

THE TASMANIAN TOURIST INDUSTRY
THE MEASUREMENT OF TOURIST EXPENDITURE

ERRATA

Page 27, lines 3, 4 & 5, second last paragraph should read -

to the statement that $(P_t^O - P_t^n)$ is always less than the number of tourists in the State for a positive effect, i.e. that it is less than $\sum (A_t^m - D_t^m)$; this is so as 3,670 is less than

Page 35, paragraph one, the readjusted figures, 16.8, 18.3 and 16.6, should read -

38.0, 41.1 and 37.3 respectively.

Page 50, paragraph two, the estimated average length of stay for visitor's cars, instead of 27 days, should be -

50 days.

Page 62, table 'Net-Migration by Birthplace, 1961-66', the final figure, last column should read -

- 5,414

Page 65, the final two lines should read -

less Net Migration, i.e. Net Migration = Net Overseas Migration
+ Net Interstate Migration.

Page 67, reference number eight, author's name should read -

Hagger, A. J.

(i)

THE TASMANIAN TOURIST INDUSTRY
THE MEASUREMENT OF TOURIST EXPENDITURE

by

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This dissertation is submitted as part of the requirements
for an honours degree in economics.

I certify that this dissertation represents my own original work, that it contains no material which has already been published or otherwise used by me, and that to the best of my knowledge it contains no copy or paraphrase of material previously written by another person or authority except where due acknowledgement is made.

R. G. Boyles.

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PREFACE

The aim of this dissertation is to investigate the problems of measurement of the value of the Tasmanian tourist industry in terms of gross receipts from tourist expenditure. No attempt is made to derive an estimate of the value of tourist receipts, rather, attention is given to the problems of measurement of its various components, namely, the number of tourist visitors, their average length of stay and the value of their expenditure.

Besides the value of tourist receipts, it was the original intention to present an empirical study of other measures of the economic benefits of tourism to Tasmania. However in contemplating the usefulness of such a broad study when so little is known about more relevant aspects of the industry, in which case the analysis presented could only be of a detailed descriptive nature, it was considered more value could be gained from the approach adopted.

Section 1 treats the problems involved in measuring the number of tourists visiting the State; Section 2, the measurement of the average length of stay by tourists; Section 3 deals with the measurement of tourist expenditure; while Section 4 deals generally with the problems of measurement involved with some suggestions for future statistical collections.

The analysis presented is by no means exhaustive. The treatment of the topic is quite general and only those aspects for which adequate statistical data were available have received detailed investigation, the techniques applied being basically simple.

The chief problem encountered was the lack of basic statistical data related to the tourist industry. The recognized method for the collection of such data is by the means of sampling the tourist population itself but for the purposes of this dissertation, this technique proved impracticable. Apart from the published statistics, information on various aspects was obtained by approaching the authorities concerned.

No definite conclusions have been drawn from the work undertaken but it is hoped that some insight into the problems facing the tourist industry have been indicated; for those interested, the Bibliography contains some studies which are considered to give a valuable contribution to the economic treatment of tourism.

INTRODUCTION

Some will accuse this study of consisting of truisms, platitudes and repetitions. It might indeed be claimed that the importance of tourism in the national economy is too obvious to need further demonstration, but there is often a wide gap between words and the action which should follow, between desires and realities, and tourism is no exception to this rule. The economic role of tourism needs to be emphasized in order to make public authorities, international organizations and business circles tourist-conscious.

The economic activity with which tourism is concerned is that of supplying the goods and services required by tourists. It is an industry different from other sectors of the economy in that it involves the movement of people rather than commodities.

The lack of homogeneity in the types of tourists, in their demands for goods and services and in the establishments which meet these demands, complicates the measurement of the economic value of tourism, a problem consequent upon the complexity of the industry itself.

It is necessary to know the relative importance of tourism in order to provide a basis of comparison with alternative investment areas and upon which the decisions of both public and private organizations can be made.

In the case of Tasmania, the problem of measuring the economic value of the tourist industry is aggravated by the lack of basic statistical data.

1. Professor K. Krapf, The Role and Importance of International Tourism, A Study prepared for the United Nations Conference on International Travel and Tourism (Rome, 1963) p. 4.

Of the various measures of economic importance, consideration in this dissertation is given to investigating the value of the Tasmanian tourist industry in terms of gross receipts from tourist spending. No attempt is made to derive an estimate of the value of tourist receipts, rather, attention is given to the problems of measurement of its various components.

Besides the value of tourist receipts, it was the original intention of the dissertation to present an empirical analysis of other measures of the economic benefits of tourism to Tasmania, and in particular of the multiplier effect of tourist expenditure. However in contemplating the usefulness of estimating a specific multiplier for the tourist industry it was considered that as such a value by itself, with no basis of comparison with the multipliers of other industries, and in view of the almost total absence of tourism statistics for Tasmania, it was felt that there were more important and relevant aspects of the tourist industry worthy of earlier consideration.

In considering the components of gross receipts from tourist expenditure, the same approach as used by Ogilvie² is adopted.

His approach involves the measurement of -

1. External movement, or arrivals and departures of tourists.
2. Internal movement, or the length of stay of tourists.

2. F. W. Ogilvie, The Tourist Movement, An Economic Study, (London: P. S. King & Son, Ltd., 1933), p. 11.

3. Tourist expenditure, or the value of tourist receipts. These three aspects are considered in the next three sections respectively.

No attempt is made to derive estimates for each of the components of gross income derived from tourist expenditure. Instead each aspect has been considered mainly in respect to the problem of measurement and results have been presented in the cases where information was available. Particular consideration has been given to the statistical techniques for measuring each variable.

Section 4 is concerned with the future collection of tourist industry statistics.

1. THE MEASUREMENT OF EXTERNAL MOVEMENT

This section will be concerned with measuring the number of tourists visiting Tasmania since July 1, 1966, to December 31, 1970.

The Government Survey of 1969, showed that in the period under consideration, an estimated 181,000 visitors came to Tasmania and of these 104,000 were holiday visitors.³

The term 'other visitors' as used in the Government Survey, and equal to the difference between total and holiday visitors, refers to those visitors who came primarily for reasons other than holidays, such as business purposes, conferences, organised sport, inter-school visits, or similar reasons. The report on the survey stated the following about 'other visitors':

Most of these visitors are not influenced by tourist promotion. Although the amount such visitors spend in Tasmania is certainly beneficial to the State's economy, it is doubtful that it can rightly be regarded as part of the income derived by the State from what is usually described as the 'tourist industry'.⁴

This opinion is, in general, not shared by International Tourist Organizations. The Organization for Economic Co-operation and Development adopts, in its annual report on tourism, for

the term 'foreign tourist' the definition recommended by the Committee of Statistical Experts of the League of Nations in 1937:

'Any person visiting a country, other than that in which he usually resides for a period of at least 24 hours.'

