry and that the existing regime of governmental regulation is also unable to effect this. It is generally agreed that public motor transportation must be put under a regulatory regime and in every country in the world efforts have been made to regulate and coordinate this development. The impetus in this direction has come primarily from railway authorities in most countries; and it is everywhere the losses resulting from the competition of motor transport that have led railway authorities—whether private or state—to demand the imposition of regulation on this development. In India the question of transport regulation and coordination has also been essentially visualised from the railway point of view. The Mitchell-Kirkness enquiry was entirely directed towards the question of rail-road competition and in the road conference held subsequently the spokesmen of the Government of India propounded a purely railway point of view. It was the representatives of the provincial Governments that declined to be committed to general resolutions regarding the necessity of regulation of road transport as they felt that these were framed by the Imperial Government in the interests of the railways. It is obvious, however, that regulation is no less necessary from the point of the bus transportation industry itself and that without outside regulation there is little hope of any order being established therein. It is useless to expect that the operation of pure competition will some time eliminate all the weak elements and leave others in an economic position; for, the supply of new, ill-informed, incompetent or ill-equipped entrants is continuous. It is no doubt difficult to give a definite meaning to such phrases as “the existence of wasteful competition in the industry.” These are things that cannot be directly proved. We believe, however, that our investigation into the profit-making capacity of the industry, the ruling rates of fares, the business

units, the turnover of owners in the industry, etc., substantially supports the statement that the business is at present uneconomically organised and that this state of affairs could be changed only by means of outside regulation.

There are four distinct points from which the question of outside regulation can be viewed. (i) bus-using passengers, (ii) the Government, (iii) the bus-owners, (iv) the competing transport agencies. For the protection of the bus-using public and the public in general are firstly framed the various police regulations regarding traffic movement. In connection with this aspect of the question we have already indicated the regulation of speed as the most important desideratum.* Another aspect of the problem of the safety of passengers and the road-using public is the collection of data regarding causes of accidents and the holding of public enquiries in cases of accidents of the more serious type. And there is the important question of compulsory insurance for which we have already stated the case in a former chapter.

From the immediate point of view of the state the most important aspect is that of road maintenance. Regulations regarding the type, the weight etc., of the vehicles are already laid down but we would suggest that looking to the strained condition of the finances of all governmental authorities responsible for road maintenance the volume of traffic on all inferior surfaced roads ought to be strictly regulated. It is unnecessary* to repeat here what we have already said in connection with the lack of balance in our road system and the finances of the District Local Boards. It is clear that an unnecessarily large number of vehicle trips and unsuitable weights have a great deal to do with the surfaces and the maintenance costs of the inferior roads; and that, therefore, a

* It may be emphasized that the inferior surfaces of country roads make stringent speed regulations all the more necessary. The rural roads have been built essentially to accommodate slow-moving bullock cart traffic and it has not been possible, nor will it be soon possible to improve them so far as to make them safe for very fast moving motor traffic. Cf. the conclusions reached under similar conditions by the New Zealand Transport Department. "(1) Generally, the rural roads of New Zealand are quite unsuited for high speeds as regards surfacing, alignment, bridges and protective fences. (2) In order that the risk to the motorist may be reduced, it appears that a definite speed limit should be imposed on all vehicles, using rural roads, and rigidly enforced." Annual Report for the year 1932, p. 20.

strict regulation of the number of public commercial vehicles plying on any road is a desideratum from the point of view of the road building authorities. In laying down such a regulation the capacity of every route to bear traffic should especially in Indian conditions be made an important criterion. We cannot afford to build up our roads to suit whatever vehicular traffic may come into existence; we must, therefore, regulate the type and extent of the traffic to the road system that we can afford to build.

From the point of view of the bus industry itself the regulation is desired of a type that will lead to orderly and fairly stable conditions as within the industry. It has now been definitely recognised everywhere that the working of the mere force of competition cannot be expected to create such conditions. The Interstate Commerce Commission of U. S. A. laid down that "unrestrained competition is an impossible solution of the present transportation problem." And the one definite recommendation on which a strong committee of independent experts of the International Chamber of Commerce agreed was the "impossibility of a system of unrestrained competition".* The reasons given by this committee for this conclusion are as follows. "It is clear that in the long run unregulated competition involving complete freedom to both road and rail as regards fixing rates and choice of routes would inevitably lead to a loss all round, and must result in a less efficient service and heavy budgetary charges in order to subsidize those transport services which are in the national interest" † While it is essential to attain co-ordinated and comparatively stable conditions as within the industry, it must at the same time be guaranteed that the industry does not become entirely closed and that exploitation of the public is not thereby made possible.

From the point of view of the other means of transport it is desired that regulation should make unfair competition impossible. In the Road conference and other places the case for Indian railways has been so put as to make their interests seem to be coincident with the national interests. It has been argued by the Railway Member, the Finance Member and others that any diminution of railway revenues means a diminution pro

* International Chamber of Commerce :—Road and Rail Transport (1933)

† Ibid p. 10.

tants of the national revenues and hence railway revenues must be protected at all costs. It is difficult to agree to this proposition. The proper coordination of all transport interests is certainly in national interests but the basis on which this coordination is to be brought about does not differ in the cases in which the railways are private or state-owned. The difference is merely one of legal status. In the latter case it happens that the profits of railway working accrue to the government of the state and not to any private individuals within it; and hence any depreciation of railway earnings would affect the state exchequer directly. This does not mean that with state-owned railways there is any special national interest involved in the maintenance of railway revenues. It is undeniable that where railways have been owned by the state governmental regulation of motor bus operations has usually been more stringent than elsewhere. But though this may be explained as being natural, it cannot be justified on any economic principles.

