

THE NATIONAL TRAVEL SURVEY 1977-78:
SOME PRELIMINARY RESULTS

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ABSTRACT:

This paper describes various preliminary results obtained from a survey of non-urban passenger travel which is presently being conducted by the Bureau of Transport Economics (BTE). This survey is known as the National Travel Survey (NTS) and commenced in June 1977. The paper presents a statement of the survey objectives and an outline of the study methodology. Preliminary results obtained from the first three months operation of the NTS are presented. These statistics cover all modes of transport, all trip purposes and are presented for the whole of Australia. Statistical accuracies associated with these results are also provided.

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INTRODUCTION

The Bureau of Transport Economics (BTE) has been aware for a number of years of the scarcity of extensive and reliable data on non-urban travel patterns in Australia. This forum has as its theme 'Real Solutions to Real Transport Problems'. The scarcity of reliable information is definitely a real problem facing transport planning agencies in this country. This paper outlines what the authors consider to be a significant contribution towards finding a real solution to that problem.

In 1975 the BTE commenced planning for a national survey of non-urban passenger travel. This survey, known as the National Travel Survey (NTS), evolved as a result of the continual frustrations which resulted from the lack of reliable and contemporary data required for various studies being undertaken by the BTE. Undoubtedly, other agencies have experienced similar difficulties. Indeed, judging from the number of requests for information relating to the NTS, which have been received, it is evident that this is the case.

The purpose of this paper is to present a selection of preliminary results obtained from the first quarter's operation of the NTS. This presentation does not attempt to provide extensive tabulations of data but rather aims at providing an appreciation of the scope and nature of the study and its likely outputs.

Accordingly, it is appropriate to examine briefly the structure of the NTS before presenting the preliminary statistics.

DESCRIPTION OF THE NATIONAL TRAVEL SURVEY

The general aim of the NTS is to provide contemporary information on non-urban passenger travel within Australia. The NTS is designed to provide coverage of all modes of travel, for all trip purposes and for all seasons of the year. The study is intended to provide a framework for the planning and conduct of more specific travel surveys in the future.

Aims and Objectives

The survey has a number of specific working objectives which were devised after consideration of all the constraints under which the BTE had to operate. These constraints were mainly resource constraints although other considerations of public acceptance and the limits

on the BTE's responsibilities were also decisive in moulding the form of the NTS. The net result was a reduction in the standards involving very precise measurements and estimations, initially envisaged for the study, to one of more selective measurement accuracies.

The objectives of the NTS can be identified as follows:

- to estimate overall trip generation levels for non-urban passenger travel;
- to provide a realistic level of information on travel between predefined regions, with appropriate emphasis on those regions (or travel corridors joining them) which are considered to be of 'major importance';
- to identify and investigate a limited number of personal and household characteristics which might influence various travel patterns;
- to provide data on temporal variations in travel patterns;
- to serve as a basic framework for further research into non-urban passenger travel; and
- to serve as a vehicle for other surveys or studies which might be integrated with the NTS for reasons of convenience or economy.

These objectives, in themselves, impose constraints on the survey and affect the inevitable interdependence between financial constraints and other operational parameters. These interactions, and their resulting implications for the final format of the NTS are fully documented in separate BTE publications (Moll 1978, Moll and Russell 1978, Aplin and Flaherty 1976). A number of the more significant aspects which have had a bearing on the study are treated briefly in the subsequent discussion.

Scope of the NTS

The scope of the NTS was delineated by the nature of its objectives and resource constraints. In many respects the requirement of obtaining acceptable trip distribution information influenced the form of the NTS more than any other objective. It was certainly the prime determinant of the sample size for the survey. The sample size for the NTS is expressed in terms of trips to be sampled in a particular region.

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Ideally, it would have been desirable to collect information on travel between the smallest practical population unit and all other such units. However, the requisite sample size to attain this goal for all of Australia would have been massive. Alternatively, the statistical reliability of the geographically disaggregated information would have been increasingly compromised if the sample size were not increased. The ultimate sampling arrangement provided for differential, although specified, levels of accuracy for travel flows between regions and between various population centres.

The other determinants which influenced the scope of the study related to two objectives which required that the study provide information on seasonal patterns in travel and that this information cover all of Australia. It was essential therefore that the NTS run for at least 12 months and that a sample be chosen to provide national coverage.

Budgetary constraints also limited the overall sample size. However, there was ample scope for the adjustment of regional sample sizes within this overall limit. Details of the sampling process are provided elsewhere. (Aplin et al. 1976, and Moll et al. 1978).

Having determined the scope of the study this provided the basis for the specific format of the survey to be finalised. This is detailed in the following sections.

Survey Format

In the earlier discussion of the aims and objectives of the NTS a number of issues were discussed and certain constraints mentioned. The interactions between these objectives and constraints were progressively discovered and examined in the initial phases of the study. Changes of emphasis, direction and standards were all found to be necessary in the first stage of the study.

The following basic decisions were made after all these various factors had been examined:

- . the survey was to use a structured questionnaire schedule;
- . these questionnaires would be distributed and returned by mail;
- . the basic time period on which the sampling would be based was one month;

- . the survey would run for 12 months commencing in July 1977;
- . The basic sampling unit would be the household;
- . a partial follow-up interview survey would be conducted for both respondent and non-respondent households to measure any response and non-response biases in the returns; and
- . the definition of a trip would be any home based return trip to a destination more than 100 km from home, which ended in the particular survey month in question.

These aspects represent the major constructs of the study. The subsequent study design and methodology was aimed at incorporating these aspects into the survey.

STUDY METHODOLOGY

All the operational aspects of the NTS can not be realistically covered in this paper. However, it is worthwhile to examine fully the overall methodology and the more specific items which have a bearing on the interpretation of the statistics presented in this paper.

A schematic representation of the steps involved in the study is provided in Fig. 1. This diagram is necessarily simplified and does not indicate all the interactions between the various phases of the project. Several of these interdependencies should become evident in the subsequent discussion.

Formulation of a Regional Zoning System

It was necessary to derive a system of regional zones for the NTS. These regions, referred to as NTS regions, were required to provide a basis for the distribution of the total survey sample. In addition, the regions constitute the framework for the primary statistical analysis.

A description of the NTS regions and an outline of their derivation are provided in a separate BTE publication (Aplin et al. 1976). Sixty-four regions were ultimately defined and these covered the mainland and Tasmania. They are primarily based on a system of regions developed by the former Department of Urban and Regional Development, which are known as Australian Government Regions (AGR's) (DURD 1975). There are notable differences

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between these regional systems however, although they both have the important property of being made up of an integral number of Local Government Areas (LGA's). This has the singular advantage of providing a link between the fairly common basis of data collection (the LGA) and the NTS region. A list of the NTS regions together with a brief description of each is presented in Appendix 1.

Sampling Procedures

Possibly the most important aspect of any survey is the selection of an appropriate sample. In the case of the NTS, the household was chosen as the basic sampling unit. This unit has several advantages. One advantage is that it allows one to sample a number of household members via a single form addressed to the household.

The determination of the sample size depends on the degree of variability in the parameters being measured and the levels of accuracy required for those measurements. In the case of the NTS, the parameter chosen for the sample size determination was the trip distribution estimates. The procedures adopted in the sample size determination are detailed in two BTE papers (Aplin et al. 1976 and Moll et al. 1978).

The NTS sample, in terms of households sampled in each region, was obtained by a random selection of addresses from the Federal electoral rolls for all States and Territories except South Australia. Households in South Australia were selected from the property file compiled by the South Australian Valuer General's Office, Department of Lands.

Operational Procedures

An overall view of the operational procedures used in the NTS can be obtained from Fig. 1. The study involves 12 repetitions of the operations for a single month.

At the beginning of a month, questionnaires together with a covering letter and a replied paid envelope are sent to every address sampled for that month. Approximately 8,000 addresses are sampled each month and are distributed throughout the 64 NTS regions. The questionnaire requests details of trips ending during the previous month. An example of a questionnaire for April 1978 is presented in Appendix 2. This questionnaire would have been mailed at the beginning of May. On return of the completed forms, details relating to each return are entered via an interactive computer programme