3. The Treasurer, Survey of the Tourist Industry in Tasmania, Government Printer, Hobart, 1969, p. 10.

4. Ibid.

The following are considered as tourists:

- a) persons travelling for pleasure, for family reasons, for health, etc.;
- b) persons travelling to meetings, or in a representative capacity of any kind (scientific, administrative, diplomatic, religious, athletic, etc.);
- c) persons travelling for business reasons;
- d) persons arriving in the course of a sea cruise, even when they stay less than 24 hours. (The latter should be reckoned as a separate group, disregarding if necessary their usual place of residence.)

The following are not regarded as tourists:

- a) persons arriving, with or without a contract of work, to take up an occupation or engage in any business activity in the country;
- b) other persons coming to establish a residence in the country;
- c) students and young persons in boarding establishments or schools;
- d) residents in a frontier zone and persons domiciled in one country and working in an adjoining country;
- e) travellers passing through a country without stopping, even if the journey takes more than 24 hours.'

This definition can also be employed for national purposes. A 'tourist' is then 'any person visiting a place for a period of at least 24 hours'.

Persons travelling for pleasure for a period of less than 24 hours are treated as 'excursionists'.⁵

In 1963, the United Nations Conference on International Travel and Tourism (Rome) considered and recommended the use of a definition of the term 'visitors' which is essentially the same as that used by the OECD Tourism Committee. However the definition used by the United Nations and also the International Union of Official Travel Organizations regard students as tourists.⁶

In this paper the definition used for the term 'tourist', in the

5. OECD Tourism Committee, Tourism in OECD Member Countries, (Paris: Organization for Economic Co-operation and Development, 1970), p. 7.

6. Ibid.

case of visitors to Tasmania, will be a modification of the definitions mentioned above. The term 'tourist' will describe any person not normally residing in Tasmania, visiting the State for a period of at least 24 hours for any reason other than temporary employment remunerated from within the State. Travellers on cruises and non-resident students should be included in the definition.⁷

Ogilvie suggested two methods by which tourist movement might be recorded - at the frontiers, or inside the country at hotels and other accommodation establishments.⁸

The latter method, to be considered again in part 4, is often discarded as a useful form of measurement as not only do most tourists change their accommodation several times during their visit but also the method would not be representative of the tourist movement as many tourists do not stay at recognized lodging places.

The first method will be used here in an attempt to determine the number of tourists visiting Tasmania. This method appears to be the obvious means of measuring the tourist movement for Tasmania as travellers to and from the State must travel by either sea or air, there being no overland journeys, day excursionists, and few travellers in-transit. It is thus a relatively simple matter (simpler than for a country or state with land borders) to measure the number of arrivals to and departures from the island.

7. A discussion of the validity of including visitors other than those whose primary purpose for visiting the State is for a holiday as tourists will be deferred until Part 4.

8. Ogilvie, loc. cit.

In considering the number of travellers to and from the State, the number of arrivals may be split first of all into three groups - Tasmanian residents returning, permanent settlers, and non-Tasmanian residents; see Table 1.

If a non-resident is considered as being one whose previous or present place of residence is some place other than Tasmania, then the figure for Tasmanian residents returning should exclude formerly Tasmanian residents either visiting or to take up residence once again and migrants, both overseas and interstate, intending to take up residence in the State for the first time. Thus according to the definition of a tourist given above, there will be no tourist element or migrant element in the figure for Tasmanian residents returning.

The permanent settlers section of arrivals should include overseas and interstate migrants and formerly Tasmanian residents intending to take up permanent residence within the State.

The non-Tasmanian residents section of total arrivals may be sub-divided according to the definition of a tourist into tourists and non-tourists. Of the total non-resident arrivals, the following will not be regarded as tourists -

- (i) Anyone visiting the State for a period of less than 24 hours unless a passenger on a sea cruise.
- (ii) Anyone intending to take up temporary employment remunerated from within Tasmania. (Anyone on temporary transfer from the mainland or overseas and remunerated from the

TABLE 1 Total Arrivals, Tasmania

A. Tasmanian Residents		
B. Permanent Settlers	a. Overseas Migrants	
	b. Interstate Migrants	
C. Non-Tasmanian Residents	a. Non-tourists	(i) Visitors staying less than 24 hours
		(ii) Temporarily Employed
	b. Tourists	(i) Pleasure, family, health, etc.
		(ii) Representative capacity (including convention, sport, conference, etc.)
		(iii) Business
		(iv) Cruise Passengers
		(v) Non-resident Students
		(vi) Military Personnel
		(vii) Seamen
		(viii) Other

normal source, Tasmanian or otherwise, is regarded as being a tourist.) The wife, if she is not gainfully employed here, and dependents of such visitors should be regarded as tourists.

Of the total non-resident arrivals, the following will be

regarded as tourists and may be classified according to their principal reason for visiting the State and according to the definition of a tourist -

- (i) Anyone travelling for pleasure , for family reasons, for health, etc.
- (ii) Anyone travelling to meetings, or in a representative capacity of any kind (scientific, administrative, diplomatic, religious, athletic, etc.)
- (iii) Anyone travelling for business reasons.
- (iv) Anyone arriving in the course of a sea cruise, even when they stay less than 24 hours. (Above p. 5.)
- (v) Non-resident students.
- (vi) Visiting military personnel provided their length of stay exceeds 24 hours and including visits by Australian, and foreign navy ships.
- (vii) Seamen on shore-leave during the course of their ship's stay in Tasmania.
- (viii) Visitors not included above and including dependents of temporary workers and competitors in inter-state yacht races.

It is useful to construct a table similar to Table 1 for Total Departures from the State, as sooner or later those travellers not intending to change their place of residence will appear in both the arrival and departure figures even if not in the same period. Such a table is not presented here, as the basic components are the same as for Table 1, namely,

- A. Tasmanian residents intending to return;
- B. Tasmanian residents intending to settle on the mainland or overseas;
- C. Non-Tasmanian residents departing from the State, including tourists and non-tourists.

In order to determine the number of tourists visiting Tasmania, as defined above and according to Table 1, a scrutiny of the table reveals that the figures for Total Arrivals and Total Departures are poor indicators of the level of tourist activity. Although the number of arrivals may be relatively large the majority of travellers could fall into the categories of Tasmanian residents, permanent settlers or non-tourists.

Yet the only available statistical indication of the level of tourist activity are the figures for total arrivals and departures as published by the Bureau of Census and Statistics. Such numbers, being compiled from information supplied by the two national airlines and on the numbers of embarking and disembarking sea travellers, would also include visitors staying less than 24 hours but exclude travel by members of the airline and shipping companies on company business. To a certain extent the effects of these two categories will cancel each other out, though the alternative adopted here is to assume the numbers of such travellers to be negligible and are hence disregarded.

The published figures also understate actual arrivals and departures in respect to (i) seamen on shore leave, (ii) cruise

travellers, (iii) visiting military personnel - sea and air, and (iv) certain miscellaneous travellers, e.g. yachtsmen. It can be assumed, however, that such visitors depart in the same manner and period in which they arrive.