What are the primary qualities that a regulatory regime should possess? If it is to be in accord with the general competitive system and to serve well the conditions of a progressive industry it is obvious that a rigid type of regulation runs the serious danger of stereotyping the present set of conditions. This is certainly not desirable. Even when railways are national property it is not desirable that the development of motor transport be arrested and stabilized at a particular point for all times. Looking to the vast resources sunk in railway enterprise it may be reasonable to contend that the new competitive agency should not operate in such a manner as to upset the balance of the railway system immediately and that time be afforded for progressive adjustments.* But we start from the basic assumption that where new developments involve the changing of methods or narrowing of spheres of activity of old agencies then adjustments must, however, slowly, come about.

The system of regulation we contemplate must, therefore, be elastic and progressive. It cannot work by way of absolute prohibitions. Neither can it or should it work by way of monopolies. The granting of a monopoly, whether to the railway or to a particular bus company, of any traffic along a route would be disastrous to

* See, however, on this point Pison; *Economics of Welfare*. (1929) pp. 190-192.

public interests. Messrs. Mitchell and Kirkness point to cases in some Indian provinces of the working of monopoly.* Monopoly has been specially prevalent where the bus company has been made simultaneously responsible for the maintenance of roads. Monopoly may also be necessary to induce operators to start services on unremunerative routes. Such conditions do not, however, exist in this tract. Here all roads are maintained and should continue to be maintained by public authorities and there is no lack of entrepreneurs on the various routes; no justification can arise for the grant of absolute monopoly of any traffic to an individual or company. The abuses of the monopoly system are notorious. It is very liable to induce corruption in public workers and officials, it is very difficult to control adequately and the exploitation of the public cannot under it be properly prevented. The attitude of Indian railway authorities in the pre-motor epoch is one illustration of the way a monopoly reacts and smaller monopolies on particular road routes are likely to prove much worse.

Another suggestion put forward by Messrs. Mitchell and Kirkness is that of zoning.† The zoning limit that they suggest is one of 50 miles. For the tract under consideration, at least, this is highly impracticable. We have already pointed out above how a large number of routes are above this limit.§ A glance at the road map will also show how the tract is badly served by railways and how very long routes without almost any railway facilities exist within it. And even where the railway facilities exist an absolute regulation would seem in many cases obviously unreasonable. For example, the journey by rail from Poona to Satara involves travelling by rail for 78 miles and 10 miles by road and takes well over 6 hours. By road it is a straight bus ride of 69 miles and usually takes less than 4 hours. The comparative railway fares were in 1932-33 by rail Re. 1-9-0, by bus Re. 1-0-0. The journey from Poona to Ahmednagar meant a journey by rail of 99 miles and by road of 72 miles. The respective time taken was 7 and 4 hours and the fares. Re. 1-4-0 and Re. 1-1-0. Further in both these cases the roads being frequented, journeys by bus could be made at convenient times and at

* Op cit. U. P. Report pp. 24-25. Punjab Report ¶ 25.

† Op. Cit. Madras Report p. 22. Bombay Report p. 24.

§ See ante p. 30.

frequent intervals throughout the day while the railway trains are few and a majority of them inconveniently timed. It could not under the circumstances be deemed reasonable to prohibit passenger traffic on these roads to protect railway revenues. We are of opinion that any system of zoning, when attempted, will come up against difficulties of this type. It also necessarily introduces a rigid element into the regulatory system. Facts regarding the economic mileage of bus running, on which the conception of zoning is essentially based, are changing gradually and will, it seems, continue to change for some time. Railway practice may have been stereotyped and its development stabilized but this is far from being the case with the motor and hence a system of regulation basing itself on immediate facts for effecting a more or less permanent division of traffic between the two agencies is bound to prove obstructive to healthy adjustments later on. In fact it has been urged that the static condition of railway practice has during many past decades been a result of the lack of competition and that under stress of motor competition it has been proving itself capable of progress and fresh adjustment.

If then absolute monopoly or zoning is to be rejected, there remains the system of licensing which has by now been adopted by a great many countries of the world. It may perhaps be useful to indicate here the main features of the regulatory systems obtaining in some countries of the world.

(ii) *Regulatory regimes in foreign countries:— Great Britain:—* In Great Britain the situation is covered by two acts; The Road Traffic Act (1930) and the Rail and Road Transport Act (1933). By the former Act public service vehicles carrying passengers are divided into three classes: (i) Stage carriages, (ii) Express Carriages, (iii) Contract carriages; and no public service vehicle can be used as such on the roads without obtaining a license under any one of these categories from the Traffic Commissioners. All vehicles before they can be licensed have to obtain a certificate of fitness. The license granted by the Traffic Commissioners is a Road Service License and in granting it the Commissioners have to look to the suitability of the routes on which the service is to be provided under the license, the extent to which the needs of these routes are already served, the extent to which the proposed service is "necessary or desirable in the public

interest" and the "needs of the area as a whole in relation to traffic and the coordination of all forms of passenger transport, including transport by rail." Each applicant for a license has to submit with the application particulars regarding types of vehicles to be used and time-tables and the fare tables of the proposed service. The Commissioners are empowered to attach conditions to the license with respect to fare and time-tables to secure that the fares shall not be unreasonable and shall not wastefully compete with alternative means of transport and generally to secure the safety and convenience of the public. Both the minimum and maximum fares can be regulated under these powers. The Act limits the time for which drivers of public vehicles may remain continuously on duty and lays down that the wages and the conditions of service of the employees of the holder of a public service license shall not be less favourable to them than the wages which would be payable and the conditions which would have to be observed under a contract which complied with the requirement of any resolution of the House of Commons for the time being in force applicable to contract with Government Departments. Third-party insurance is made compulsory by this Act not only on public service motor owners but on private motor owners also. The Road and Rail Traffic Act (1933) governs the licensing of goods vehicles. It divides these licenses into the following classes: (i) public carriers' license, (ii) limited carriers' license, (iii) private carriers' license. All vehicles, before they can be licensed, must obtain a certificate of fitness. Each applicant has to specify the types of vehicles to be used by him and the facilities to be provided by him to the public and the area within which he will normally ply his vehicles. The licensing authority in granting licenses shall look to the "interests of the public generally, including those of persons requiring, as well as those of persons providing, facilities for transport." The conditions under which these licenses are granted are only that the vehicles shall be maintained in a serviceable condition, that regulations regarding speed and weight etc. of vehicles shall be observed, that the provisions of the Road Traffic Act regarding the drivers' hours of work shall be complied with and that certain current records as to hours of work of drivers, journeys and loads of vehicles shall be kept. It will be observed that a very great difference obtains between the regulatory regime of the goods and passenger vehicles.