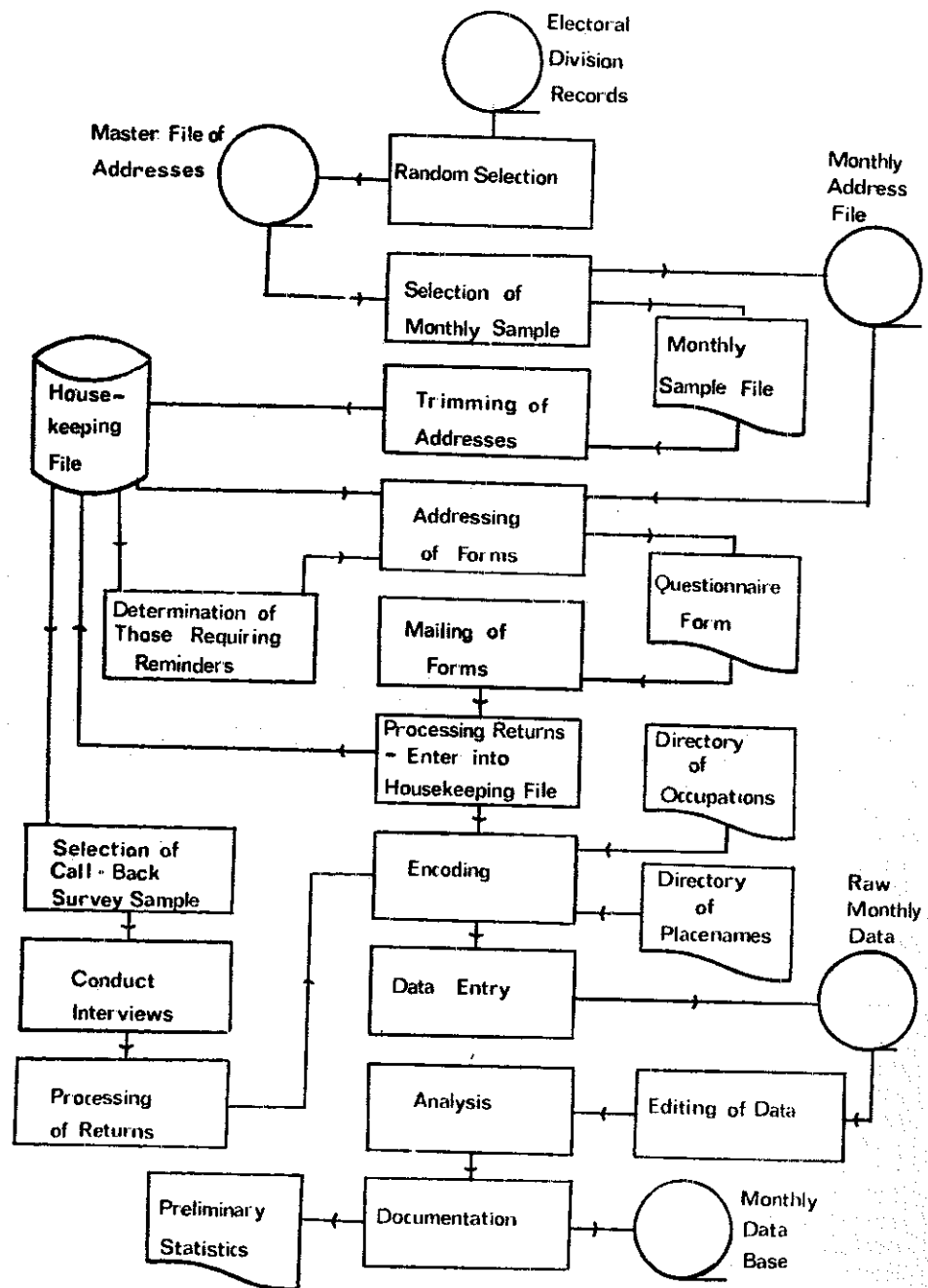


Figure 1; Schematic Representation of NTS Procedure

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onto disc storage. This file, known as the "housekeeping file", enables an up to date summary of the status of every questionnaire in the month's sample to be obtained. Approximately fourteen days after dispatch of the initial questionnaire reminder letters together with an additional questionnaire are sent to each household which has not replied at that stage.

The completed returns are systematically interpreted for ambiguity and consistency and then certain items, such as occupations and destinations, are encoded. These items are encoded by means of specially created indexed directories. The directory of occupation classifications was derived from the Australian Bureau of Statistics (ABS) occupation coding scheme. The directory used to encode origins and destinations was prepared by the BTE for the NTS (Aplin et al., 1978). It provides a unique code for about 8,500 placenames, together with the following details:

- . the Post Code;
- . The NTS region number and name;
- . The Australian Government Region (AGR) number;
- . The Census Statistical Division (CSD) number; and
- . The Local Government Area (LGA) number, LGA name and LGA type.

These raw data are then checked for any remaining incongruities and punching errors and a formatted monthly file is prepared.

On completion of this encoding, the information from each form for the month is recorded on magnetic tape. These monthly files are then processed to obtain preliminary summary statistics for each month. The prime purpose of this paper is to present a selection of these results. At the time of writing this paper, the results for the first quarter's operation of the NTS had been produced.

METHODS OF ANALYSIS

The substantial amount of data collected in the NTS precludes the analysis of all possible combinations of statistics. Accordingly, a selection of cross-tabulations which were thought to be the most generally useful have been prepared. These tabulations have been classified

according to temporal and geographic characteristics. These various area/time period combinations consist of 292 cases. These comprise 64 sets of tabulations for each NTS region, 8 sets for each State/Territory and one for Australia as a whole. These 73 cases are produced for 4 time periods in the months of July, August and September and for the September quarter 1977. For each combination, 11 tabulations were produced. Appendix 3 contains these tables for the results from Australia as a whole for the September quarter 1977. The tabulations for the other cases may be found in a separate publication (Hirsch and Aplin 1978).

The statistics presented in Appendix 3 are obviously only a selection of all the possible data combinations which could have been produced. The BTE has adopted the stance that the collection and dissemination of this information is its primary role. It is not envisaged that the BTE will carry out detailed analyses of the data. However, it is considered important that transport planning agencies have access to the information. Accordingly, an edited data base containing the results of the survey together with some additional information has been prepared on a monthly basis. The format and content of this data base, which is contained on magnetic tape, is described in a separate paper (Hirsch et al. 1978).

Definitions of Terms

The tables of statistics presented in this paper are generally self-explanatory. Nevertheless there are some broader definitions which may affect certain interpretations of these results.

Households For the purposes of the NTS a household has been defined as a distinct address at which at least one and no more than six electors are enrolled. This is the strict operational definition; it reflects the desire to select households consisting of members who constitute a single economic unit. The concept of an economic unit is that its members pool resources for rent, food etc. This then affects their net disposable incomes and it is assumed that in turn this affects their travel behaviour. In other words, travel decisions are the result of living within a unit. As a result of this definition, large scale institutions such as nurses' homes, military barracks and the like are excluded from the present survey. Different questionnaires and sampling methods would be required to allow travel of members of such institutions to be surveyed.

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Trips The term trip used in this paper is defined as a person-trip which satisfies the following criteria:

- . the trip must end at home during the particular month under survey;
- . the trip must be to a destination at least 100 km away from the home;
- . the trip must not be a regular journey to work, nor can it be made as a crew member of a bus, aircraft or ship; and
- . the trip must be made wholly within Australia.

Trip Distances The origin-destination distances expressed in the results are calculated as great-circle distances. These distances have been calculated between estimated population centroids of the relevant LGA's in which the origin and destination are contained. These are really only surrogates for the true distances which could be calculated approximately based on the most likely route for the particular mode used on the trip. However the amount of effort required for this exercise would be prohibitive.

Data Analysis

The statistical analyses performed using the data obtained from the study have two basic limitations. These limitations are:

- . there has been no correction made for either response or non-response bias; and
- . the statistics have been produced as proportional figures and no attempt has been made to expand these data to obtain population estimates(1).

The statistics have been presented in terms of proportions of the total number of trips measured. This provides a more readable tabulation and also allows a more convenient assessment of trends. Absolute survey figures can be obtained by multiplying the trip proportion figures by the total number of person-trips listed on the top right hand side of the tables in Appendix 3.

It is intended that at the conclusion of the survey, expanded and unbiased statistics will be published by the BTE.

1. Having said this, it should be noted that the aggregated statistics for Australia which are presented in this paper have been corrected for disparities in sample selection within various regions (Hirsch et al. 1978).

Expansion and bias correction factors are discussed more fully by Hirsch et al. (1978).

Error Statistics Perhaps one of the most important features of these preliminary statistics is the fact that error statistics are presented in terms of relative errors⁽¹⁾. In this way absolute error values do not have to be interpreted in terms of the specific value of the statistic in question.

For the purposes of clarity, the relative errors for all calculated trip proportions are not provided. Instead a 'look up' table (Table 2 in Appendix 3) is provided. This allows one to interpolate from a graduated scale of trip proportions the relative error for any specific trip proportion value in a table. For example if a specific trip proportion shown in a table is 0.067 then this lies between the 0.060 and 0.070 trip proportion figures in Table 2. The relative error can then be estimated approximately by interpolating between the two relative errors shown for these figures.

Separate relative errors are listed for trip generation rates and can be found in Table 3 and the summary trip table in Appendix 3. The derivation of these error statistics is detailed in Hirsch et al. (1978).

DISCUSSION OF RESULTS

Space limitations only permit the presentation of one set of results for Australia in this paper. However, the equivalent tables derived for the NTS regions and States are in an identical format. In discussing the results the tables will be referred to as they are numbered in Appendix 3.

The tables presented in Appendix 3 are basically cross-tabulations of a selection of variables. The cells of these cross-tabulations are expressed in terms of proportions of person-trips sampled.

¹ In all cases relative error refers to the quotient of the standard error of a statistic and its mean.