With these assumptions, the terms 'arrivals' and 'departures' will henceforth be used to describe the arrival and departure figures of the Bureau of Census and Statistics. The split up of these figures, as described by Table 1 (except for the four groups excluded), will form the basis of discussion for the rest of the paper. The remainder of this section, however, will be confined to investigating the overall tourist movement with discussion of particular types of travellers deferred until later sections.

The estimates derived are based on population estimates of Tasmania since the census of 1966 and on arrivals and departures since that date with heavy reliance being made on the results of the Government tourist survey of 1969. Besides deriving estimates of the number of tourist visitors to the State, the following work also demonstrates the impact of tourism on the population of Tasmania and in particular the seasonal demands created for tourist goods and services.

The basis of the discussion is the new method of estimating population by the Commonwealth Bureau of Census and Statistics -

Until the Census of 1966, the quarterly intercensal population of each State had been estimated using three components: (i) the previous census population; (ii) accumulated natural increase; (iii) accumulated net migration. In this calculation, net migration was the algebraic sum of all arrivals, less all departures, recorded for shipping and aircraft (Tasmania) and for shipping, aircraft, rail and

omnibus movements (other States); it therefore included overseas and interstate travel irrespective of purpose. The interstate component of net migration was obviously a composite figure, affected by persons who had permanently changed their State of residence, but even more by persons who had merely visited another State on business or holiday.

The new method of estimation, introduced after the 1966 Census, still relies on the same three components but defines and measures net migration in a different way, so that holiday, business or other similar short-term movements between States are eliminated. . . .

In the new method, the State population is estimated by adding to the previous census population the natural increase and the allocation of the net gain to Australia by overseas migration for that State; gains or losses that result from movements between States are also taken into account, in so far as they are recorded as transfers of residence under child endowment procedures or Commonwealth Electoral Procedures, supplemented by the results of any special sample surveys. It follows, therefore, that revised estimates subsequent to the 1961 Census omit the effect of holiday, business or other similar short-term movements between the States.⁹

Unfortunately figures for the two components of net migration (migrant arrivals and departures) for the new method of estimating the population of Tasmania are not available from the Bureau of Census and Statistics. If they were, the permanent settlers components could be removed from total arrivals and departures to give a net 'other travellers' residual.

However, from a method employed by A. J. Hagger and upon tables produced by the Hunter Valley Research Foundation, an attempt was made to estimate the two components of net migration. The results of this estimation are presented in Table 2 but the actual derivation of the table is contained in Appendix I.

Although there are certain simplifying assumptions involved,

9. Deputy Commonwealth Statistician, Tasmanian Year Book 1968, (Commonwealth Bureau of Census and Statistics, Hobart, 1968), pp. 127-128.

TABLE 2 Estimated Migration Movement, Tasmania

Quarter	Net Migration		Overseas		Interstate		Total	
			Arr.	Dep.	Arr.	Dep.	Arr.	Dep.
1966 Sep.	+	27	347	156	228	392	575	548
Dec.	+	403	515	156	228	184	743	340
1967 Mar.	+	526	641	156	228	187	869	343
Jun.	-	227	411	156	228	710	639	866
Sep.	+	285	389	156	228	176	617	332
Dec.	+	797	513	137	421	0	934	137
1968 Mar.	+	155	689	118	228	644	917	762
Jun.	-	210	501	139	228	800	729	939
Sep.	+	363	501	102	228	264	729	366
Dec.	+	1,059	702	162	519	0	1,221	162
1969 Mar.	+	457	636	173	228	234	864	407
Jun.	-	553	488	120	228	1,149	716	1,269
Sep.	-	116	443	195	228	592	671	787
Dec.	+	285	547	169	228	321	775	490
1970 Mar.	-	159	559	143	228	803	787	946
Jun.	-	934	458	159	228	1,461	686	1,620
Sep.	-	64	425	157	228	560	653	717
Dec.	+	546	616	216	228	82	844	298
Total		+2,640	9,381	2,770	4,588	8,559	13,969	11,329

Source: See Appendix I

the figures indicate the magnitude of the migration movement to and from Tasmania. The table was derived in three stages -

- (a) An estimate was made of the net migration to Tasmania (under the new method of estimating population) for each quarter since June 1966.
- (b) An estimate was formed for people migrating to Tasmania from overseas and for people leaving permanently for overseas.
- (c) From the pattern indicated by the censuses of 1961 and 1966,

and from (a) and (b) above (about which fairly reliable information is available), an estimate was formed for the components of interstate migration.

The results of these three sets of calculations were then used to arrive at an estimate for the number of permanent settlers arriving in the State each period and for the number leaving the State for permanent residence elsewhere. These results, however, should not be taken as being an accurate representation of the migration movement for Tasmania as it is considered that the method of estimation employed would lead to an understatement, rather than an overstatement, of the actual movement.

There are no available statistics with which the results of Table 2 can be compared, except the undisclosed figures used in the population estimates. The only other source of comparison is the Government tourist survey of 1969.

The Government survey showed that 7.2% of Tasmanian residents departing during the period of the survey, of whom there were 101,000, or 7,272, were leaving the State permanently; this represented 2.7% of the total departures for the period.

From Table 2, the estimated number of permanent departures from the State for the period of the survey, i.e. 1 April 1968 to 31 March 1969 was 1,874, and for the period July 1 1966 to December 31 1970, total permanent departures, as a percentage of Total Departures for that period, was only 0.9%. (Total Departure and Arrival figures are shown in Table 3 below.)

As the sample for the Government survey was quite large, the actual number of persons concerning whom information was obtained being 17,116 , and there being no other manner by which a more satisfactory split up could be obtained, the results of the 1969 survey will be used in the following analysis of the tourist movement to and from Tasmania.

The accuracy of the survey is supported by the results of Table 2 and the indication is that migration forms a small percentage of total movements for Tasmania.

Other details derived from the survey were as follows -¹⁰

Departures from Tasmania - 1 April 1968 to 31 March 1969

	Total Persons	%
Holiday Visitors	104,000	37
Other Visitors	77,000	27
Tasmanian Residents	101,000	36
	<u>282,000</u>	<u>100</u>

As only departures were considered in the sample, no category is allowed for permanent settlers arriving and hence the two groups 'holiday visitors' and 'other visitors' can be grouped into the category of non-Tasmanian residents according to Table 1. As stated above, 7.2% of Tasmanian residents departing, or 2.7% of departures for the period of the survey, were departing permanently and the remaining travellers consisted of Tasmanian residents intending to return, and represent 33.3% of the total.

The percentage break up for the different categories of travellers for Total Arrivals will be slightly different however,

10. The Treasurer, loc. cit.

as allowance must be made for the positive net migration for the period covered by Table 2. With these factors taken into account, the following can be stated -

Percentage break up of Arrivals and Departures

<u>Category</u>	<u>Arrivals</u> %	<u>Departures</u> %
A. Tasmanian Residents	33.2	33.3
B. Permanent Settlers	2.9	2.7
C. Non-residents	63.9	64.0
	<u>100.0</u>	<u>100.0</u>

It will be these percentages which will be used in considering the number of tourists visiting Tasmania.