U. S. A .:—In U. S. A. the regulation of public motor vehicles is undertaken by the various state authorities. There is no uniformity of regulatory practice and the differences in treatment and taxation are enormous from state to state. Certain general points may be noted. The large majority of states require a "certificate of public convenience and necessity" to be issued before a public carrier can operate on the roads. Bond or Insurance against third party risks is also an almost universal requirement. Another very common item regulated is the drivers' hours of work. In some states the various types of carriers are divided into various classes and dealt with separately while in others all carriers are put under one general type of regulation. It is not necessary to go into the details of the different state regulations. By way of illustration of the more developed type of American regulation the main provisions of the Alabama Motor Carrier Act for the regulation of common carriers are summarised below. The Alabama Public Service Commission is vested with the power to regulate every motor transportation company in the state ; to fix rates, fares, charges, all of which shall be just and reasonable ; to regulate and supervise accounts and prescribe a uniform system of accounts, which among other things shall set up adequate depreciation charges ; to require the filing of annual reports and other data ; to provide for the installation of safety devices, automatic speed governing regulators, mileage indicators, etc. No motor transportation company can operate a service, whether passenger or goods, without first obtaining a certificate of public convenience and necessity. Each applicant must state particulars regarding the vehicle and other equipment of his service, the routes over which it is desired to operate, the time and fare schedules, wherein the public needs the additional service and why. In granting the certificate the Commission shall specially consider the following points: whether existing transportation of all kinds is adequate to meet public needs ; financial ability of the applicant to give permanent adequate service ; its effect, expense and burden on the public highways ; advantages to the public of the proposed service. All rates charged by motor transportation companies shall be substantially uniform and no undue or unreasonable preference shall be extended to any party. They shall not exceed the maxima or go below the minima provided for in the published tariff schedules. No service shall be abandoned or discontinued without a permission from the Commission. The

Commission shall determine the nature of the bond or insurance policy required from each applicant. Details of all accidents must be reported to the Commission. The Commission shall enquire into all cases of alleged unfair competition. The working hours of drivers* are also regulated under this Act.

Belgium † :—The legislation in 1931 regulated only passenger transport services. No public passenger service can now run without a license. The enquiry before granting the license is specially directed towards the utility of the service, the route and the tariff schedule. The Belgian railways enjoy special protection. They can run motor services on any route or participate in existing services and they are practically exempted from the necessity of applying for a route license for any service they want to run. Competing motor services along lines parallel to railways are prohibited and railways can claim damages from unauthorised competing services.

Germany :—By the law of Oct. 1931, a license is necessary for the creation of all regular passenger services. Before granting the license existing enterprises are consulted and it is granted only if the service is not against public interest. The time-tables and fares schedules have to be published and the latter can be regulated by terms of the license. Insurance is compulsory. All goods services running over a route longer than 50 kilometers must also be licensed. Licenses are granted on consultation with existing services and looking to public interest. Uniform rates and fares are fixed by the Minister for the whole country. All transport at less than the fixed rates is prohibited. Insurance is compulsory. This licensing law does not apply to the railways which have the right of running passenger and goods motor services either by themselves or in cooperation with the postal authorities.

Austria :—The licensing law of 1931 has instituted a licensing regime for both passenger and goods vehicles. The maximum period of the license granted is 25 years which is reckoned as suffi-

* Detailed information regarding the various state laws is to be found in a complete code of Motor Bus regulatory laws by John M. Meighan. National Association of Motor Bus Operators, U. S. A. (1933).

† All the information regarding continental European countries has been summarised from the second part of M. Josse's report contained in *Les Problèmes des Transports*. Conseil National Economique. (1934).

cient for the amortisation of the capital sunk. Licenses are granted on enquiry at which other professional bodies must be heard. The Post and the railways have rights of priority in obtaining licenses. The fares and the time-tables must be approved by the licensing authority and published. Discrimination in rates and fares is prohibited.

Hungary:—A law of 1930 regulates all road transport of passengers and goods. All regular services can be created only by the grant of licenses. The maximum period for which a license may be granted is 10 years. The license is granted only if the service fulfils a real need of the public and does not harmfully compete with existing transport agencies of all kinds. Priority rights are given to the railway and postal authorities. Conditions of the license regulate many matters minutely. They fix time-tables and fare schedules and even impose the condition that only national vehicles shall be employed.

In continental countries in which competition had not yet been regulated e. g. Italy or Switzerland railways had already formed auxiliary or other types of road services and begun to meet the situation by way of modifying their practice—sometimes even closing branch lines and stations—and taking greater and greater advantage of road transport.

Canada:—The following extracts fairly describe the situation in this country.* “In all provinces where motor coach services have attained to any considerable magnitude there have been in recent years progressive, and in the opinion of the officials charged with the responsibility, fairly satisfactory efforts, to regulate the traffic in the public interest. Permits are granted which in effect are franchises to operate on the highways between fixed termini, and in general these permits are exclusive, but must be renewed annually. Schedules of rates or tolls to be charged are filed with the regulating authority and time-tables are required to be posted. The applicant must furnish insurance against injury to his passengers by negligence in operation and vehicles are subject to inspection from time to time.” “The Minister of Highways in that province, remarking on the result of the introduction of regulations by his department,

* Report of the Royal Commission on Railways and Transportation in Canada (1932). p. 97.

made this statement. "Immediately the law became effective a marked improvement not only in the vehicles but in the type of owner and operator was evident and to-day the service given on the various public vehicle routes licensed by the department is regular and dependable with few complaints of excessive speed or careless driving and with a minimum of accidents."