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Modal Split

Probably the most consistently dominant result of this study is the high proportion of trips made by car. From Table 4 of Appendix 3 it can be seen that 80 per cent of all measured trips were made by car; this vehicular split is shown diagrammatically in Fig. 2. It is evident that the massive private consumption expenditure on automobiles, fuel and garaging facilities(1) is reflected in this high usage of motor vehicles for household travel.

Trip Generation

The overall average trip propensity for the quarter was measured at 1.62 trips per household per month with a relative error of 3.6 per cent. However a more interesting result is found by examining Table 4. The average trip propensities for both household size and household income categories are provided in this table. Both household size and household income are highly correlated with the average number of trips per household. Simple least squares regression equations for these relationships are shown below:

$$y = 0.61 + 0.434 x \\ (0.22) \quad (0.040) \quad (r^2 = 0.94)$$

where: y is the average measured number of trips per household per month for Australia as a whole; and

x is the measured household size.

$$y = 0.82 + 9 \times 10^{-5} x \\ (0.14) \quad (1 \times 10^{-5}) \quad (r^2 = 0.92)$$

where: y is the average measured number of trips per household per month for Australia; and

x is the measured annual gross household income, in dollars.

The figures in brackets represent the standard errors for the respective coefficients. The standard F test indicates that both these equations are significant at the 2.5 per cent level of significance.

1. It has been estimated that the resource cost flow for the operation and garaging of private motor vehicles was in 1974/75 terms, \$5000M during 1972/73 (Clark 1976).

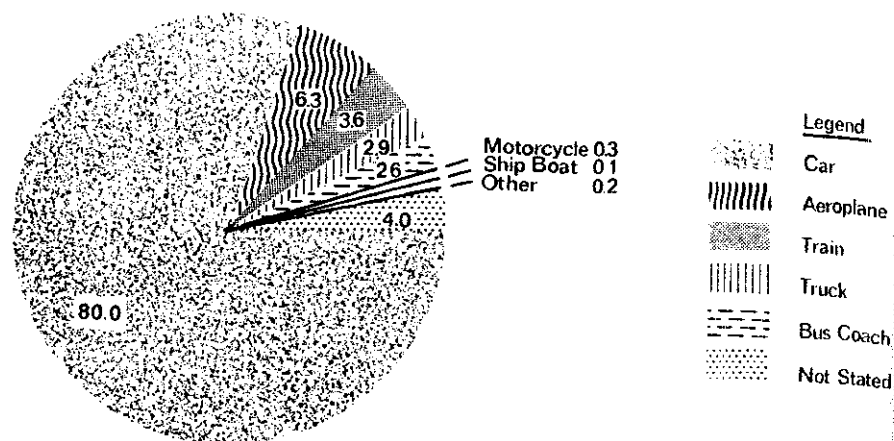


Figure 2: Percentage of Trips by Type of Vehicle

September Quarter Australia

The former equation illustrates that trip rates, measured as trips per household, increase with household size. But the interesting feature of the relationship is the value of the coefficient on household size (0.434). Thus the marginal increase in trip propensity for an additional household member is about 0.4 trips per household per month.

This reinforces the concept of the household as an economic unit as discussed earlier. In this sense, the members of the household as a group exhibit different travel propensity from that which would be expected if those household members acted as individuals. This emphasises the need to choose the sampling unit carefully in surveys of this kind. In this case sampling individuals alone and expanding the results for the population could be misleading.

Perhaps the second equation is of more interest in that it demonstrates that the trip generation rate increases with household income. These relationships are common in most urban trip generation analyses and it is notable that the phenomenon extends into the area of long distance travel as well.

There are of course a number of problems of both measurement and interpretation of income results. However, the relationships are sufficiently significant to be considered valid.

Trip Purpose

The proportion of person-trips for the various main trip purpose categories are shown in Fig. 3 for the three months of the September quarter 1977. The pre-dominant trip purposes may be classified as being a

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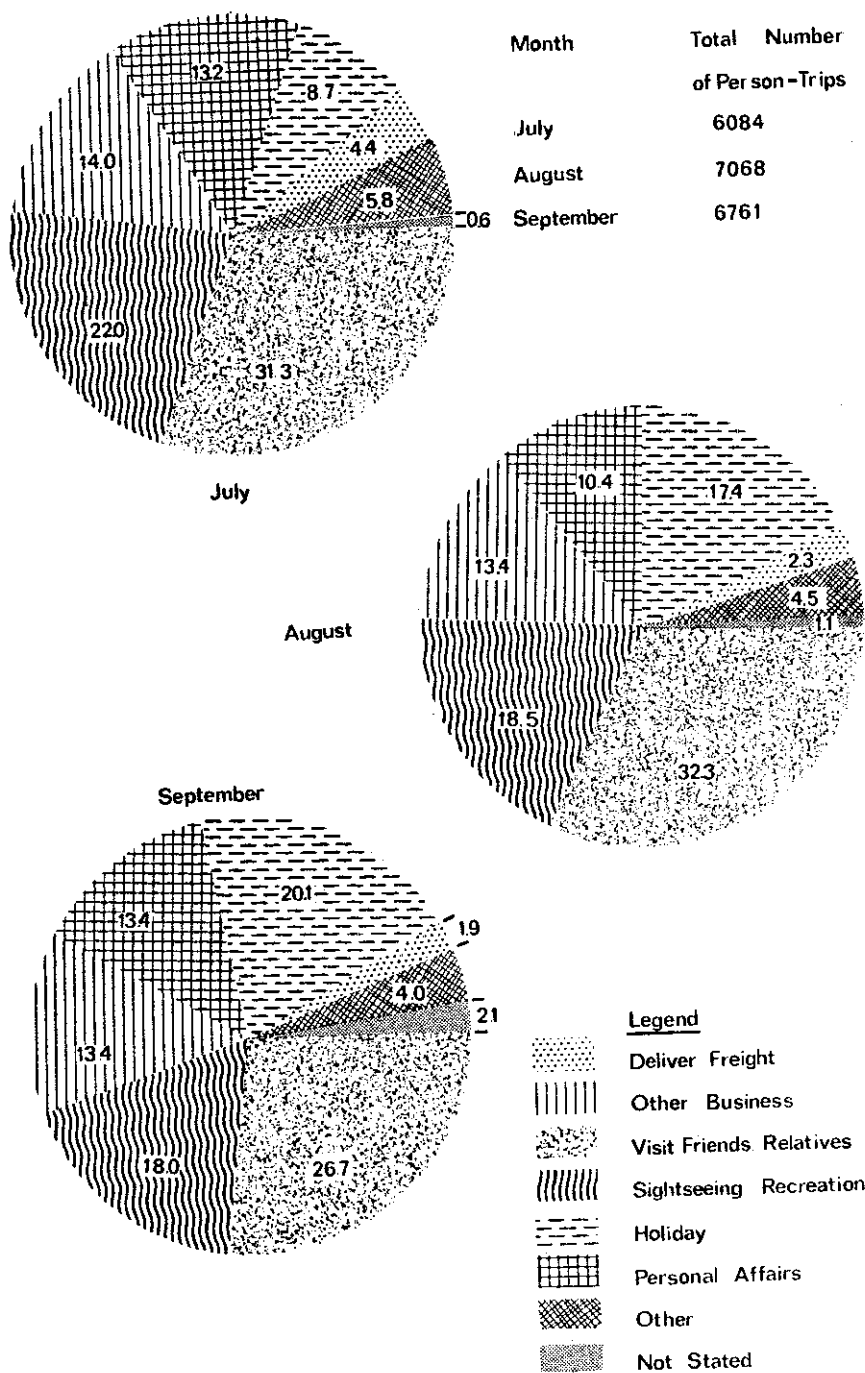


Figure 3: Percentage of Trips by Purpose - Australia

private nature whilst only about 16 to 18 per cent of the reported trips were of a business nature⁽¹⁾. The single purpose classification containing the highest proportion of trips is in all cases, 'Visiting Friends or Relatives'. It is interesting to note that the accommodation type used most often (Fig. 4) is 'Friends or Relatives Homes'. The high costs of commercial accommodation presumably influences this situation. Indeed, a significant number of the comments received during the survey have related to the high costs of accommodation.

Another feature of Fig. 3 is the temporal variation in trip purposes. The increase in holiday travel in August and September as compared to July is most probably the result of school and university holidays during these two months. On the other hand, the proportion of business trips during the quarter remains almost constant.

The results combining trip purpose and vehicle type, shown in Table 4 of Appendix 3, indicate that almost 40 per cent of the reported trips by aircraft were for business purposes. However only 13 to 14 per cent of all travel is for business purposes. This is a reflection of the fact that businessmen, or rather their employers, place a fairly high value on travel time opportunity costs.

Accommodation and Duration at Destination

Considerable interest in the National Travel Survey has been expressed recently by organisations promoting tourism. Information concerning travel and especially information on accommodation and duration of stay at the destination is of particular importance to the tourism industry. The results shown in Figs. 4 and 5 are worth examining in this context. Sixty-six per cent of all person-trips involved at least one night's stay at the main destination. However, in only 21 per cent of those cases was hotel or motel accommodation used. As noted earlier the high cost of accommodation and the standards of accommodation were the subject of considerable comment by the respondents to the NTS⁽²⁾.