By assuming the accuracy of the results of the Government survey, the different categories of Total Arrivals of Table 1 have been separated on a percentage basis. For the first two categories, the percentage break up is adequate, however the non-residents category contains a certain amount of non-tourist element, namely people arriving for temporary employment, (it has already been assumed that those visitors staying less than 24 hours are of negligible proportions.)

Perhaps the main types of temporary workers are those arriving for the fruit season as orchard hands or wharf labourers, and those engaged for the agricultural shows and regattas as carnival workers; others include visiting entertainers and professional sportsmen. The Government survey made no allowance for measuring these visitors as such and as there is no apparent way by which to measure their numbers, the alternative adopted here is to

assume their total number is negligible in comparison to total travellers. The percentages for non-residents shown above will hence refer to the number of tourists, according to the definition, visiting Tasmania; i.e. all non-Tasmanian resident visitors will be regarded as tourists.

The percentage break up of arrivals and departures, and information concerning estimates of the population of Tasmania, allow the number of tourists visiting the State to be estimated as well as their effect on the Tasmanian community to be demonstrated.

The individual components of the analysis have been derived using the following set of relationships between the different variables involved in population changes and travel.

The new method of estimating population by the Commonwealth Bureau of Census and Statistics, as described, involves firstly, the previous census population, secondly, an adjustment for natural increase during each quarter, and thirdly, an adjustment for net migration which is determined independently of arrivals and departures and hence excludes the effects of non-migrant travellers.

The old method of estimating the population involved the same components, except net migration was taken as the difference between total arrivals and total departures for the period under consideration. Not only did this method account for actual net migration but it also included in the migration figures tourists and other non-migrant travellers.

Under the new method of estimation, if

P_t^n = Population at end of period t ,

M_t^n = Net Migration in period t , and if

N_t = Natural Increase in period t , then

$$P_t^n = P_{t-1}^n + N_t + M_t^n \quad (1.1)$$

This implies

$$P_t^n = P_0^n + \sum N_i + \sum M_i^n \quad (1.2)$$

where P_0^n = previous census

population ; $i = 1, \dots, t$.

Under the old method of estimation, if

P_t^o = Population at end of period t ,

M_t^o = Net Migration in period t , then

$$P_t^o = P_{t-1}^o + N_t + M_t^o \quad (1.3)$$

This implies

$$P_t^o = P_0^o + \sum N_i + \sum M_i^o \quad (1.4)$$

where P_0^o = previous census

population = P_0^n ; $i = 1, \dots, t$.

In the case in question, the previous census population, $P_0^n = P_0^o$, is the census population at June 30th, 1966, and the period of time concerned is a quarter of a year. The time span considered is the September quarter 1966 to the December quarter 1970.

Estimates for P_t^n , N_t , M_t^n , M_t^o and P_t^o are shown in Table 4 in columns (1) to (5) respectively.

Note that the item M_t^o , termed here 'Old' Net Migration, includes not only the actual net migration, M_t^n , for the period t

but also the net non-migration movement. It has been assumed already that all non-migrant non-Tasmanian visitors to the State will be regarded as tourists, and a similar assumption may be made about Tasmanian residents departing but intending to return, i.e. that such travellers are tourists visiting out of state, though the break up of this category of traveller is of no concern here.

From this assumption,

$$M_t^O = M_t^n + T_t = A_t - D_t \quad (1.5)$$

where T_t is Net Tourist Effect, and A_t

and D_t are Total Arrivals and Departures for period t .

Estimates for A_t , D_t , M_t^O , T_t and $(P_t^O - P_t^n)$, Net Population Effect, are shown in Table 3 in columns (1) to (5) respectively.

The sources of various components of the two tables are given; the other components have been reconstructed from relationships (1.1) to (1.5) above.

Some components need further explanation.

M_t^O of both Tables 3 and 4 is derived from (1.5) and hence is equal to the difference between columns (1) and (2) in Table 3 and also to the sum of column (4) of Table 3 and column (3) of Table 4. T_t is also derived from (1.5) and is equal to $(A_t - D_t - M_t^n)$.

In Table 4, Population, P_t^n , is the quarterly adjusted population figure for Tasmania. Net Migration, M_t^n , is obtained for each quarter by removing the natural increase from the population change for the quarter and is shown by (1.1), where

$M_t^n = (P_t^n - P_{t-1}^n) - N_t$. 'Old' Net Migration is equivalent to Net Effect of Table 3.

The 'Old' Population estimate, P^o , is the population of Tasmania as estimated under the old system of population measurement. This method of estimation is no longer used by the Bureau of Census and Statistics but the series has here been reconstructed for the period since the census of 1966. It is explained by (1.3).

The Net Population Effect of Table 3 is merely the difference between the two population estimates, P^o and P^n , for corresponding periods. However, from (1.2) and (1.4),

$$\begin{aligned} P_t^o - P_t^n &= \sum M_i^o - \sum M_i^n, \text{ where } i = 1, \dots, t \\ &= \sum M_i^n + \sum T_i - \sum M_i^n, \text{ substituting from (1.5)} \\ \text{i.e. } P_t^o - P_t^n &= \sum T_i \end{aligned} \quad (1.6)$$

Thus the Net Population Effect is not only the difference between the two estimates of population, but also is equal to the cumulative effect of tourist movement for the preceding and present periods. It is equal to the cumulative sum of the elements of T in Table 3, up to and including the period concerned.

The assumption underlying these calculations is that up to June 30th 1966, the cumulative effect of tourist movement in and out of Tasmania had balanced out to give a zero net population effect, hence the two population estimates are equal for that date.

The implication of the last relationship, (1.6), is its

demonstration of the effect of tourism on the Tasmanian community. If P_t^n is defined as being the 'normal population' of Tasmania at the end of period t , and equal to the sum of those people in Tasmania, on the mainland, and throughout the rest of the world who regard themselves as being Tasmanian residents, then the Net Population Effect, $(P_t^o - P_t^n)$, shows for a positive value the number of people in Tasmania in excess of the size of the State's normal population at the end of period t . Similarly, a negative effect shows by how much the number of people present in the State is less than the size of the normal population at the end of the period.

From the definitions and assumptions used, and as demonstrated by (1.6), the net population effect for each period is caused by the tourist movement only, where the tourist movement is the sum of arrivals and departures of both non-resident visitors and Tasmanian tourists visiting out-of-state. The Net Population Effect for period t is the cumulative sum of the Net Tourist Effects, T , for all preceding periods and for period t .