There is yet practically no regulation of motor truck traffic.

New Zealand :—The New Zealand Transport Licensing Act of 1931 also adopts a licensing system for passenger and goods transport. Two broad tests are applied before the grant of the license. (i) Is the proposed service necessary or derivable in the public interest? and (ii) Do the needs of the district as a whole in relation to passenger transport warrant the service? The licensing authority has also to consider the following points: Financial ability of applicant, time-tables and fares proposed, vehicles to be used, conditions of the roads on the routes, existing transport facilities and the transport requirements of the district. It is claimed that as a result of the working of this Act the improvement in the conditions of transport is of a striking nature.* A very large saving has been brought about in the total vehicle-miles run and this has meant a direct gain in vehicle operating costs and by way of reduced road damage. The 1931 Act intended that provisions similar to those provided for passenger transport should be applied to goods transport also, in certain controlled areas.

South Africa :—The Motor Carrier Transportation Act (1930) sets up a Road Transportation Board with the function of determining from time to time the volume, nature and classes of motor carrier transportation which shall be permitted to operate on any route or routes. The Board receives applications and issues certificates which are for specified routes or areas. The certificate may contain conditions regarding time-tables and scale of charges (including, where necessary, a minimum charge). In granting a certificate the Board has to consider the following points: The transportation requirements of the area or the route, the reasonableness of the charges proposed, the question whether the proposed service will adversely affect any other transportation facilities and whether it can be coordinated therewith in a manner which is

* New Zealand Transport Department, Annual Report for 1932 p. 17.

economically sound and advantageous to the public. It is said that this Act has "practically eliminated competition with the railways"*

(iii) *The character and provisions of the licensing system* :— Certain points emerge clearly from the above review. One is the well-nigh universal character of what may be called the licensing system. That is, wherever regulation is in existence it is by way of requiring public commercial vehicles to obtain a license from the authorities to run a service; and this license is almost invariably a route license, especially in the case of regular passenger services. The system of route licensing makes it possible to adjust closely the number of vehicles on the roads to the needs of that route judged from all points of view. In granting the license the appropriate authority looks not only to the safety of the passenger and the public and the character of the road surface but also to necessity and convenience of the public, i. e. usually the road and other transport services already available and the propriety of adding to them. Usually the granting of a license entails an enquiry, whether public or private, and the existing and competing means of transport are given opportunities of opposing the application. The license is limited to a period and is granted subject to certain conditions. Among matters covered by these conditions are usually included the time-table of the service and the fares charged. In a number of cases the minima as well as the maxima of the fares are determined by the license conditions. Insurance, especially third party and passenger, is usually compulsory. Another condition which is important but not universal is prohibition against discrimination. This is specially important as far as the carriage of goods is concerned. It is based on the same principle on which discrimination in railway rates between customer and customer is legislated against. It makes for, taken together with the fixation of rates schedules, an inelasticity in fares but is necessary if rates are to be assured at an economic level and is a necessary safeguard against unfair competition. The question of minimum conditions for the employees of bus-owners is also considered important. This is usually interpreted as conditions of service and especially hours of work; but the licensing authority may be empowered to regulate even the wages as in the Road Traffic Act (1930)

* *The Economist*, Feb. 4, 1933, "Control of Road Transport"

of England. The regulation of employees' conditions is, however, usually undertaken as a part of the problem of equalising the conditions of working as between road and rail services.

It will be observed that in a number of countries the character of the licensing system is not the same for passenger and goods vehicles. While, for example, in England the passenger vehicles are restricted to definite routes, this is not the case with goods vehicles. The Royal Commission on Transport which recommended this differentiation in treatment compared the goods carrier to the tramp steamer. The considerable development on these lines of goods carriers in England may justify the differentiation in treatment; but otherwise there seems theoretically no reason why the passenger and the goods vehicle should be subjected to differing regulations. The aims which the licensing system has in view are common to both and a general license over a large area is bound to create the same type of difficulties in the way of effective regulation in the case of the goods as in the case of the passenger vehicle. Under conditions of this tract specifically, the fact that the bulk of the goods traffic carried by motor is handled by passenger buses makes it necessary that both types of carriers be subjected to identical regulatory systems.

What can be claimed to be the merits of the system of route licensing? From the point of view of the industry its chiefest merit is that it makes indiscriminate competition within the industry impossible. Most of the present troubles arise from the fact that anybody with a few hundreds of rupees can set up as a bus-owner and begin to compete on any route that he chooses. This renders the situation of those engaged in the industry continuously precarious. Route licensing immediately eradicates this evil. It also reduces the numbers on a route to a manageable level. Initially some difficulty may be experienced in drastically cutting down the present swollen numbers but as we have made it clear once, the entry to the trade is not absolutely free, co-operative effort among the busowners is very greatly facilitated. It will thus remove the fundamental defect in the present situation. Without the creation of a monopoly it will make possible a stable and ordered state of affairs in the business. The license system could also be made to serve the needs of the road authorities. It is perhaps necessary to stress this aspect of the question more in

India than in other countries. The licensing authorities in granting licenses will have to look to road surfaces also. Though licensing cannot control the traffic of private motor vehicles, it may be presumed that this will not be important on the type of country-roads for which this consideration will have to be shown. If the licensing authorities are strict in granting licenses along the inferior surfaced rural roads the complaint of the District Local Board authorities mentioned above* will be removed to a large extent and some relief ensured to these bodies in their road maintenance charges.