1 This range of 16 to 18 per cent includes the purpose category 'deliver freight or goods'.

2 Section IV of the NTS questionnaire (Appendix 2) invited comments from respondents on general matters relating to travel. These comments have been encoded via a specially created directory of comments.

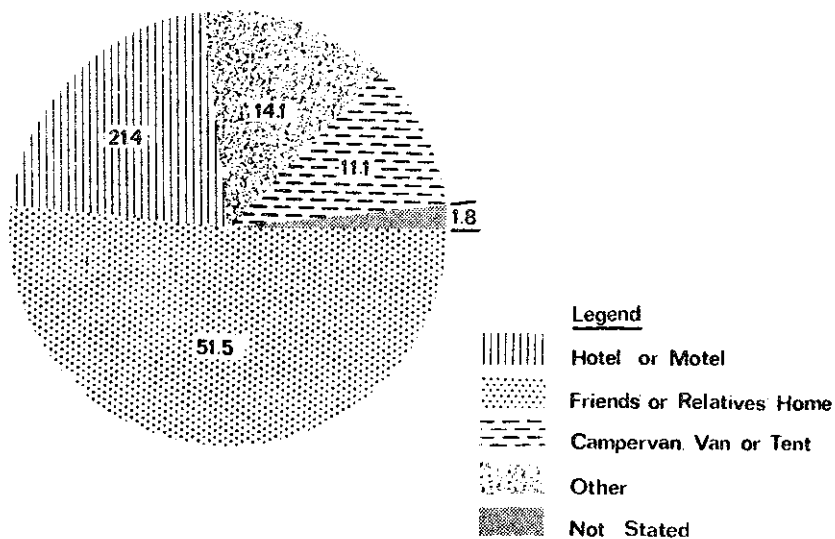


Figure 4: Percentage of Trips by Accommodation

- September Quarter - Australia

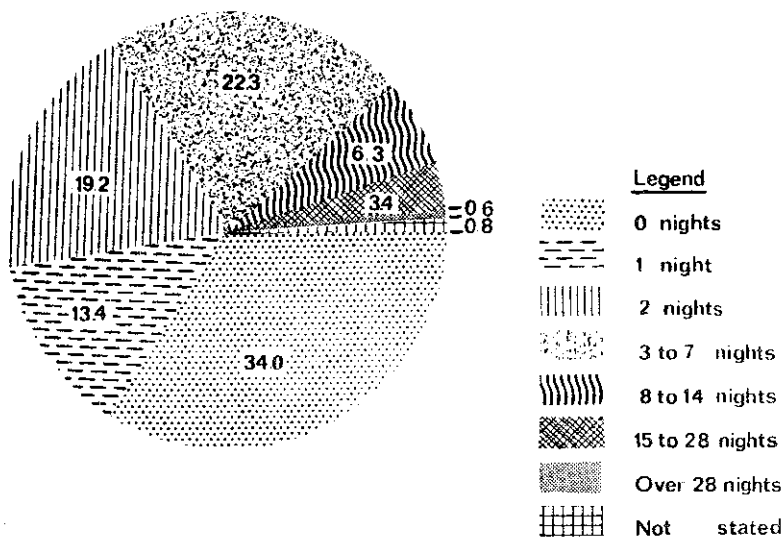


Figure 5: Percentage of Trips by Night at Destination

September Quarter Australia

Trip Length Distribution

The trip lengths shown in Table 4 of Appendix 3 are calculated as inter-LGA great circle distances. This measure, whilst not being the actual trip length, is considered to be a useful surrogate for illustrative purposes. Approximately 50 per cent of the trips made during the September quarter were made to destinations not more than 150 kilometres from home.

SUMMARY

These comments on the sample of preliminary results presented in this paper are by no means exhaustive. The data provide opportunities for innumerable types of analysis. The selection of results discussed above represents only a sample of possible conclusions which may be drawn from the NTS results.

It is stressed that the figures presented in this paper are preliminary statistics only. They represent uncorrected estimates of travel for the September quarter. The aggregate figures for Australia and the months have been 'corrected' for the sample distribution among regions. However, no account has been made for response biases which may have occurred.

At the time of writing, the results of the monthly call-back interview surveys were being processed. These results will be used to assess biases in the NTS data⁽¹⁾ and to provide the basis for corrections to be made to these data.

The BTE has prepared several publications in relation to the NTS in which the results and study methods are more fully discussed. These are listed in the References. The purpose of this paper has been to bring to the notice of transport planners and administrators the large store of data resulting from the first Australian National Travel Survey.

1 The most important source of bias which is to be corrected using the call-back interview results is that resulting from the possible statistical difference between travel levels of respondents and those of non-respondents. Correction of this source of possible bias is essential if overall travel generation is to be estimated accurately.

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APPENDIX 1 - DESCRIPTION OF NTS REGIONS

The following table presents a list of the 64 NTS regions which were devised for this study (Aplin et. al, 1978). The regions are listed by State and the region name and number have been included. In addition, an estimate of the population of each region is provided together with approximate population centroid coordinates.

TABLE 1.1 - DETAILS OF NTS REGIONS

State or Territory	Region Name	Region Number	Population	Co-ordinates of Centroid	
				Latitude	Longitude
ACT	Australian Capital Territory	101	168,600	35.25°S	149.25°E
NSW	Lismore	201	99,130	28.67°S	153.08°E
	Armidale	202	165,910	30.10°S	150.75°E
	Dubbo	203	98,010	30.75°S	148.00°E
	Broken Hill	204	31,230	31.67°S	142.25°E
	Deniliquin	205	52,310	35.50°S	147.33°E
	Albury	206	35,730	35.00°S	144.00°E
	Wagga	207	131,550	34.67°S	147.42°E
	Bathurst	208	151,930	33.50°S	149.33°E
	Goulburn	209	78,560	35.00°S	149.17°E
	Cooma	210	42,060	36.33°S	149.50°E
	Newcastle	211	414,030	32.67°S	150.90°E
	Gosford	212	103,670	33.40°S	151.50°E
	Wollongong	213	261,930	34.75°S	150.80°E
	Sydney	214	2,940,670	33.75°S	151.00°E
	Grafton	215	62,940	31.50°S	153.75°E
	Taree	216	67,290	29.80°S	153.25°E
Victoria	Geelong	301	173,650	38.25°S	144.20°E
	Warrnambool	302	93,870	38.25°S	142.50°E
	Ballarat	303	99,180	37.50°S	143.75°E
	Horsham	304	52,330	36.60°S	142.40°E
	Mildura	305	66,790	34.80°S	143.00°E
	Bendigo	306	124,030	36.60°S	144.50°E
	Shepparton	307	118,440	36.50°S	145.60°E
	Wangaratta	308	68,290	36.40°S	146.70°E
	Sale	309	54,510	37.85°S	147.60°E
	Moe	310	112,980	38.30°S	146.30°E
	Melbourne	311	2,660,220	38.00°S	145.00°E

TABLE 1.1 - DETAILS OF NTS REGIONS (Continued)

State or Territory	Region Name	Region Number	Population	Co-ordinates of Centroid	
				Latitude	Longitude
Queensland	Brisbane	401	940,800	27.50°S	153.20°E
	Gold Coast	402	131,050	27.80°S	153.00°E
	Nambour	403	59,840	26.80°S	152.85°E
	Bundaberg	404	140,370	25.25°S	152.58°E
	Rockhampton	405	124,400	23.75°S	150.92°E
	Mackay	406	72,200	21.34°S	149.00°E
	Townsville	407	138,400	19.50°S	146.80°E
	Cairns	408	118,360	17.32°S	147.75°E
	Mount Isa	409	46,100	20.75°S	140.00°E
	Longreach	410	14,040	23.92°S	145.00°E
	Roma	411	29,490	27.42°S	148.25°E
	Toowoomba	412	150,150	27.50°S	151.65°E
South Australia	Adelaide	501	888,100	34.92°S	138.83°E
	Port Lincoln	502	29,700	34.25°S	134.92°E
	Kadina	503	21,200	34.17°S	137.92°E
	Whyalla	504	81,800	32.58°S	137.83°E
	Gawler	505	35,750	34.25°S	138.67°E
	Victor Harbour	506	32,400	35.42°S	138.42°E
	Murray Bridge	507	56,200	35.00°S	139.42°E
	Mount Gambier	508	56,000	35.55°S	139.42°E
	Woomera	509	10,850	29.50°S	135.70°E
Western Australia	Albany	601	61,550	33.42°S	118.17°E
	Bunbury	602	66,550	33.83°S	116.00°E
	Kalgoorlie	603	41,500	30.30°S	122.00°E
	Northam	604	39,900	31.25°S	117.00°E
	Port Hedland	605	36,250	20.50°S	117.00°E
	Derby	606	15,450	15.75°S	125.00°E
	Geraldton	607	41,450	29.50°S	115.50°E
	Perth	608	771,100	32.17°S	115.92°E
	Carnarvon	609	16,150	24.00°S	117.58°E
Tasmania	Hobart	701	189,410	42.75°S	147.25°E
	Burnie	702	89,720	41.17°S	146.00°E
	Launceston	703	107,380	41.42°S	147.00°E
	Queenstown	704	12,570	41.83°S	145.50°E
Northern Territory	Darwin	801	62,602	14.00°S	133.00°E
	Alice Springs	802	24,298	23.40°S	133.50°E

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APPENDIX 3 - NTS QUESTIONNAIRE FORM

An example of the questionnaire form used in the postal survey for the NTS is presented in this appendix. The questionnaire shown is an example for the month of April 1978. These forms are identical for all months except for the references to the month made in several places throughout the questionnaire.



