

Chapter 13

ROAD COMMUNICATIONS

Transport is undoubtedly one of the major factors in living today. Not only is it essential for mobility, but the money expended on it is reflected in the cost of food, clothing, housing, public utilities, recreational pursuits and practically everything necessary for our sustenance, convenience and comfort. Its efficiency has a material influence on the standard of living. It has frequently been referred to as the life-blood of the community, and just as the health of the human body is largely dependent on the circulation of blood through its arteries, so is the economic and social well-being of the modern community dependent in no small measure on the facilities available for the circulation of people and commodities.

When the cost of goods and services is analysed, it is found that a very large part of all the money earned is expended in transportation costs. In the financial year 1951-52 the people of Victoria spent about £253,000,000 on transport, either directly or as part of the cost of commodities. Road transport costs accounted for 85% of this total. The increasing proportion of total income expended on road transport is shown in diagram 52.

For the metropolitan area, the total cost of road transport since 1946 is shown in diagram 53. It has risen to the record figure of £112,000,000 for the year 1951-52. Estimates show that the greater portion of this amount (approximately £92,000,000) was spent on the distribution of goods and the movement of people engaged on their normal work, and was therefore directly reflected in living costs. The remaining portion has been spent on transport to work, for shopping, and for recreation.

The relation to other forms of transport may be seen from diagram 54 which shows the average weekly amount spent directly and indirectly on transport by each wage earner.

A study of these figures and a review of past trends indicates that as we improve our standard of living and place greater value on the time of the worker, we must place greater emphasis on those forms of transport which prove most efficient under present-day conditions. In this regard motor transport is proving itself, and its use must be considered as synonymous with prosperity. So far as our planning is concerned, it is not unreasonable to plan for the time when practically every family will own a car and commercial vehicles will have increased in like proportion.

Apart from main country roads which come within the jurisdiction of the Country Roads Board, each individual municipal council in the metropolitan area is solely responsible for the roads within its territory. As the responsibility of the Country Roads Board ceases near the outskirts of the urban area, there has been no authority responsible for developing a comprehensive and co-ordinated arterial road system for the metropolitan area. Therefore to enable decisions to be made as to what land should be reserved for road purposes in the planning scheme, it has been necessary to undertake investigations which would normally be the responsibility of a main road authority.

The problem is not merely to determine what roads are needed today to ensure free movement of traffic, but what roads are likely to be needed in the future when the city is larger and motor transport is more freely used. Therefore, not only was it necessary to study traffic conditions today, but also to estimate the volume of traffic and its distribution in the future.

The general procedure which was followed in the survey and analysis of the problem was as follows:

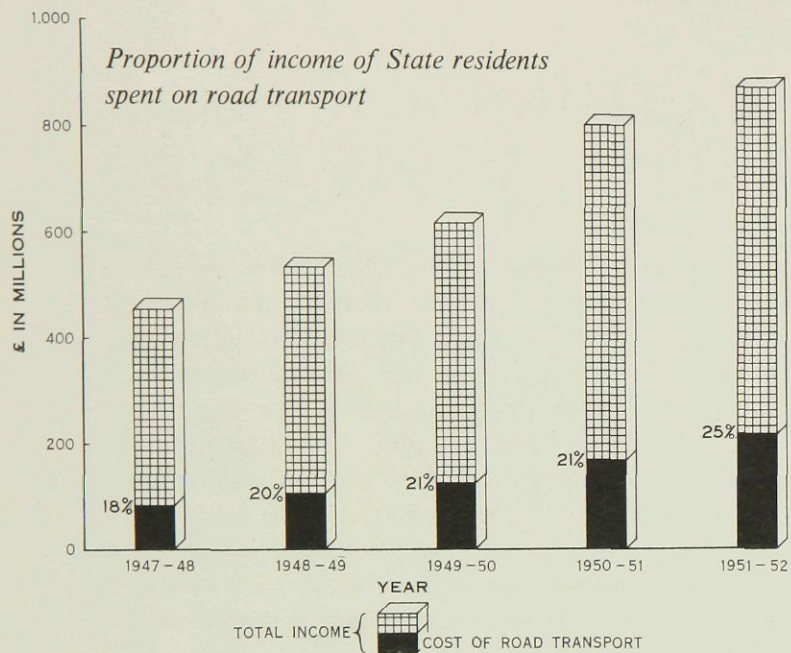
- (a) Survey of existing traffic.
- (b) Relation of overall traffic to total vehicle registration.
- (c) Relation of existing traffic to existing land use.
- (d) Estimation of future vehicle registrations and future overall traffic.
- (e) Estimation of future traffic resulting from the planned land use.
- (f) Survey of existing main roads regarding widths, abutting land use and suitability for carrying the future traffic.