It may be claimed that the route licensing system also serves to eliminate the existing unfair competition complained of by the other transport agencies. In India the competing agencies are two: (i) the bullock cart and (ii) the railway. There are no specific grounds on which the bullock-cart owner can urge unfair competition against the bus-owner. The route-licensing of goods trucks and the regulation of minimum rates will help the bullock-cart to a certain extent but there are no special means that can fairly be recommended for the further strengthening of the bullock cart position. The railways usually base their allegation of unfair competition on two grounds: (i) cheap use of road-way and (ii) freedom from regulation. The strength of the first charge depends entirely on whether the bus-owners pay adequately in taxation for their use of the public road-way. We have discussed this question in a former chapter and arrived at the conclusion that data is not available to answer this satisfactorily.† It should be remembered that the tax-burden to be taken account of, for this purpose is the whole tax burden and not only the provincial and local taxes; and though no definite reply is possible it may be presumed that motor-owners in this Presidency pay in total taxation adequately for the use of public roads that they make.

The railways in India are not in a position to complain to any considerable extent regarding the lack of regulation of road transport. The regulatory regime in India in respect of the railways is not itself of a very stringent character. The rates regulation which in most

* See above p. 14.

† Vide ante pp. 72-75.

countries is what railway authorities most chafe against has always been very ineffective in India. For the larger period of the history of railways in India the regulation of discriminatory or unreasonable rates has neither been attempted nor when attempted been effective.* Neither is there any special burden of taxation that the railways have to bear or any such obligations or "disabilities" as the liability to maintain roads over railway bridges which was complained against in England. The one burden that the State Railways as such have to bear in India is the maintenance of the "strategic" railways. But though the railways in India are not subject to regulations which are particularly onerous or rigorous in their working they are certainly regulated in matters regarding rates, preferential treatment, provision of special facilities to government, conditions of service of employees, accounts and returns, passenger safety, etc. And if the two modes of transport are to be placed on an equal footing somewhat similar regulation of motor interests would be necessary. In the licensing system all the important aspects of the necessary regulation could be provided for.

There is one aspect of railway rates which has been specially emphasized in India recently and to which some attention must be paid. It has been emphasized that the railway rates structure is peculiar, so far as the principle of "joint cost" is predominant in it; and that the very cheap rates at which the bulkier goods are carried are made possible only by the higher rates charged on better traffic. If then motor transport is allowed to take away the more paying traffic the whole structure of railway rates must collapse. This, of course, is not peculiar to India. As a fact the comparative absence of branch lines and light railways in India makes this problem much less serious here than elsewhere.† The contention is correct that the competition of motor transport in certain spheres is bound to lead to fundamental changes in the quasi-monopolistic situation on which the present railway rates are based. But this does not lead to the conclusion that motor competition should be eliminated and the railway mono-

* Vide N. B. Mehta : Indian Railway, Rates and Regulations.

† In France, for example, the results are specially noticeable. Vide : Conseil National Economique. Les Problemes des Transports. Rapport Preliminaire de M. Josse. pp. 60-63.

poly maintained unimpaired. To the extent that the fact of non-regulation gives motor transport an unfair advantage over railways the licensing system will remedy the situation. But if motor transport is in certain directions more economical the plea that the situation be specially protected for the railways cannot be accepted. The development of motor transport in any direction means almost necessarily some modification of the previous state of affairs. And a remedy like zoning cannot be accepted because (i) even in the present situation the economic limits of motor transportation vary from locality to locality and have nowhere been completely determined* and (ii) the limits even when determined would be changing so often that any rigid stereotyping of present conditions would be harmful in the long run.

Any clear-cut or permanent division of traffic between the two means of transport cannot, therefore, be attempted. This is the conclusion reached in almost all places where any considerable attention has been given to the subject and it is suggested that the most economic result can only be reached by mutual competition and co-ordination.† In most places it has been stressed that this can be best brought about by permitting the working of motor services by railway companies. For meeting the peculiarly difficult problem of services on routes parallel to the railways in France, for example, the Conseil National Economique recommended merely granting of a preference to railway authorities for running motor services along such routes.‡ The co-ordinated running of the two types of services by mutual understanding is also the solution offered by the Salter Conference and Dr. Moulton advocates for U. S. A. the formation of joint Transportation Companies.§ The

* The Salter Conference admitted that even in England this was a matter for a further detailed enquiry. *op cit.* p. 40.

† This system which is the result of motor transport regulation on the one hand and freedom to railways to run motor services on the other, the Committee of the International Chamber of Commerce call the system of 'Co-ordinated Competition'. The Committee point out that most countries are tending to adopt this system which is suitable for application in the case both of private and state railways and usually calls for fewest fundamental changes in existing transport policy.

‡ *Op-cit.* p. 23.

§ *American Economic Review*, Special Number, March 1934, H.G. Moulton:—
Fundamentals of a National Transportation Policy.

experience of the G. I. P. Auxiliary service over the Talegaon—Junnar route in this tract also confirms the same conclusion.* This, of course, would not help the railways as a technical unit but the railways as a business unit can more readily adapt themselves to the new situation in this manner. The technical unit will inevitably have to do this more slowly by improvements in technique and changes in the methods of working.

In India the way of co-ordination in this direction has never been barred and most railway systems have had the legal right of operating motor services if they so chose. The disability in this respect resting on a small class of railway companies till 1933 was also removed by an Act of the Imperial Legislature during that year. The Indian Railway companies have not yet shown themselves very willing to run motor services on their own account. The reasons for this may be many. In the first instance, as we have pointed out above, the loss that the Indian Railways have sustained hitherto on account of the development of motor transportation has been comparatively negligible. The detailed calculations of Messrs Mitchell and Kirkness and the annual budget statement for the Indian State Railways clearly indicate this. Indian railways have been built up essentially for long distance, through service. They have always tended to neglect local traffic and local needs; and branches and feeder lines have not been much developed. What, however, was a ground of complaint in former times may become a matter for thankfulness now and radical changes in the railway system of India may become unnecessary so long as future development clearly keeps an eye on road transport. The absence of any serious inroads into railway revenues may be one reason why railways have not undertaken motor services on their own account. But the main reason seems to be this, that under present conditions the railways would find it impossible to work a motor service in competition with the other bus-owners. The account of the general conditions of the industry given above must have made it clear that a motor service which has to bear the overhead charges necessary for a railway-run service would not be able to run except at a serious loss. The success even of the auxiliary service between

* Vide above, p. 75.