But this is not to say if the Net Population Effect is positive that $(P_t^o - P_t^n)$ equals the number of tourists present in Tasmania at the end of period t . For instance at the end of the December quarter 1970, the number of non-resident visitors in Tasmania at that time is not necessarily 4,892, in fact the number of tourists present would certainly be greater since there would be at least some Tasmanian residents touring on the mainland

TABLE 3 Total Arrivals and Departures, Net Effects - Tasmania

t	A	D	M ⁰	T	(P ⁰ - P ⁿ)
Quarter	Arrivals	Departures	Net Effect	Net Tourist Effect	Net Population Effect
1966 Sep.	50,601	50,201	+ 400	+ 373	+ 373
Dec.	74,877	63,385	+11,492	+11,089	+11,462
1967 Mar.	85,186	92,476	- 7,290	- 7,816	+ 3,646
Jun.	57,899	61,612	- 3,713	- 3,486	+ 160
Sep.	55,224	54,734	+ 490	+ 205	+ 365
Dec.	72,625	62,738	+ 9,887	+ 9,090	+ 9,455
1968 Mar.	76,316	82,408	- 6,092	- 6,247	+ 3,208
Jun.	62,863	66,766	- 3,903	- 3,693	- 485
Sep.	53,307	53,684	- 377	- 740	- 1,225
Dec.	81,737	71,369	+10,368	+ 9,309	+ 8,084
1969 Mar.	83,019	88,119	- 5,100	- 5,557	+ 2,527
Jun.	68,160	76,073	- 7,913	- 7,360	- 4,833
Sep.	59,045	59,574	- 529	- 413	- 5,246
Dec.	85,962	73,303	+12,659	+12,374	+ 7,128
1970 Mar.	93,497	100,454	- 6,957	- 6,798	+ 330
Jun.	72,885	79,520	- 6,635	- 5,701	- 5,371
Sep.	67,347	68,795	- 1,448	- 1,384	- 6,755
Dec.	87,138	74,945	+12,193	+11,647	+ 4,892
Total	1,287,688	1,280,156	+ 7,532	+ 4,892	

Source: Columns (1) and (2), Tasmanian Year Book 1971, Deputy Commonwealth Statistician, (Hobart, 1971), p. 155.

and Deputy Commonwealth Statistician, "Travel Industry Statistics," (unpublished, Commonwealth Bureau of Census and Statistics, Hobart, 1971), Appendix B.

Notes: Column (3) derived from equation (1.5)

Column (4) derived from equation (1.5)

Column (5) derived from equation (1.6) and columns

(1) and (5) Table 4.

TABLE 4 Population of Tasmania Since June 30th, 1966

t	p ⁿ	N	M ⁿ	M ^o	p ^o
Quarter	Population	Natural Increase	Net Migration	'Old' Net Migration	'Old' Population
30/6/1966	371,400				371,400
1966 Sep.	372,400	973	+ 27	+ 400	372,773
Dec.	373,900	1,097	+ 403	+11,492	385,362
1967 Mar.	375,500	1,074	+ 526	- 7,290	379,146
Jun.	376,400	1,127	- 227	- 3,713	376,560
Sep.	377,700	1,015	+ 285	+ 490	378,065
Dec.	379,600	1,103	+ 797	+ 9,887	389,055
1968 Mar.	381,000	1,245	+ 155	- 6,092	384,208
Jun.	382,000	1,210	- 210	- 3,903	381,515
Sep.	383,500	1,137	+ 363	- 377	382,275
Dec.	386,000	1,441	+1,059	+10,368	394,084
1969 Mar.	387,900	1,443	+ 457	- 5,100	390,427
Jun.	388,500	1,153	- 553	- 7,913	383,667
Sep.	389,500	1,116	- 116	- 529	384,254
Dec.	391,200	1,415	+ 285	+12,659	398,328
1970 Mar.	392,200	1,159	- 159	- 6,957	392,530
Jun.	392,500	1,234	- 934	- 6,635	387,129
Sep.	393,700	1,264	- 64	- 1,448	386,945
Dec.	395,600	1,354	+ 546	+12,193	400,492
Total		21,560	+2,640	+ 7,532	

Source: Columns (1) and (2) - Deputy Commonwealth Statistician,
Tasmanian Monthly Summary of Statistics,

Notes: Column derived from equation (1.1) - M^n

Column derived from equation (1.5) - M^o

Column derived from equation (1.4) - P^o

or overseas.

The Net Population Effect, as shown in Table 3, thus demonstrates the fluctuations of the number of people in Tasmania which result purely from tourist travel. In particular the seasonal pattern of the total tourist movement (i.e. by both residents and non-residents) is emphasised. The December quarters indicate a large influx of tourists to the State while the other three quarters would seem to indicate a relatively low influx of tourists with the June and September quarters also indicating a large outflow of Tasmanians for touring out-of-State. It also emphasises the fact that travel by Tasmanian residents is an important part of the tourist movement.

The results of Table 3 and Table 4 were all derived from results published by the Bureau of Census and Statistics, and using the assumption that the Net Population Effect at the end of the June quarter 1966 was zero. If the actual tourist arrival and departure figures were known, the above analysis could be further extended. This could be done as follows -

From (1.5), $T_t = (A_t - D_t) - M_t^n$, and may be defined as total tourist arrivals less total tourist departures.

If in period t,

A_t^m = non-resident tourist arrivals,

D_t^m = non-resident departures,

A_t^t = Tasmanian resident tourist arrivals, and

D_t^t = Tasmanian resident tourist departures,

then by definition,

$$T_t = (A_t^m + A_t^t) - (D_t^m + D_t^t) = (A_t^m - D_t^m) + (A_t^t - D_t^t) \quad (1.7)$$

The actual tourist movement figures are not known however, and hence values for A_t^m , D_t^m , A_t^t and D_t^t have been estimated by applying the percentages derived from the Government Tourist Survey.

The estimation process is described below and the results are shown in Table 5.

To the total Arrival and Departure figures, A_t and D_t , of Table 3, the percentages of 33.2% and 33.3% respectively were applied to obtain Tasmanian resident travellers; these are shown as A_t^t and D_t^t respectively in Table 5.

Similarly the percentages of 63.9% and 64.0% were used to derive non-resident tourist arrivals and departures; the latter is shown as D_t^m in Table 5, the former as A_t^m in Table 6. The figures which will be used for estimated non-resident tourist arrivals are shown by A_t^m in Table 5.

A_t^m is used because as the estimated tourist arrival and departure figures were derived by applying a constant percentage value, the estimated net tourist effect so derived will not agree with the actual Net Tourist Effect, T , of Table 3. As it is desirable to maintain comparability between Tables 3, 4, and 5, non-resident tourist arrivals were re-estimated from

$$A_t^m = T_t + D_t^m - (A_t^t - D_t^t) \quad \text{from (1.7), and where } T_t,$$