BUREAU OF TRANSPORT ECONOMICS
NATIONAL TRAVEL SURVEY 1977/78

CONFIDENTIAL
REPLY WILL ONLY BE GIVEN BY
AUTHORISED BY REPRESENTATIVES

Section 1 PERSONAL DETAILS			DIRECTIONS		MAJOR ACTIVITY		OCCUPATION		AGE		DRIVING LICENCE	
PERSON	SEX	MARITAL STATUS	Tick one box for each person		See notes above		See notes above		See notes above		See notes above	
1	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Never married <input type="checkbox"/> Now married <input type="checkbox"/> Widowed <input type="checkbox"/> Other	<input type="checkbox"/> Employed Full-time <input type="checkbox"/> Employed Part-time <input type="checkbox"/> Looking for work <input type="checkbox"/> Retired/Pensioner	<input type="checkbox"/> Student <input type="checkbox"/> Home duties <input type="checkbox"/> Other							<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Never married <input type="checkbox"/> Now married <input type="checkbox"/> Widowed <input type="checkbox"/> Other	<input type="checkbox"/> Employed Full-time <input type="checkbox"/> Employed Part-time <input type="checkbox"/> Looking for work <input type="checkbox"/> Retired/Pensioner	<input type="checkbox"/> Student <input type="checkbox"/> Home duties <input type="checkbox"/> Other							<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Never married <input type="checkbox"/> Now married <input type="checkbox"/> Widowed <input type="checkbox"/> Other	<input type="checkbox"/> Employed Full-time <input type="checkbox"/> Employed Part-time <input type="checkbox"/> Looking for work <input type="checkbox"/> Retired/Pensioner	<input type="checkbox"/> Student <input type="checkbox"/> Home duties <input type="checkbox"/> Other							<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Never married <input type="checkbox"/> Now married <input type="checkbox"/> Widowed <input type="checkbox"/> Other	<input type="checkbox"/> Employed Full-time <input type="checkbox"/> Employed Part-time <input type="checkbox"/> Looking for work <input type="checkbox"/> Retired/Pensioner	<input type="checkbox"/> Student <input type="checkbox"/> Home duties <input type="checkbox"/> Other							<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Never married <input type="checkbox"/> Now married <input type="checkbox"/> Widowed <input type="checkbox"/> Other	<input type="checkbox"/> Employed Full-time <input type="checkbox"/> Employed Part-time <input type="checkbox"/> Looking for work <input type="checkbox"/> Retired/Pensioner	<input type="checkbox"/> Student <input type="checkbox"/> Home duties <input type="checkbox"/> Other							<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Never married <input type="checkbox"/> Now married <input type="checkbox"/> Widowed <input type="checkbox"/> Other	<input type="checkbox"/> Employed Full-time <input type="checkbox"/> Employed Part-time <input type="checkbox"/> Looking for work <input type="checkbox"/> Retired/Pensioner	<input type="checkbox"/> Student <input type="checkbox"/> Home duties <input type="checkbox"/> Other							<input type="checkbox"/> Yes <input type="checkbox"/> No	
7	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Never married <input type="checkbox"/> Now married <input type="checkbox"/> Widowed <input type="checkbox"/> Other	<input type="checkbox"/> Employed Full-time <input type="checkbox"/> Employed Part-time <input type="checkbox"/> Looking for work <input type="checkbox"/> Retired/Pensioner	<input type="checkbox"/> Student <input type="checkbox"/> Home duties <input type="checkbox"/> Other							<input type="checkbox"/> Yes <input type="checkbox"/> No	
8	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Never married <input type="checkbox"/> Now married <input type="checkbox"/> Widowed <input type="checkbox"/> Other	<input type="checkbox"/> Employed Full-time <input type="checkbox"/> Employed Part-time <input type="checkbox"/> Looking for work <input type="checkbox"/> Retired/Pensioner	<input type="checkbox"/> Student <input type="checkbox"/> Home duties <input type="checkbox"/> Other							<input type="checkbox"/> Yes <input type="checkbox"/> No	
9	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Never married <input type="checkbox"/> Now married <input type="checkbox"/> Widowed <input type="checkbox"/> Other	<input type="checkbox"/> Employed Full-time <input type="checkbox"/> Employed Part-time <input type="checkbox"/> Looking for work <input type="checkbox"/> Retired/Pensioner	<input type="checkbox"/> Student <input type="checkbox"/> Home duties <input type="checkbox"/> Other							<input type="checkbox"/> Yes <input type="checkbox"/> No	

A	Office
N	Use
L	Only
C	

APRIL 1978

PLEASE RETURN THIS FORM WITHIN SEVEN DAYS.

Section II

DETAILS OF TRIPS ENDING IN APRIL 1978 ONLY

DIRECTIONS—please read carefully before filling in trip details

- A trip is defined as a journey which ends at home during April 1978, regardless of whether it is a round trip or a one-way trip.
- Do not include trips made as a crew member on a ship, train, aircraft or bus. However, trips made as a passenger on a commercial motor vehicle (bus or train) should be included.
- Do not include trips involving travel to or from work.
- Include only trips which involved travel to at least one place 100 miles (or more) from home.