Salgaon and Junnar is due to peculiar circumstances and could not be assured on all routes. It is only when the conditions in the industry get stabilised that railways will be able to run services themselves or acquire financial interest in existing road-services or enter into agreements with them. Rail-road coordination by mutual understanding cannot come about until the conditions in the road industry are stabilised and important responsible units come to exist in it. It may also be necessary to provide for giving a preference to railways in connection with the obtaining of licenses to run services along roads, especially such as run parallel to existing railway mileage or in any other way directly affect the service on it. It would follow as a corollary that once the system of route licensing is established on the roads and the rates for road traffic regulated, the railway authorities will not be allowed to indulge in the under-cutting of specific local rates in order to put down road services.

We do not intend here to enter into a consideration of the details of the licensing system. What should be the proper authorities for the grant of licenses, what the areas over which they should operate and other analogous questions have no special connection with the data gathered by us; neither are they for our purposes of fundamental importance. We shall conclude by merely indicating what seem to us to be necessary parts of a licensing system for this tract. We have already indicated our opinion that there should be route licenses and that the passenger and the goods carrying vehicles should not be treated differently. The licensing system is the most elastic system of regulation; it has the merit by means of additions to or omissions from the conditions of the license of being capable of considerable modification easily as circumstances make it necessary. A general area license would be the least restrictive; but it will not meet the ends we have in view. Any area, as such, comprises of various types of roads and routes and with general licenses, regulation of traffic along particular roads will be rendered impossible. It has been urged that specific route licenses cannot be worked because of the variations in traffic needs from one part of the year to another. This, however, is not an insuperable difficulty. Where the traffic is distinctly seasonal, special seasonal licenses can be arranged for. Similar special arrangements can of course be made for

fairs and such other occasions. Barring these, in this tract at least, there seem to be no violent fluctuations in traffic needs which will make the adoption of the route licensing system worked in so many other countries, impossible.

What then are the conditions that should be incorporated into a license? It may be taken for granted that the regulations regarding the fitness of the vehicles will continue to be enforced and that a vehicle license or a certificate of fitness of vehicles will be a necessary condition precedent to a route license. Among items regulated by the license must be included the time-tables and the fare-tables of the service. From the point of view of determining both the competitive element and the wear and tear caused to the roads by the service it is necessary to ascertain when and how many times a service is going to be run. This will no doubt curtail slightly the very frequent services available to passengers on the more crowded routes, but this will be more than compensated by the convenient timing and the regularity of those that run afterwards. A time-table may also be the means of checking running at excessive speeds. The regulation of fares is, of course, absolutely essential if competition is to be regulated, and kept within fair bounds. And the regulation will have to be both of the minima as well as the maxima. When once conditions in the industry are stabilised the maxima may become significant, but at the beginning at least it will be the minima that will be important, whether in checking competition of the bus-owners among themselves or with the railway. Under existing conditions the regulation of the goods rates for the passenger carrying buses may prove a matter of some difficulty. It seems probable that under a route licensing system the passenger and the goods carrying buses will have to be sharply differentiated. At present in some of the districts in this tract a passenger bus may also be used as a completely goods carrying vehicle, under certain conditions. The goods vehicles are, however, not allowed to carry passengers and this is made a ground of complaint by some of them. The present facility afforded to the passenger vehicles of changing their role at will, will have to be abrogated. But it is doubtful whether all carriage of goods, such as on the top of vehicles of a few bags or baskets, can be completely prohibited. Such a prohibition will be difficult to enforce and will also greatly incon-

venience certain classes of agricultural producers on motor routes. Rates of such traffic will be difficult to regulate; but, perhaps, the absence of regulation in their case will not seriously matter as the total volume carried in this way can under regulated conditions be never very large. The question of a condition against discriminatory rates only arises in the case of considerable goods traffic. It will not be immediately necessary in this tract; though some provision will have to be made so that such a condition may be imposed when circumstances make it necessary. The problem of "private carriers" is also not yet important in this tract.

The governance of the conditions of employees is, in the interests of the employees, of the passengers and of the competing means of transport, necessary. The Bombay motor vehicle rules already provide for the adoption of regulations in this behalf by a District Superintendent of Police if he feels it necessary for his district.* Such an important matter should not be left at the discretion of the District Superintendent of Police and a Road Act should contain specific regulation on this point. The English Road Traffic Act of 1930 prohibits the employment of drivers for any continuous period of more than five hours and one half or for continuous periods amounting in the aggregate to more than eleven hours in a twenty-four hour period and enjoins that the driver shall have at least ten consecutive hours' rest in a twenty-four hour period. This section of that Act is enacted specifically for the protection of the public. A regulation on the same lines as the English Act will not be unsuitable for the purposes of this tract and will not weigh heavily on the class of bus-owners. The regulation of wages, on the other hand, does not seem to be called for. Wage-regulation has not been accepted for any other form of activity in India and there is no reason why bus-transportation should be thus singled out. It is, however, necessary that the inclusion of employees in motor insurance be made compulsory. The industry is not at present covered by the Workmen's Compensation Act and so long as this is so, some protection should be provided for those who are engaged in what proves to be one of the dangerous occupations.

* Bombay Motor Vehicle Rules, Rule 45 A. In some districts an attempt was made to regulate hours. It, however, failed chiefly because the limit imposed was unsuitable and rigid.