TABLE 5 Estimated Tourist Arrivals and Departures

t	Estimated Non-Resident			Estimated Tasmanian		
	A ^m	D ^m	A ^m - D ^m	A ^t	D ^t	A ^t - D ^t
Quarter	Arrivals	Departures	Net Effect	Arrivals	Departures	Net Effect
1966 Sep.	32,417	32,127	+ 290	16,800	16,717	+ 83
Dec.	47,903	40,566	+7,337	24,859	21,107	+3,752
1967 Mar.	53,882	59,185	-5,303	28,282	30,795	-2,513
Jun.	37,240	39,432	-2,192	19,222	20,516	-1,294
Sep.	35,127	35,030	+ 97	18,334	18,226	+ 108
Dec.	45,022	40,152	+4,870	24,112	20,892	+4,220
1968 Mar.	48,599	52,741	-4,142	25,337	27,442	-2,105
Jun.	40,399	42,730	-2,331	20,871	22,233	-1,362
Sep.	33,798	34,358	- 560	17,697	17,877	- 180
Dec.	51,613	45,676	+5,937	27,137	23,765	+3,372
1969 Mar.	52,621	56,396	-3,775	27,562	29,344	-1,782
Jun.	45,030	48,687	-3,657	22,629	25,332	-3,703
Sep.	37,949	38,127	- 178	19,603	19,838	- 235
Dec.	55,158	46,914	+8,244	28,539	24,409	+4,130
1970 Mar.	59,903	64,291	-4,388	31,041	33,451	-2,410
Jun.	47,474	50,893	-3,419	24,198	26,480	-2,282
Sep.	43,195	44,029	- 834	22,359	22,909	- 550
Dec.	55,639	47,965	+7,674	28,929	24,956	+3,973
Total	822,969	819,299	+3,670	427,511	426,289	+1,222

TABLE 6 Tourist Arrivals, A^m - Alternative Estimate

Quarter	1966	1967	1968	1969	1970
Mar.		54,434	48,766	53,049	59,745
Jun.		36,997	40,169	43,554	46,574
Sep.	32,334	35,288	34,063	37,730	43,034
Dec.	47,846	46,407	52,230	54,930	55,681

D_t^m , A_t^t and D_t^t are those values given in Tables 3 and 5.

The resulting values of A^m varied only slightly from those for A^{m^i} , the alternative estimate as shown in Table 6. Note that the values in Table 5 maintain comparability with Table 3 and Table 4 and that the values given for $(A^m - D^m)$ and $(A^t - D^t)$ will satisfy (1.7) for T, as shown in Table 3.

Note that

$$P_t^o - P_t^n = \sum T_i = \sum (A_i^m - D_i^m) + \sum (A_i^t - D_i^t) \quad (1.8)$$

where $i = 1, \dots, t$.

That (1.8) holds, can be seen by the fact that the Net Population Effect for the December quarter of 1970, i.e. 4,892, is equal to the total of column (4) Table 3, and to the sum of the totals of columns (3) and (6) Table 5.

However, as it is $\sum (A_t^m - D_t^m)$ which shows the number of tourist visitors in Tasmania at the end of period t, in this case at the end of the December quarter 1970, there is a contradiction to the statement that, $(P_t^o - P_t^n)$ is always greater than the number of tourists in the State for a positive effect, i.e. that it is greater than $\sum (A_t^m - D_t^m)$; this is so as 3,670 is less than the value of 4,892 at the end of the December quarter 1970.

This contradiction would be explained by the application of a constant percentage value to estimate tourist arrivals and departures. In general the rates of arrival and departure would not be constant throughout the year and would be expected to fluctuate somewhat more than shown by Table 5.

Despite this contradiction, the series for tourist arrivals, as shown by Table 5 will be used throughout the rest of this paper as being representative of the number of tourists visiting Tasmania.

Before proceeding to the next section, a further note should be made about the analysis presented above.

If the actual series for tourist arrivals and departures were known then $\sum (A^m - D^m)$ would be expected to be always positive, while $\sum (A^t - D^t)$ would be expected to be always negative. This statement relies on the assumption that the number of tourists in Tasmania at 30th June, 1966 was zero (or regarded as being Tasmanian residents as assumed by the census.)

For actual values, the cumulative series for $(A^m - D^m)$ would show the number of tourists in Tasmania at the end of each period; similarly for the number of Tasmanians out-of-state. Such series, particularly if compiled on a monthly basis, would clearly demonstrate the seasonal impact of the tourist movement, and from which could be derived important conclusions for the demand for tourist goods and services in Tasmania.

The term 'tourist' used here is not the strict definition of a tourist as certain simplifying assumptions were made. However, if it were possible to accurately measure the numbers in the various categories of travellers shown by Table 1, then by adding further variables to the relationships described, the above analysis could be extended in a similar manner to investigate the movement of any category of traveller.

2. THE MEASUREMENT OF LENGTH OF STAY

The second basic component of Gross Income derived from tourist expenditure is the average length of stay.

In many ways it is a far less important problem economically to know the actual number of persons visiting a place or country, than to know the number of days or nights which tourists as a whole stay there. The number of persons may be small, but if they stay long, their contribution becomes important; or the number may be large, but if they merely hurry through, their contribution may be not much more than a basketful of litter. And if the choice had to be made between the measurement of external movement and the measurement of internal, it would be wise to choose internal, - to enumerate, say, 500,000 nights spent in a country by an unknown number of visitors rather than, say, 150,000 visitors spending an unknown number of nights.¹¹

As it is a pre-requisite that tourists are visitors staying at least 24 hours, the unit used for measuring length of stay may be the 'tourist night' or the 'tourist day'.

Ogilvie suggested four methods of calculating length of stay - a. Hotel and Lodging Records; b. a Census Method; c. the Questionnaire Method; and d. an In-and-out Lag Method.¹² These methods are discussed below in relation to the Tasmanian situation.

a. Hotel and Lodging Records.

This system of internal registration might provide some useful information, provided that the managements of hotels (etc.) were willing to co-operate by supplying details of the number of 'guest-nights'.

11. Ogilvie, *op. cit.* , p. 18.

12. *Ibid.* , pp. 18-30.

At least some idea of the amount of tourist spending on accommodation in Tasmania could be gauged, but the figure it would provide for the length of stay of out-of-State visitors would be a very rough estimate; not only would it be necessary to obtain the co-operation of the managements of all the hotels and guest houses in Tasmania, but it would also be necessary to relate the figures so obtained to the total arrival figure in order to arrive at the estimate. Not all visitors will reside at such establishments during their stay, so that the two figures would not be commensurate.

b. Census Method.

Ogilvie regarded the periodical census as an opportunity for taking a rough snapshot of the tourist position and that if the tourist movement is regarded as a constant flow in and out of the country during the year with the total quantity of tourists inside more or less unchanged, then knowledge about the number of tourists present on a certain date, as shown by a periodical census, and how many visitors enter and leave the country in the course of a year, enables the calculation of the average length of time which visitors stayed in the country in the year, provided the census total fairly represents the average total present over the whole year. He warns against expecting a high degree of accuracy if this method is employed.

Average length of stay would be given by $(C.T)/V$, where C is the number of visitors present on census day, T is the length of the period under consideration and for a year is 365

days, and V is the total visitors to the country during that period.

Unfortunately the five-yearly censuses held in Australia do not provide for the distinguishing of visitors from residents for the individual States of the Commonwealth. Only a distinction by place of birth is possible from the information derived but this reflects migration as well as tourist movement. This is one method by which some valuable information concerning tourist visitors could be obtained for Tasmania.

c. Questionnaire Method.

The questionnaire has been the device employed by most countries to measure tourist movement and expenditure. This method has been employed in the past in Tasmania, the most recent occasion being the Government Survey in 1969.