IF NO ONE IN THIS HOUSEHOLD TRAVELED TO ANY OF THE PLACES LISTED IN THIS SECTION, CHECK THIS BOX AND GO TO SECTION III

	TRIP 1		TRIP 2		TRIP 3		TRIP 4		TRIP 5	
	City/Town	State	City/Town	State	City/Town	State	City/Town	State	City/Town	State
A. What was the destination of the trip? If more than one place was visited, record the name of the place nearest to the main destination.										
B. How many nights were spent there?										
C. What types of accommodations were used during the trip? Tick one box for each type of accommodation used.	<input type="checkbox"/> Hotel or motel <input type="checkbox"/> Friends or relatives' home <input type="checkbox"/> Camp, campground or tent <input type="checkbox"/> Other	<input type="checkbox"/> Hotel or motel <input type="checkbox"/> Friends or relatives' home <input type="checkbox"/> Camp, campground or tent <input type="checkbox"/> Other	<input type="checkbox"/> Hotel or motel <input type="checkbox"/> Friends or relatives' home <input type="checkbox"/> Camp, campground or tent <input type="checkbox"/> Other	<input type="checkbox"/> Hotel or motel <input type="checkbox"/> Friends or relatives' home <input type="checkbox"/> Camp, campground or tent <input type="checkbox"/> Other	<input type="checkbox"/> Hotel or motel <input type="checkbox"/> Friends or relatives' home <input type="checkbox"/> Camp, campground or tent <input type="checkbox"/> Other	<input type="checkbox"/> Hotel or motel <input type="checkbox"/> Friends or relatives' home <input type="checkbox"/> Camp, campground or tent <input type="checkbox"/> Other	<input type="checkbox"/> Hotel or motel <input type="checkbox"/> Friends or relatives' home <input type="checkbox"/> Camp, campground or tent <input type="checkbox"/> Other	<input type="checkbox"/> Hotel or motel <input type="checkbox"/> Friends or relatives' home <input type="checkbox"/> Camp, campground or tent <input type="checkbox"/> Other	<input type="checkbox"/> Hotel or motel <input type="checkbox"/> Friends or relatives' home <input type="checkbox"/> Camp, campground or tent <input type="checkbox"/> Other	<input type="checkbox"/> Hotel or motel <input type="checkbox"/> Friends or relatives' home <input type="checkbox"/> Camp, campground or tent <input type="checkbox"/> Other
D. What were the reasons for making the trip as a whole? Tick one box for each reason. If you tick more than one box, indicate the main reason for going to the place. (You may tick more than one box.)	<input type="checkbox"/> Deliver freight or goods <input type="checkbox"/> Other business <input type="checkbox"/> Visit friends or relatives <input type="checkbox"/> Sightseeing or recreation <input type="checkbox"/> Holiday <input type="checkbox"/> Personal or family affairs <input type="checkbox"/> Other	<input type="checkbox"/> Deliver freight or goods <input type="checkbox"/> Other business <input type="checkbox"/> Visit friends or relatives <input type="checkbox"/> Sightseeing or recreation <input type="checkbox"/> Holiday <input type="checkbox"/> Personal or family affairs <input type="checkbox"/> Other	<input type="checkbox"/> Deliver freight or goods <input type="checkbox"/> Other business <input type="checkbox"/> Visit friends or relatives <input type="checkbox"/> Sightseeing or recreation <input type="checkbox"/> Holiday <input type="checkbox"/> Personal or family affairs <input type="checkbox"/> Other	<input type="checkbox"/> Deliver freight or goods <input type="checkbox"/> Other business <input type="checkbox"/> Visit friends or relatives <input type="checkbox"/> Sightseeing or recreation <input type="checkbox"/> Holiday <input type="checkbox"/> Personal or family affairs <input type="checkbox"/> Other	<input type="checkbox"/> Deliver freight or goods <input type="checkbox"/> Other business <input type="checkbox"/> Visit friends or relatives <input type="checkbox"/> Sightseeing or recreation <input type="checkbox"/> Holiday <input type="checkbox"/> Personal or family affairs <input type="checkbox"/> Other	<input type="checkbox"/> Deliver freight or goods <input type="checkbox"/> Other business <input type="checkbox"/> Visit friends or relatives <input type="checkbox"/> Sightseeing or recreation <input type="checkbox"/> Holiday <input type="checkbox"/> Personal or family affairs <input type="checkbox"/> Other	<input type="checkbox"/> Deliver freight or goods <input type="checkbox"/> Other business <input type="checkbox"/> Visit friends or relatives <input type="checkbox"/> Sightseeing or recreation <input type="checkbox"/> Holiday <input type="checkbox"/> Personal or family affairs <input type="checkbox"/> Other	<input type="checkbox"/> Deliver freight or goods <input type="checkbox"/> Other business <input type="checkbox"/> Visit friends or relatives <input type="checkbox"/> Sightseeing or recreation <input type="checkbox"/> Holiday <input type="checkbox"/> Personal or family affairs <input type="checkbox"/> Other	<input type="checkbox"/> Deliver freight or goods <input type="checkbox"/> Other business <input type="checkbox"/> Visit friends or relatives <input type="checkbox"/> Sightseeing or recreation <input type="checkbox"/> Holiday <input type="checkbox"/> Personal or family affairs <input type="checkbox"/> Other	<input type="checkbox"/> Deliver freight or goods <input type="checkbox"/> Other business <input type="checkbox"/> Visit friends or relatives <input type="checkbox"/> Sightseeing or recreation <input type="checkbox"/> Holiday <input type="checkbox"/> Personal or family affairs <input type="checkbox"/> Other
E. During the trip, which place visited was furthest from home?										
F. What were the main methods of transport used during the trip? Tick one box for each method of transport. If you tick more than one box, indicate the main method of transport used.	<input type="checkbox"/> Airplane <input type="checkbox"/> Ship/Boat <input type="checkbox"/> Bus/Coach <input type="checkbox"/> Car <input type="checkbox"/> Truck <input type="checkbox"/> Other	<input type="checkbox"/> Airplane <input type="checkbox"/> Ship/Boat <input type="checkbox"/> Bus/Coach <input type="checkbox"/> Car <input type="checkbox"/> Truck <input type="checkbox"/> Other	<input type="checkbox"/> Airplane <input type="checkbox"/> Ship/Boat <input type="checkbox"/> Bus/Coach <input type="checkbox"/> Car <input type="checkbox"/> Truck <input type="checkbox"/> Other	<input type="checkbox"/> Airplane <input type="checkbox"/> Ship/Boat <input type="checkbox"/> Bus/Coach <input type="checkbox"/> Car <input type="checkbox"/> Truck <input type="checkbox"/> Other	<input type="checkbox"/> Airplane <input type="checkbox"/> Ship/Boat <input type="checkbox"/> Bus/Coach <input type="checkbox"/> Car <input type="checkbox"/> Truck <input type="checkbox"/> Other	<input type="checkbox"/> Airplane <input type="checkbox"/> Ship/Boat <input type="checkbox"/> Bus/Coach <input type="checkbox"/> Car <input type="checkbox"/> Truck <input type="checkbox"/> Other	<input type="checkbox"/> Airplane <input type="checkbox"/> Ship/Boat <input type="checkbox"/> Bus/Coach <input type="checkbox"/> Car <input type="checkbox"/> Truck <input type="checkbox"/> Other	<input type="checkbox"/> Airplane <input type="checkbox"/> Ship/Boat <input type="checkbox"/> Bus/Coach <input type="checkbox"/> Car <input type="checkbox"/> Truck <input type="checkbox"/> Other	<input type="checkbox"/> Airplane <input type="checkbox"/> Ship/Boat <input type="checkbox"/> Bus/Coach <input type="checkbox"/> Car <input type="checkbox"/> Truck <input type="checkbox"/> Other	<input type="checkbox"/> Airplane <input type="checkbox"/> Ship/Boat <input type="checkbox"/> Bus/Coach <input type="checkbox"/> Car <input type="checkbox"/> Truck <input type="checkbox"/> Other
G. Which members of this household went on this trip? Please refer to the notes at the top of this section and tick the appropriate box for each member.	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other
H. When did the trip end, and how many nights were spent away from home?										
I. Who paid for any fares released? Please refer to the notes at the top of this section and tick the appropriate box for each member.	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other	<input type="checkbox"/> No one involved <input type="checkbox"/> Household member(s) <input type="checkbox"/> Employee's or own business <input type="checkbox"/> Other
J. How many other trips did you take to the same place during the month? You need not fill in a trip column for more than one trip.										

PLEASE TURN OVER

THE NATIONAL TRAVEL SURVEY 1977-78

<p>Section III</p> <p>HOUSEHOLD DETAILS</p>	<p>DIRECTIONS—these details relate to the household as a whole</p> <p>• When answering the motor vehicles question, include company cars and other vehicles which are not owned by members of the household, but which are regularly available to at least one of them.</p> <p>• When answering the income question, give only the combined income for the whole household—include income from all sources (wages, overtime, child endowment, pensions etc.)—do not deduct tax superannuation, etc.</p>										
<p>A</p> <p>How many motor vehicles are available for use by members of this household?</p> <p>Refer to the notes at the top of this Section. If no vehicles in a particular class are available, write '0' for that class.</p>	<p>Cars (including motor wagons)</p> <p>Motor cycles</p> <p>U. I. s and light trucks</p> <p>Other vehicles</p>										
<p>B</p> <p>What is the combined income of members of the household?</p> <p>Refer to the notes at the top of this Section, and tick one box only.</p> <p>Both weekly and equivalent yearly incomes are shown to assist you in choosing the correct box.</p>	<table border="0"> <tr> <td><input type="checkbox"/> Less than \$39 per week Less than \$2000 per year</td> <td><input type="checkbox"/> Over \$192 to \$288 per week Over \$10000 to \$15000 per year</td> </tr> <tr> <td><input type="checkbox"/> Over \$39 to \$77 per week Over \$2000 to \$4000 per year</td> <td><input type="checkbox"/> Over \$288 to \$385 per week Over \$15000 to \$20000 per year</td> </tr> <tr> <td><input type="checkbox"/> Over \$77 to \$115 per week Over \$4000 to \$6000 per year</td> <td><input type="checkbox"/> Over \$385 to \$481 per week Over \$20000 to \$25000 per year</td> </tr> <tr> <td><input type="checkbox"/> Over \$115 to \$154 per week Over \$6000 to \$8000 per year</td> <td><input type="checkbox"/> Over \$481 to \$577 per week Over \$25000 to \$30000 per year</td> </tr> <tr> <td><input type="checkbox"/> Over \$154 to \$192 per week Over \$8000 to \$10000 per year</td> <td><input type="checkbox"/> Over \$577 per week Over \$30000 per year</td> </tr> </table>	<input type="checkbox"/> Less than \$39 per week Less than \$2000 per year	<input type="checkbox"/> Over \$192 to \$288 per week Over \$10000 to \$15000 per year	<input type="checkbox"/> Over \$39 to \$77 per week Over \$2000 to \$4000 per year	<input type="checkbox"/> Over \$288 to \$385 per week Over \$15000 to \$20000 per year	<input type="checkbox"/> Over \$77 to \$115 per week Over \$4000 to \$6000 per year	<input type="checkbox"/> Over \$385 to \$481 per week Over \$20000 to \$25000 per year	<input type="checkbox"/> Over \$115 to \$154 per week Over \$6000 to \$8000 per year	<input type="checkbox"/> Over \$481 to \$577 per week Over \$25000 to \$30000 per year	<input type="checkbox"/> Over \$154 to \$192 per week Over \$8000 to \$10000 per year	<input type="checkbox"/> Over \$577 per week Over \$30000 per year
<input type="checkbox"/> Less than \$39 per week Less than \$2000 per year	<input type="checkbox"/> Over \$192 to \$288 per week Over \$10000 to \$15000 per year										
<input type="checkbox"/> Over \$39 to \$77 per week Over \$2000 to \$4000 per year	<input type="checkbox"/> Over \$288 to \$385 per week Over \$15000 to \$20000 per year										
<input type="checkbox"/> Over \$77 to \$115 per week Over \$4000 to \$6000 per year	<input type="checkbox"/> Over \$385 to \$481 per week Over \$20000 to \$25000 per year										
<input type="checkbox"/> Over \$115 to \$154 per week Over \$6000 to \$8000 per year	<input type="checkbox"/> Over \$481 to \$577 per week Over \$25000 to \$30000 per year										
<input type="checkbox"/> Over \$154 to \$192 per week Over \$8000 to \$10000 per year	<input type="checkbox"/> Over \$577 per week Over \$30000 per year										
<p>Section IV</p> <p>COMMENTS</p>	<p>INSTRUCTIONS</p> <p>• Please write down any additional information you consider useful for adequately describing recent long-distance travel by members of the household. In particular, indicate if the type of travel you recorded in Section II is unusual in any way (e.g. travel on a working holiday).</p> <p>• Please write your name at the bottom of the page.</p> <p>• If space runs short, enclose a separate sheet of paper.</p>										
<p>THANK YOU FOR YOUR CO-OPERATION</p>											

R75 1240
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APPENDIX 3 - PRESENTATION OF PRELIMINARY RESULTS

The tables shown in this appendix represent the aggregated quarterly results for the September quarter 1977 for the whole of Australia. The statistic used in Tables 2 to 11 are person-trip proportions in each case. A response summary table and trip generation table are provided at the head of the tables. These provide an overview of the performance of the survey. As noted in the text, the BTE has produced these tables in microfiche form for the 64 NTS regions.