The investigations have been designed to ensure that the planned system of road communications is based on realistic estimates of future traffic needs, so that the reservations made will permit the development of a road system commensurate with the importance of road transport to the community, but because of the high property values of a metropolitan area so that unnecessary or excessive reservations are avoided.

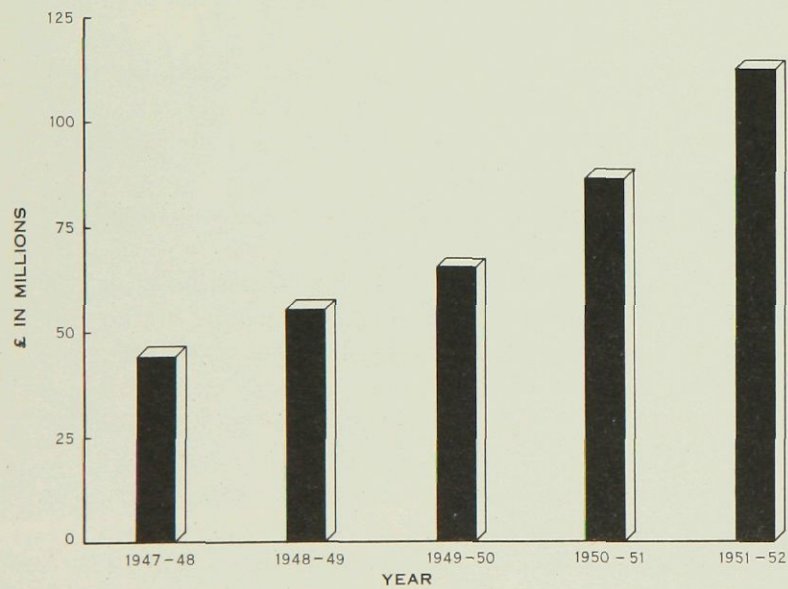
EXISTING TRAFFIC CONDITIONS

Measurement of Road Traffic

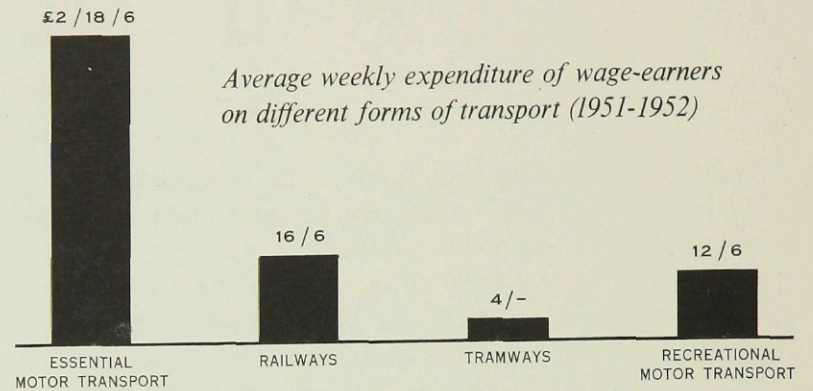
The first essential in traffic studies is to have some unit of measurement that is readily applied and which will give