The report on the Survey did not state an average length of stay as it was considered that an unrealistic indication would result due to the wide deviations from the mean at one end of the scale, i.e. for the longer lengths of stay; a table showing certain information for length of stay for both Holiday and Other Visitors was displayed however.¹³ No attempt was made here to extract an estimate for the length of stay, due to inadequate detail.

d. In-and-out Lag Method.

The basic aim of this method is to determine a single

13. The Treasurer, op. cit. p. 15.

average arrival date and a single average departure date, the difference between the two being the estimated average length of stay. The method for arriving at these dates is considered below and applied to the Tasmanian case; the argument used is based on the statistical note by A. C. Aitken in Ogilvie's book.¹⁴

The ideal statistical data for determining the average duration of stay of visitors is the actual arrival and departure dates for all individuals from which the duration of stay could be computed by subtraction and an average computed for all visitors from individual values. The only data available, however, are monthly arrivals and departures, and the situation is slightly complicated by the inclusion in these figures of Tasmanian residents and non-tourists, and also by the carry-over at the ends of the period in respect of people arriving in one period and leaving in the next.

It can be seen from the Monthly Arrivals and Departures shown in Table 7, that a visitor arriving in July 1967 will have his arrival date in that month, and that if his departure date falls in August, his length of stay is the difference between the two dates. If this could be done for all visitors, then having found the differences between the arrival dates and departure dates for all visitors, the average length of stay could then be found by averaging the differences.

But as the difference between the arithmetical means of two

14. See Ogilvie, op. cit., pp. 25-29, 106-110 and 115-123.

TABLE 7 Monthly Arrivals and Departures, Tasmania

Month	1967-68		1968-69		1969-70	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
July	11,736	12,366	10,286	10,716	10,971	11,640
August	19,743	19,104	19,400	19,258	21,739	21,384
September	23,745	23,384	23,621	23,710	26,355	26,550
October	21,641	20,603	25,114	22,568	25,244	23,875
November	17,105	16,251	20,101	18,970	21,228	19,062
December	33,879	25,953	36,522	29,831	39,490	30,366
January	33,851	38,961	36,447	39,580	39,434	45,808
February	21,191	21,871	22,621	23,606	24,760	26,034
March	21,274	21,576	23,951	24,933	29,303	28,612
April	22,014	23,591	22,956	27,210	22,732	26,723
May	26,632	27,041	26,502	27,164	29,162	31,126
June	16,792	18,763	18,702	21,699	20,991	21,671

Source: Deputy Commonwealth Statistician, Commonwealth Bureau of Census and Statistics, Hobart, (unpublished).

different lists is equal to the arithmetical mean of the difference between corresponding elements of the two lists, rather than attempt to find the difference between the arrival and departure dates for all individuals, it is more convenient to find the average arrival date and average departure date and to take the difference between the two to be the average length of stay of all individuals.

The problem remains to calculate from the monthly arrival and departure figures, the mean arrival date and the mean departure date for each of the years shown. If in each case the length of the month is assumed to be 30 days, the arrival

and departure dates may be regarded as being centred at the middle of each month. From these assumptions, the mean arrival date and mean departure date for each of the years shown can be determined as in the normal method of calculating the arithmetical mean of a frequency distribution, where in this case the class interval is 30 days and the number of classes is 12.

To overcome the problem of those individuals who appear only once, in either list, that is those visitors who arrived but did not depart during the year and those who departed but had arrived in the previous year, Aitken suggested paring down by half the arrival figures for the last month of the year and the departures for the first month of the year, and taking the resulting figures as the arrivals and departures for those months; this was done in performing the calculations. To reduce to a minimum the possible error due to the paring of the end months, financial years have been used as the relevant period as the peak of the tourist season in Tasmania is in the summer months.

The results of the calculations for the mean length of stay of visitors for the three years shown revealed the very consistent results of 12.66 days, 13.71 days, and 12.42 days for the years 1967-68, 1968-69, and 1969-70 respectively. Note however that consideration must be taken of the non-tourist elements of the arrival and departure figures; in particular the effect of Tasmanian residents in the arrival and departure figures is to understate the length of stay.

Since residents' departure dates fall before their arrival dates, the difference between the two will be a negative contribution to the estimated length of stay. To adjust for this, the above figures should be increased in the ratio $1:1-2p$, where p is the proportion of Tasmanian residents, taken here to be 33.2%. The readjusted figures were 16.8, 18.3 and 16.6 days respectively, and these should be taken as the correct in-and-out lag estimates of length of stay.

Such figures are generally considered to be overstated. This could be a result of the lack of knowledge about the number of tourist visitors. The use of the published monthly arrivals and departures as a proxy could also affect the accuracy as such figures are compiled from weekly data and are the sums for a certain number of whole weeks. Hence the figures shown in Table 7 would not necessarily be the actual monthly results; for this reason, the monthly arrival and departure figures were not investigated further.

Although no definite conclusion about the average length of stay of visitors to the State has been presented here, details of such for particular types of travellers are known and these will be considered in the next section.

3. THE MEASUREMENT OF EXPENDITURE

This section is concerned with investigating the value of expenditure by tourists in Tasmania.

Difficulty in estimating the value of tourist receipts arises because of the unique way in which the receipts enter the country. They arise through numerous purchases of goods and services actually made within the country at varying times and places.

Unlike other exports, therefore, one cannot assess the amount of foreign exchange that the tourist industry earns by calculating directly the total sale of goods and services consumed by tourists.

The only satisfactory method of obtaining the value of foreign exchange received from overseas tourists . . . is to estimate their total expenditure by sampling the overseas tourists themselves at the completion of their visit.¹⁵

To obtain an estimate of tourist expenditure by some method other than actually asking the tourist himself would entail much more guesswork. One obvious angle, other than sampling, is through the banking system, but such a method could as well lead to an understatement as to an overstatement of actual tourist expenditure, especially in the case of Tasmania where no foreign exchange currency is involved and where interstate movements are much less easily detectible than for international transfers. There is at once a greater likelihood of significant amounts of cash being carried by interstate tourists as well as various possible leakages from other sources. One other

15. P. J. Lloyd, The Economic Development of the Tourist Industry in New Zealand, Research Paper No. 6 of the New Zealand Institute of Economic Research (Inc.), (Wellington: 1964), p. 106.

alternative which could be used to measure the value of tourist expenditure is by keeping an accurate record of hotel lodgings by interstate tourists, however the understatement resulting from a large proportion of visitors who do not stay at accommodation places significantly reduces the effectiveness of such a system.

And yet the problem of the magnitude of tourist expenditure should at least admit of an approximate minimum estimate. There are three main elements to be considered, - transport charges, maintenance charges, and sundries: the last element can never be susceptible of measurement from without, but the other two, transport and maintenance, ought to allow fairly easily of some sort of rough calculation.¹⁶

Fares between the mainland are well known and given that the number of visitors is also known, a rough estimate of expenditure on transport to and from the State could be made. Similarly an estimate of the cost to tourists for maintaining themselves during their stay is possible in certain cases as hotel and lodging charges, and general transport costs are available; if the average length of stay of tourists is known an average daily maintenance cost need only be estimated.