BUREAU OF TRANSPORT ECONOMICS
NATIONAL TRAVEL SURVEY 1977/78
PRELIMINARY STATISTICAL SUMMARY

AUSTRALIA
SEPTEMBER QUARTER 1977
TRIPS IN SAMPLE ... 19913

PERFORMANCE SUMMARY

FORMS MAILED 24402
NOT DELIVERED 1043
NET DISTRIBUTION ... 23359

TOTAL RETURNS 10818
UNUSABLE RETURNS ... 241
NET RETURNS 10577

RESPONSE RATE 0.45

TRIP GENERATION SUMMARY

TRIPS IN SAMPLE 19913
EFFECTIVE H'HOLDS ... 10352
GENERATION RATE 1.621
RELATIVE ERROR 0.036

TABLE 1. VEHICLE AVAILABILITY (HOUSEHOLD BASIS)

	VEHICLES AVAILABLE						NOT STATED	TOTAL
	0	1	2	3	4	OVER 4		
PROPORTION	0.110	0.433	0.284	0.081	0.026	0.024	0.041	
RELATIVE ERROR	0.038	0.015	0.021	0.043	0.073	0.077	0.065	1.000

TABLE 2. RELATIVE ERRORS IN ESTIMATED TRIP PROPORTIONS

PROPORTION	0.010	0.020	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100	0.200	0.300	0.400	0.500	0.600	0.700
RELATIVE ERROR	0.071	0.050	0.040	0.035	0.031	0.028	0.026	0.024	0.023	0.021	0.014	0.011	0.009	0.007	0.006	0.005

TABLE 3. TRIP PROPORTIONS BY INCOME AND HOUSEHOLD SIZE

INCOME GROUP	HOUSEHOLD SIZE										NOT STATED	TOTAL	TRIPS /H'HOLD	REL ERROR
	1	2	3	4	5	6	7	8	9	OVER 9				
\$0-2000	0.001	0.003	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.864	0.207
\$2001-4000	0.015	0.013	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.762	0.119
\$4001-6000	0.003	0.023	0.009	0.005	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.051	1.040	0.081
\$6001-8000	0.004	0.020	0.011	0.018	0.010	0.008	0.000	0.000	0.000	0.000	0.000	0.072	1.667	0.065
\$8001-10000	0.010	0.020	0.035	0.027	0.013	0.005	0.002	0.000	0.000	0.000	0.000	0.072	2.059	0.091
\$10001-15000	0.013	0.049	0.034	0.050	0.032	0.015	0.004	0.002	0.000	0.000	0.000	0.115	2.430	0.052
\$15001-20000	0.006	0.039	0.042	0.074	0.026	0.014	0.006	0.004	0.001	0.000	0.001	0.179	2.829	0.085
\$20001-25000	0.002	0.019	0.024	0.029	0.021	0.007	0.001	0.002	0.001	0.000	0.002	0.106	3.203	0.130
\$25001-30000	0.000	0.021	0.005	0.020	0.011	0.004	0.000	0.000	0.000	0.000	0.000	0.065	3.606	0.087
OVER \$30000	0.001	0.010	0.007	0.013	0.011	0.008	0.008	0.002	0.000	0.000	0.000	0.061	1.488	0.103
NOT STATED	0.009	0.013	0.019	0.019	0.009	0.001	0.002	0.000	0.001	0.000	0.000	0.073		
TOTAL	0.063	0.231	0.189	0.261	0.136	0.063	0.023	0.017	0.012	0.001	0.004	1.000		
AVE TRIPS/H'HOLD	0.774	1.365	2.217	2.548	3.043	2.975	3.724	3.581	4.762	2.500	0.656			
RELATIVE ERROR	0.089	0.044	0.083	0.040	0.055	0.078	0.175	0.134	0.285	0.476	0.297			

BUREAU OF TRANSPORT ECONOMICS
NATIONAL TRAVEL SURVEY 1977/78
PRELIMINARY STATISTICAL SUMMARY

AUSTRALIA
SEPTEMBER QUARTER 1977
TRIPS IN SAMPLE ... 19913

TABLE 4. TRIP PROPORTIONS BY PURPOSE AND VEHICLE TYPE

PURPOSE	VEHICLE TYPE								NOT STATED	TOTAL
	AIRCRAFT	BUS	CAR	TRUCK	MOTORCYCLE	SHIP	TRAIN	OTHER		
DELIVER FREIGHT	0.000	0.000	0.008	0.019	0.000	0.000	0.000	0.000	0.000	0.027
OTHER BUSINESS	0.025	0.001	0.096	0.004	0.000	0.000	0.005	0.000	0.006	0.136
VISITING FRIENDS	0.011	0.003	0.258	0.001	0.002	0.000	0.010	0.000	0.014	0.299
RECREATION	0.005	0.011	0.167	0.002	0.001	0.000	0.005	0.000	0.002	0.192
HOLIDAY	0.008	0.006	0.126	0.001	0.000	0.001	0.003	0.001	0.016	0.160
PERSONAL AFFAIRS	0.007	0.001	0.102	0.002	0.000	0.000	0.011	0.000	0.002	0.125
OTHER	0.003	0.002	0.039	0.000	0.000	0.000	0.002	0.000	0.001	0.047
NOT STATED	0.005	0.001	0.006	0.000	0.000	0.000	0.000	0.000	0.001	0.013
TOTAL	0.063	0.026	0.800	0.029	0.003	0.001	0.036	0.002	0.040	1.000

TABLE 5. TRIP PROPORTIONS BY PARTY SIZE AND VEHICLE TYPE

PARTY SIZE	VEHICLE TYPE								NOT STATED	TOTAL
	AIRCRAFT	BUS	CAR	TRUCK	MOTORCYCLE	SHIP	TRAIN	OTHER		
1 PERSON	0.032	0.015	0.172	0.020	0.002	0.000	0.019	0.001	0.004	0.265
2 PERSONS	0.017	0.005	0.213	0.004	0.001	0.001	0.007	0.000	0.002	0.248
3 PERSONS	0.006	0.003	0.129	0.001	0.000	0.000	0.002	0.000	0.027	0.169
4 PERSONS	0.004	0.001	0.158	0.004	0.000	0.000	0.002	0.000	0.002	0.171
5 PERSONS	0.000	0.001	0.082	0.000	0.000	0.000	0.000	0.000	0.000	0.083
6 PERSONS	0.000	0.000	0.032	0.000	0.000	0.000	0.000	0.000	0.001	0.034
7 PERSONS	0.000	0.001	0.006	0.000	0.000	0.000	0.000	0.000	0.004	0.011
8 PERSONS	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.006
9 PERSONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OVER 9 PERSONS	0.005	0.001	0.001	0.000	0.000	0.000	0.006	0.000	0.000	0.013
TOTAL	0.063	0.026	0.800	0.029	0.003	0.001	0.036	0.002	0.040	1.000

TABLE 6. TRIP PROPORTIONS BY ACCOMMODATION AND DURATION AT DESTINATION

ACCOMMODATION	DURATION AT DESTINATION (NIGHTS)								NOT STATED	TOTAL
	0	1	2	3-7	8-14	15-28	29-56	OVER 56		
HOTEL/MOTEL	-	0.038	0.034	0.053	0.010	0.005	0.001	0.000	0.001	0.141
FRIENDS HOME	-	0.063	0.102	0.121	0.027	0.023	0.001	0.000	0.002	0.340
CARAVAN/TENT	-	0.011	0.023	0.026	0.010	0.003	0.000	0.000	0.000	0.073
OTHER	-	0.021	0.031	0.022	0.015	0.002	0.001	0.001	0.001	0.093
NOT STATED	0.340	0.001	0.002	0.001	0.001	0.001	0.001	0.000	0.005	0.352
TOTAL	0.340	0.134	0.192	0.223	0.063	0.034	0.004	0.002	0.008	1.000