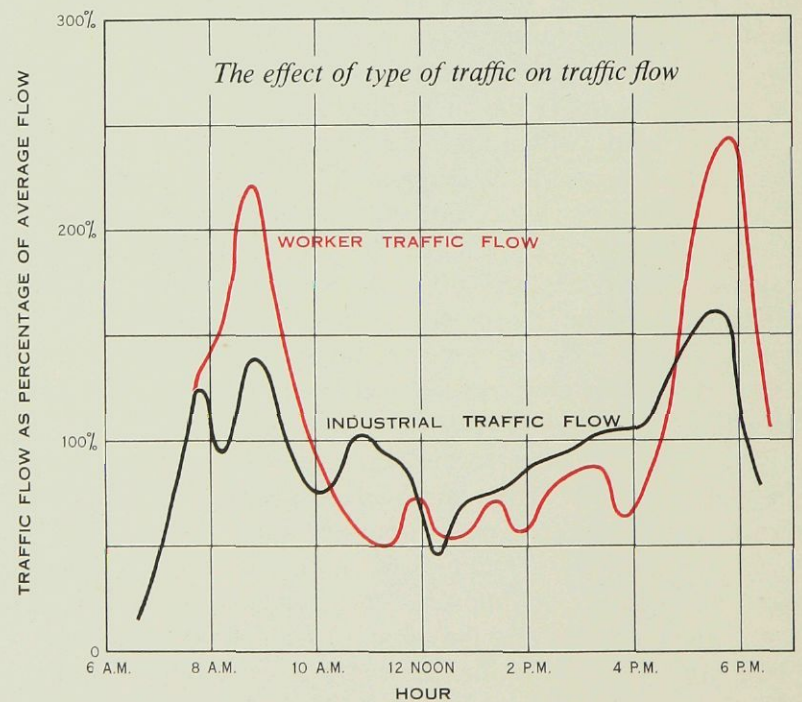
52 ROAD TRANSPORT AND STATE INCOME



53 COST OF METROPOLITAN ROAD TRANSPORT



54 WEEKLY EXPENDITURE ON TRANSPORT



55 TYPES OF TRAFFIC FLOW

EXISTING TRAFFIC CONDITIONS

a reasonably true indication of conditions on the road. Traffic census results previously obtained in Victoria have usually been expressed as the number of vehicles in the period of 12 hours of maximum traffic movement, and this unit has been adopted in these studies. However, in its use the following should be remembered:

- Where the traffic is largely industrial, the peak hourly flow in both directions is approximately 15%, and in one direction approximately 9% of the 12-hour flow (as an example see diagram 55).
- In traffic composed largely of private cars carrying workers to and from work, peak hour traffic in one direction may be as high as 15% and in both directions 20% of the total 12-hourly flow (see diagram 55).
- In studying the economic aspects of road proposals the total daily traffic should be considered. In a 24-hourly count on Princes Bridge in 1929 the total traffic was 41% more than in the 12 hours from 6.30 a.m. to 6.30 p.m. This is exceptional. Generally a 20% increase on the 12-hourly flow has been assumed.

In 1924 and 1926 a suburban and city traffic census was taken by the Metropolitan Town Planning Commission. These results were published in the Commission's report of 1929. In 1947 a census was taken by the Town and Country Planning Board in conjunction with the Melbourne City Council. The general results were published in an appendix to the Town and Country Planning Board's report of 30th June, 1947. Through the courtesy of the Town and Country Planning Board, unpublished information obtained during this census was made available for our study. The results of this census have formed the basis of traffic studies.