Another condition whose adoption we would urge is the obligation to keep certain records of journeys, volume of traffic, etc. and to make certain statistical returns. Such a provision will serve a twofold object. The keeping of records and their continuous checking will facilitate the working of regulations and it will also mark the beginning of a collection of facts vitally necessary for the study of the development etc. of the industry.

The experience of other countries has shown that the system of route licensing is successful in stabilising conditions in the industry and making possible a basis for coordination with railways. The Road Traffic Act has now been in operation in England since 1930 and the element of stabilisation brought about in that country is remarkable.* It is the goods problem that in other countries has presented the greatest difficulty. In India, however, the development of goods traffic is yet very small and regulation on the same lines as passenger traffic at this stage will most probably prevent the arising of complications in the future.

We have not attempted to tackle all aspects of road regulation here; and we are aware that the adoption of the route licensing system will perhaps prove to be merely an intermediate step to more ambitious schemes of regulation and coordination. We have, however, deliberately confined ourselves to problems that directly arose out of our study. At any rate, we feel that governmental control is absolutely necessary and that it should immediately be undertaken on lines similar to those that we have attempted to indicate above.

* Vide article in the *Statist* December 1, 1934. "Omnibus and Motor Coach"

CHAPTER X.

Summary of Conclusions.

In the following paragraphs we re-capitulate briefly the conclusions contained in our survey.

Statistics :—

1. The present published statistics would be rendered much more useful than at present if the following few changes are introduced in their presentation :

(a) *The Bombay classification of "heavy motor vehicles" should be immediately brought into line with that prevailing over the rest of India. (p. 18).*

(b) *In the statistics of the issues of owners' permits the issues of permits to new vehicles should be shown separately from the issues of new permits to vehicles because of a transference of ownership during the currency of the year (p. 19).*

(c) *The figures of transfers should be maintained separately for each district and the initial sales of cars may be shown separately from those of other transfers (p. 20).*

2. *Detailed statistics of accidents and their causes ought to be compiled and published in the police reports (p. 54).*

3. *Traffic surveys and Traffic counts are of the utmost importance from all aspects of the motor question. The determination of the lines of future development of the road system, the apportionment of taxation between different types of transport, the determination of the fair burden to be borne by motor Transport and the allocation of the total inter se, the regulation of the traffic on roads and the working of the route licensing system are all dependent on preliminary surveys being undertaken and later periodic collection of information. (pp. 16, 113)*

4. *Means should be explored in this connection of getting hold of toll-keepers' records and see what information can be extracted from them. (pp. 12-16, 113)*

Road Construction and Road Finance :—

1. The "lack of balance" in our road system i. e. the disproportion in length and condition of repair between the trunk and the main metalled roads and the subsidiary and feeder roads is the greatest defect of the Indian Road system. The present programme of priority of the provincial Government in road building is likely to intensify this feature (pp. 13-14-16)

2. This "lack of balance" is largely the result of the present condition of District Local Board finances (pp. 107-109).

3. The financial position of the District Local Boards in respect of roads has steadily deteriorated during the last ten years. Their expenditure on road repairs, maintenance, construction and improvements has increased rapidly, while their income from the taxation of animals and vehicles has not risen proportionately. Their grants-in-aid from Government have actually declined during recent years (pp. 104-110).

4. The provincial road mileage has not increased. There has been a certain amount of expenditure on improvements etc. on the provincial roads (through provincial funds and latterly through the Road Fund). But the maintenance expenditure on provincial roads has of recent years not been kept up at an adequate standard. (pp. 106, 115-119).

5. The increase in District Local Board road mileage cannot be ascertained. It has, however, not been considerable. The District Local Board maintenance expenditure is inadequate, especially in view of the initial inferior road surfaces of the majority of the District Local Board roads. *Motor Traffic presses with unusual severity on these and it is claimed that there should, from this point of view, be a limitation on the numbers permitted to run on these roads.*

6. Lack of bridges and causeways at many points in the road system still causes considerable inconvenience to motor traffic and retards its development (p. 116).

7. It is not possible with the data available to determine what is or should be the fair contribution to public revenues of specific motor taxation (pp. 111-15).

8. It is necessary that the data be collected and this be directly estimated on lines indicated by the U. S. A. Committee of Rail-Roads and Highway users (p. 113).

9. There is ground for the presumption that motors as a whole are at present paying adequately. And taking count of all taxation—central, provincial and local and especially the provincial tolls—it may be maintained that commercial vehicles are making a fair contribution for their use of the road-way.

10. The main defects of motor taxation in this Presidency are the enormous contribution exacted by central revenues and the comparatively light taxation of the heavier vehicles as a class.

11. *The abolition of wheel taxes and tolls and their substitution by a graduated provincial tax is an essential reform* (pp. 116-17).

12. *Research must be undertaken into the technical problems regarding cheap road surfaces for the minor roads* (pp. 122-24).

Unit of organization :—

1. Nearly half the buses in this tract are owned and operated by single bus owners (p. 23).

2. Though it is not possible to estimate closely the number of owner-drivers it is likely that their proportion is quite substantial (p. 29).

3. The variations in route mileage and the daily mileage travelled per bus are very large. The variety of conditions in the tract makes for these variations. There is no distinct upper limit to the length of the route run except that of the avoidance of a stay at another place overnight. The formation of associated services makes it possible for even single-bus owners to participate in long distance routes (pp. 33, 133).

Sales and Finance :—

1. Instalment sales of new buses seem to have diminished since 1931. (p. 33)

2. ~~It seems~~ however, to have been an increase in the volume of instalment business in second-hand cars (p. 38).

3. There is a tendency on the part of one type of secondhand dealer to progressively make easier the terms of instalment sale. (p. 40).

4. This makes it very easy for any person—especially belonging to the driver class—to enter the industry as a bus-owner (p.43).