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TABLE 7. TRIP PROPORTIONS BY TOTAL DURATION AND VEHICLE TYPE

DURATION (NIGHTS)	VEHICLE TYPE									TOTAL
	AIRCRAFT	BUS	CAR	TRUCK	MOTORCYCLE	SHIP	TRAIN	OTHER	NOT STATED	
0	0.007	0.009	0.267	0.015	0.001	0.000	0.007	0.000	0.006	0.312
1	0.005	0.001	0.103	0.006	0.001	0.000	0.004	0.000	0.005	0.124
2	0.011	0.004	0.159	0.002	0.001	0.000	0.004	0.000	0.001	0.182
3-7	0.022	0.006	0.166	0.003	0.000	0.000	0.009	0.000	0.011	0.219
8-14	0.008	0.003	0.061	0.001	0.000	0.000	0.004	0.001	0.002	0.079
15-28	0.008	0.002	0.031	0.000	0.000	0.000	0.001	0.000	0.016	0.059
29-56	0.001	0.000	0.007	0.000	0.000	0.000	0.007	0.000	0.000	0.015
OVER 56	0.000	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.003
NOT STATED	0.000	0.001	0.005	0.001	0.000	0.000	0.001	0.000	0.001	0.008
TOTAL	0.063	0.026	0.800	0.029	0.003	0.001	0.036	0.002	0.040	1.000

TABLE 8. TRIP PROPORTIONS BY FARES PAID AND VEHICLE TYPE

FARES PAID	VEHICLE TYPE									TOTAL
	AIRCRAFT	BUS	CAR	TRUCK	MOTORCYCLE	SHIP	TRAIN	OTHER	NOT STATED	
NO FARES	0.002	0.001	0.467	0.012	0.002	0.000	0.002	0.001	0.006	0.494
HOUSEHOLD	0.029	0.020	0.212	0.002	0.001	0.001	0.020	0.000	0.007	0.291
EMPLOYER	0.020	0.001	0.039	0.015	0.000	0.000	0.001	0.000	0.013	0.089
OTHER	0.003	0.001	0.008	0.000	0.000	0.000	0.003	0.000	0.011	0.026
NOT STATED	0.010	0.002	0.074	0.001	0.000	0.000	0.011	0.000	0.003	0.100
TOTAL	0.063	0.026	0.800	0.029	0.003	0.001	0.036	0.002	0.040	1.000

TABLE 9. TRIP PROPORTIONS BY DISTANCE AND VEHICLE TYPE

DISTANCE (KM)	VEHICLE TYPE									TOTAL
	AIRCRAFT	BUS	CAR	TRUCK	MOTORCYCLE	SHIP	TRAIN	OTHER	NOT STATED	
INTRA-LGA	0.006	0.000	0.013	0.001	0.000	0.000	0.008	0.000	0.000	0.027
0-100	0.001	0.005	0.246	0.007	0.000	0.000	0.008	0.000	0.008	0.275
101-150	0.001	0.006	0.181	0.006	0.000	0.000	0.005	0.000	0.003	0.203
151-200	0.001	0.002	0.082	0.003	0.000	0.000	0.001	0.000	0.001	0.090
201-300	0.004	0.003	0.098	0.005	0.001	0.000	0.003	0.000	0.001	0.113
301-400	0.002	0.004	0.058	0.003	0.000	0.000	0.002	0.000	0.000	0.070
401-600	0.011	0.001	0.037	0.001	0.000	0.000	0.003	0.000	0.010	0.063
601-800	0.018	0.001	0.034	0.002	0.000	0.000	0.003	0.000	0.001	0.059
801-1000	0.002	0.000	0.012	0.000	0.001	0.000	0.001	0.000	0.002	0.018
OVER 1000	0.019	0.003	0.039	0.001	0.000	0.001	0.002	0.000	0.014	0.080
TOTAL	0.063	0.026	0.800	0.029	0.003	0.001	0.036	0.002	0.040	1.000

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TABLE 10. TRIP PROPORTIONS BY INCOME AND VEHICLE TYPE

INCOME GROUP	VEHICLE TYPE								NOT STATED	TOTAL
	AIRCRAFT	BUS	CAR	TRUCK	MOTORCYCLE	SHIP	TRAIN	OTHER		
\$0-2000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.008
\$2001-4000	0.001	0.003	0.018	0.001	0.000	0.000	0.006	0.000	0.005	0.035
\$4001-6000	0.001	0.003	0.042	0.002	0.000	0.000	0.004	0.000	0.001	0.051
\$6001-8000	0.002	0.002	0.063	0.001	0.000	0.000	0.002	0.000	0.001	0.072
\$8001-10000	0.003	0.002	0.087	0.008	0.000	0.000	0.003	0.000	0.011	0.115
\$10001-15000	0.012	0.006	0.195	0.006	0.001	0.001	0.013	0.001	0.002	0.236
\$15001-20000	0.011	0.004	0.154	0.003	0.000	0.000	0.003	0.000	0.003	0.179
\$20001-25000	0.007	0.002	0.090	0.003	0.001	0.000	0.001	0.000	0.002	0.106
\$25001-30000	0.008	0.000	0.041	0.001	0.000	0.000	0.002	0.000	0.014	0.065
OVER \$30000	0.010	0.001	0.045	0.003	0.001	0.000	0.001	0.000	0.001	0.061
NOT STATED	0.008	0.002	0.059	0.002	0.000	0.000	0.001	0.001	0.001	0.073
TOTAL	0.063	0.026	0.800	0.029	0.003	0.001	0.036	0.002	0.040	1.000

TABLE 11. TRIP PROPORTIONS BY DESTINATION REGION AND VEHICLE TYPE

DESTINATION REGION	VEHICLE TYPE								NOT STATED	TOTAL
	AIRCRAFT	BUS	CAR	TRUCK	MOTORCYCLE	SHIP	TRAIN	OTHER		
REGION 214	0.016	0.003	0.074	0.005	0.000	0.000	0.018	0.000	0.006	0.123
REGION 311	0.009	0.001	0.076	0.002	0.000	0.000	0.003	0.000	0.014	0.106
REGION 401	0.005	0.001	0.025	0.001	0.000	0.000	0.001	0.000	0.000	0.034
REGION 211	0.006	0.000	0.024	0.001	0.000	0.000	0.001	0.000	0.000	0.032
REGION 202	0.000	0.001	0.025	0.002	0.000	0.000	0.000	0.000	0.001	0.030
REGION 402	0.002	0.000	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.029
REGION 307	0.000	0.001	0.027	0.000	0.000	0.000	0.000	0.000	0.001	0.028
REGION 213	0.000	0.000	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.027
REGION 306	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.001	0.026
REGION 212	0.000	0.001	0.021	0.000	0.000	0.000	0.002	0.000	0.001	0.025
REGION 403	0.000	0.000	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.024
REGION 210	0.000	0.004	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.024
REGION 208	0.000	0.000	0.021	0.000	0.000	0.000	0.001	0.000	0.000	0.023
REGION 501	0.004	0.002	0.016	0.001	0.000	0.000	0.001	0.000	0.000	0.023
REGION 305	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.010	0.020
REGION 301	0.000	0.000	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.020
REGION 310	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.019
REGION 507	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.018
REGION 404	0.000	0.000	0.016	0.001	0.000	0.000	0.000	0.000	0.000	0.018
REGION 203	0.000	0.000	0.016	0.001	0.000	0.000	0.000	0.000	0.000	0.017
OTHER REGIONS	0.019	0.010	0.275	0.013	0.002	0.001	0.007	0.001	0.006	0.334
TOTAL	0.063	0.026	0.800	0.029	0.003	0.001	0.036	0.002	0.040	1.000

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REFERENCES:

Australian Bureau of Statistics (1977), "Household Expenditure Survey 1974-75 - An Outline of Concepts, Methodology and Procedures", Bulletin 1, p. 11.

Aplin, W.N. and Flaherty, H.M., (1976), "Sampling Processes for the National Travel Survey", BTE Occasional Paper, No. 5 AGPS, Canberra.

Aplin, W.N. and Hirsch N.A., (1978), "National Travel Survey 1977-78 - National Geographic Zoning and Coding System", BTE Information Bulletin, AGPS, Canberra (to be published).

Department of Urban and Regional Development, (1975), Regions AGPS, Canberra.

Hirsch N.A. and Aplin W.N., (1978), "National Travel Survey 1977-78 - Preliminary Statistical Summary - September Quarter", BTE Information Bulletin, AGPS, Canberra (to be published).

Moll J.W., (1978), "National Travel Survey 1977-78 - Objectives and Strategies", BTE Occasional Paper, No. 10. AGPS, Canberra.

Moll J.W. and Russell, D.A. (1978), "National Travel Survey 1977-78 - Determination of Regional Sample Sizes", BTE Occasional Paper, AGPS, Canberra (to be published).

Nicholas Clark and Associates, (1976), "Resources in Transport 1972-73", Unpublished report to the BTE.