Growth of Traffic

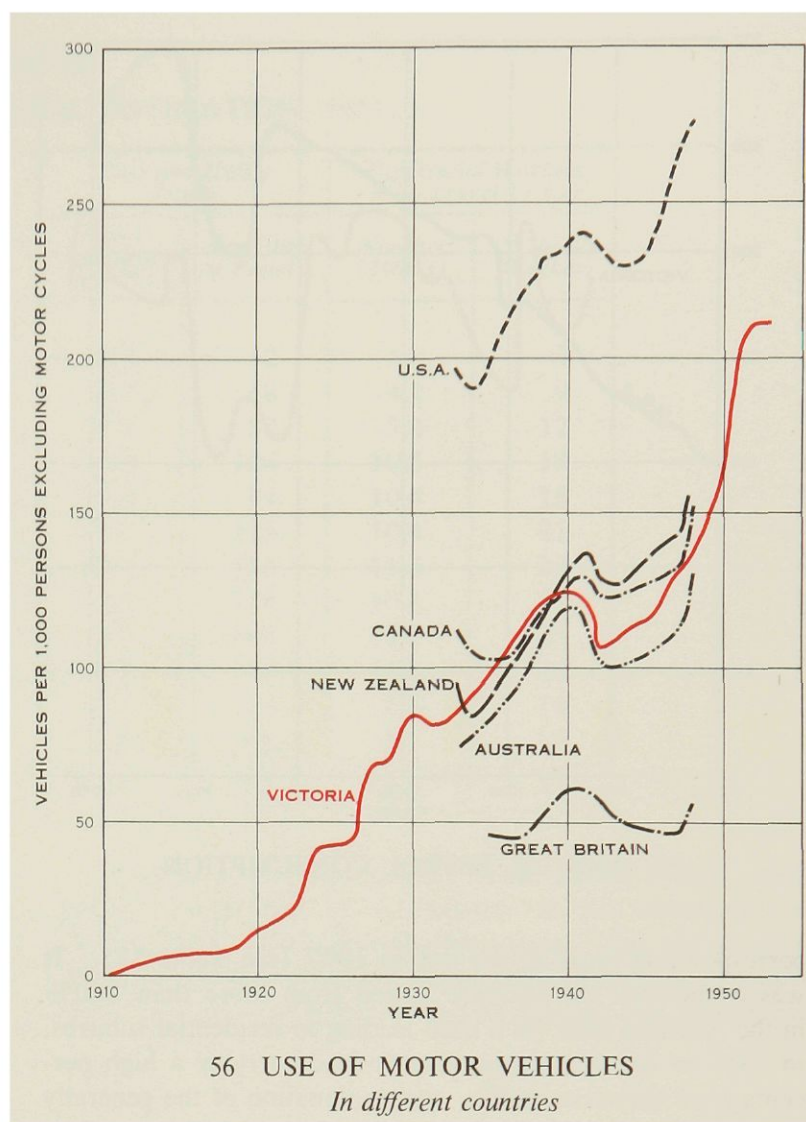
As a result of the many advantages of motor vehicles, road traffic in Melbourne has grown enormously during the past 30 years. Table 81 shows the number of vehicles crossing the boundaries of the central business area as obtained from the traffic census in 1924, 1926 and 1947 and from sample counts at various stations in 1951.

Table 81
VEHICULAR TRIPS ACROSS BOUNDARIES OF
CENTRAL AREA

Year	Vehicular trips in 12 hours
1924	96,000
1926	126,000
1947	186,000
1951(Estimated)	298,000

Thus the traffic in the inner area has increased by approximately 300% in 27 years, during which period the metropolitan population increased by only 53%.

For comparison with the growth in other countries it is necessary to study vehicle registration. Diagram 56 gives the number of registered vehicles for each 1,000 of population in various countries taken from available records. It



shows that over the last 20 years in Victoria, Canada and New Zealand there have been approximately half, and in Great Britain one-quarter the number of cars in relation to population that there were in the United States of America.

A study of the increase in petrol consumption is also revealing. Diagram 57 compares the average consumption of petrol by vehicles in Victoria and the United States. Before the war American consumption increased to approximately 600 imperial gallons for each vehicle annually and since that time it has fluctuated sharply as the result of the war and subsequent economic conditions. Victorian consumption has been very sensitive to economic conditions and was naturally affected by the war, but there appears to be no evidence of a long-term trend either upwards or downwards. Thus, for practical purposes, it may be assumed that in Victoria traffic is proportional to vehicle registration. Further evidence on this point is given by diagram 58 where the traffic over city bridges as counted by the Police Department shows reasonably constant relationship to the motor registrations.

In 1951, in order to relate traffic to the results of the Gallup statistical survey, sample counts were taken at various points and compared with traffic at those points at the