5. A large percentage of money required for purchase of cars is borrowed. There is a tendency in some parts for the business of money-lending and the dealing in cars to be combined (p. 44).

Traffic :—

1. No statistics are available regarding the density of traffic. If Railway or Government authorities have collected any such information it should be made public (p. 46).

2. The bus equipment in the tract as a whole is unsatisfactory. Breakdowns owing to defective equipment and a lack of mechanical knowledge on the part of the drivers are frequent (p.50).

3. There is an almost entire absence of time schedules in the running of buses (p. 51).

4. *Attempts should be made to ascertain the reasons responsible for motor accidents* (p. 54).

5. *It should be made obligatory on all owners of public commercial vehicles to report all accidents to the authorities* (pp. 53-55).

6. *Public enquiries in the causes of serious accidents, especially those connected with public commercial vehicles, are essential* (pp. 53-55).

7. *The regulations of the hours of drivers is also important in this connection.*

8. *Rigid speed-limits must be laid down for public commercial vehicles and speed-governors installed, if possible.* (p. 56).

9. *It should be made obligatory on bus owners to maintain their speedometers and mileage indicators always in order* (pp. 53-55).

10. *Third-party, passenger and employee insurance should be made absolutely compulsory for all public commercial vehicles* (p. 56, 97).

Motor Stands :—

In view of the small units in the industry, public stands should be provided by Municipalities and District Local Boards at all important places of traffic and they should be properly equipped with shelter and other conveniences (p. 57).

Goods Traffic :—

1. The development of goods traffic by motor is obstructed by the total prohibition of goods carriage in some districts, by restrictions on the use of heavy commercial vehicles and by such other regulations as the closing of ghat passages at night time or during some months of the year (p. 61).

2. The number of commercial vehicles carrying goods for hire regularly is very small. The bulk of goods carriage is sometimes as one-way traffic by some passenger buses during some seasons and mostly as extra in the ordinary passenger services (p. 61).

3. The goods traffic by motor has developed in perishables especially over the 15-20 miles limit and in all sorts of goods offered in small convenient lots for short ranges. In goods placed in the highly rated classes by the railways it has made some head-way even in the long distance traffic (p. 72).

Competition with other forms of transport :—

1. The competition with railways is specially marked in passenger traffic. The range of effective competition varies, being shorter for broad gauge and conveniently aligned lines and longer for meter or narrow gauge and badly aligned or badly served lines.

2. The total loss of income to railways on account of both goods and passenger traffic is not yet considerable (p. 73).

3. The motor bus has not yet gained any important footing in the seasonal carriage of bulk agricultural products to the markets. It, however, competes with the bullock carts in the carriage of perishables or of goods of all sorts in small lots.

4. The displacement of the bullock cart by bus in cities especially in Bombay has dealt a heavy blow to peasants in some parts of this tract (p. 76).

Ferries :—Bus-owners complain that ferrymen are at times not readily available and also sometimes charge exorbitant rates. (p. 90).

Earnings and expenditure :—

1. The rates of fares differ widely. Railway competition sets a maximum of 6 pies per mile for short and 4 pies per mile for long distances. The level of fares is chiefly indicative of the element of competition on the route. The presence of keen competition is usually indicated by a fare below the 4 pies level and below 3 pies the competition may be taken to be very severe. (p. 87).

2. Free seats and certain items of miscellaneous expenditure levy a substantial burden on the bus-owners. (p. 85).

3. Depreciation, Interest and Insurance are usually not allowed as costs by the average bus-owner but must be so allowed.

4. Costs of bus running vary widely from individual to individual and from route to route. The average cost of the cases examined for the times allowed for, comes to about As. 3½ per mile or allowing for interest, depreciation and insurance to about As. 4½ per mile. This would indicate a minimum range of average fares from about 4 pies per mile per passenger to 6 pies per mile as being economic for the industry under present conditions in this tract (p. 94).

5. There is a large turnover of busowners in the industry, as shown by the volume of second-hand car business and the small proportion of people of longstanding in the industry. (p. 100).

6. A comparatively small proportion of even the more intelligent and better organised succeed in making any profits in the business at present. Profits are usually made only on the more sheltered routes.

Associations :—

While entry to the business is easy and free as at present there are innumerable difficulties in the way of the formation and working of route associations. And such associations are not likely to be successful except under special circumstances (pp. 131-33).

Government Regulations :—

1. *The differences in the requirements regarding equipment etc. from district to district and from year to year are unnecessarily vexatious to the bus-owners and should as far as possible be minimised.*

2. *Buses should be inspected for all purposes not only at the headquarters of a district but also at other important centres of bus-traffic in the district (p. 139).*

3. *It should not be necessary for obtaining a countersignature to travel with the vehicle to the D. S. P. of the district from whom the countersignature is required. The license of the contiguous district's D. S. P. should be a sufficient guarantee of the road-fitness of the vehicle (pp. 139-40).*

4. *The control of motor transport entails at present a heavy burden on the Police. It also does not provide enough expert assistance for the testing of drivers and the mechanical fitness of cars. It seems necessary to create a special department or a special branch of the police to be entrusted with road traffic problems. (p. 140).*

Control :—

1. *The creation of monopolies along specific routes is both unnecessary and undesirable in this tract (p. 147).*

2. *Zoning as a means of division of traffic between road and rail is an impracticable measure (pp. 146-47).*

3. *All objects of a regulatory system can best be achieved under a route license system for both passenger and goods services and by encouraging the co-ordination of rail and motor services under such a system (p. 153).*

4. *In the event of the adoption of such regulation undercutting of fares etc. must be given up by the railways also (pp. 155-57).*

5. *Under route licenses the matters to be controlled should be time-tables, maximum and minimum fares, and the hours of employees (p. 160-64).*

6. *The maintenance of records of journeys etc. and the filing of certain periodical returns should be made obligatory on the bus-owners.*

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