To measure the gross expenditure on fares by tourists coming to Tasmania, the following factors should be considered as each has a certain bearing on the fare charged, -

- (i) The origin of travellers, i.e. ports of embarkation and disembarkation.
- (ii) The age structure of tourists.
- (iii) Class of travel - first class, second class, or concession.
- (iv) Distribution among sea and air travellers.

16. Ogilvie, *op. cit.*, p. 31.

For the purposes of the Government Tourist Survey of 1969, estimates of individual air fares and sea fares were made; the results of these estimates are presented below.

In the case of air travel a single weighted average fare for adults was calculated for travel between the different airports of Tasmania and Melbourne, and according to the two different classes. The average child fare was assumed to be subject to the same weightings as for the derivation of the adult fare.

The weighted single fares calculated were \$19.30 for an adult and \$9.65 for a child, and where the period of the survey was approximately the financial year 1968-69.¹⁷

For the purpose of the survey, the "airlines went to considerable trouble to assess the proportion of their gross revenue from passenger services (as distinct from freight and mail) on Tasmanian routes, which could directly affect the gross income of the State."¹⁸

The reason why only a minor proportion of the fares collected by the airlines from their Tasmanian routes is considered to be spent in Tasmania or to affect the Tasmanian economy was explained by such factors as,

- (a) Most of the fuel and maintenance services are provided on the mainland.
- (b) Much of the administrative work is centralised in Melbourne.
- (c) Most of the depreciation allowances in respect of operations on Tasmanian routes are spent out of the State on replacement of aircraft, etc.

17. The Treasurer, op. cit., p. 26.

18. Ibid., p. 29.

- (d) Most of the flight crews live on the mainland and are paid there.
- (e) Little of the profit, both retained and distributed, from the Tasmanian routes, would find its way to Tasmania.¹⁹

The overall proportion was calculated to be 29.25%.

Thus, given the values estimated in the Government Survey, the value of individual adult fares estimated to directly affect the gross income of Tasmania, can be taken to be \$5.70 for travel one way, and \$11.40 for travel both ways; individual fares for children being half these amounts. The Survey showed there was a tendency for some visitors to travel one way by sea and the other by air, there being more visitor departures by air than for arrivals, with the converse being the case for sea travellers.

In the case of sea fares, the proportion estimated to affect the Tasmanian economy was much lower than for air travel; the proportions were 6.5% for the 'Princess of Tasmania' and 4.0% for the 'Empress of Australia'.

The main reason for the smaller proportion is that whereas the airlines maintain and staff quite large offices and other facilities in Tasmania, the Australian National Line does not need to do so because of the different nature of its operations. All its business is arranged through agents and the only staff employed are a few operating personnel at the four ferry terminals in the State. Another reason is that whereas some fuel is supplied to the airlines in Tasmania, all fuel for the sea ferries is supplied on the mainland.²⁰

From these percentages, the weighted average single fares

19. Ibid., p. 28.

20. Ibid., p. 33.

calculated and the proportion affecting Tasmania, are as follows--

	<u>Single Fare</u>		<u>Double Fare</u>	
	<u>Adult</u>	<u>Child</u>	<u>Adult</u>	<u>Child</u>
	(Tasmanian Proportion)			
'Princess'	\$11.83	\$ 5.84	\$1.52	\$0.74
'Empress': Winter Rate	31.39	14.29	2.50	1.14
Summer Rate	41.51	18.88	3.28	1.52

From the results of the survey it was possible to estimate a percentage split up of Total Visitors according to age, and mode of travel, these are shown below.²¹

Total Visitors -- Arrivals

<u>Mode of Travel</u>	<u>Adult</u>	<u>Children</u>	<u>Total</u>
	%	%	%
Air	89	11	100
Sea : 'Princess'	(76%) 85	15	100
'Empress' : Winter	(8%) 90	10	100
Summer	(16%) 90	10	100
	(100%)		

It was also estimated that of total visitor arrivals, 74% would travel by air and 26% by sea.

For the period of the survey, from April 1968 to March 1969, estimated expenditure by visitors on fares are shown as follows --²²

21. Ibid., see pp. 26-32.

22. Ibid., p. 29 and p. 32.

Estimated Spending on Fares Between Tasmania and Mainland by Visitors

	\$	\$
Air : Total Spending	4,904,729	
Proportion Affecting Tasmania		1,434,633
Sea : Total Spending		
'Princess'	796,030	
'Empress'	741,965	
Proportion Affecting Tasmania		
'Princess'		51,742
'Empress'		29,679
Total Fares	\$6,442,724	
Proportion Affecting Tasmania		\$1,516,054

From the above table and the other important results derived in the Government Survey, it can be seen that the expenditure on fares by visitors coming to the State constitutes an important inflow of funds for Tasmania.

However an analysis of the proportion of the fares which eventually reach the State show that although the Tasmanian tourist industry generates several millions of dollars in the form of fares to and from the State each year, the proportion actually received by the State is very low indeed. Furthermore, approximately one third of the travellers to and from the mainland are Tasmanians indicating that this type of leakage costs Tasmania over two million dollars per annum.

Assuming that the results of the Government Survey are reliable, then the information regarding fares can be used to measure expenditure by tourists; note again that all visitors as measured by the survey are here regarded as tourists. Once an estimate has been formed of the per capita expenditure of tourists inside Tasmania, the addition of the appropriate proportion of the relevant fare gives the expenditure figure per tourist. The problem remains, however, to determine the per capita expenditure of tourists inside the State.

Little can be said about the spending habits of tourists as their expenditure involves such a large range of items. However, as Ogilvie suggested, perhaps a minimum estimate can be made concerning various basic items; such an estimate is more easily envisaged by considering the daily expenditure. The basic items involved are accommodation, food and transport.

Yet it is not possible to define the 'typical tourist' even with regard to the daily expenditure on these three items, as the term 'tourist' includes hitch-hikers, campers, visitors with their own cars, package tourists, businessmen, and so on. Actually sampling the tourists themselves is the only possible way of postulating their behaviour.

However an investigation was carried out of particular types of tourists, i.e. of those included in the published arrival and departure statistics, about whom some information was available. The results of the investigations are presented below with a comparison with the results obtained by the Government

Survey, and in the cases where the desirable information was not available from any of the obvious sources, the Survey results have been used. Information is given about the following groups or particular types of travellers - overseas visitors, package tourists, and visitors bringing their own car and caravan.

a. Overseas visitors

Various estimates exist of the number of overseas visitors. The Government Survey showed that of total holiday visitors, 9.1% were from some place other than the mainland or 9,464. However no provision was made for measuring the origin of other visitors, hence details concerning a very important category, namely overseas businessmen, are lacking.

An origin study of the Tasmanian Tourist Council gave the percentage of overseas visitors as being only 4.1%, where overseas in this sense includes visitors from some place other than the mainland.²³ However once again the Council's study was not intended to measure the business element; the number of holiday visitors from overseas would from the above survey comprise 4,141 people.

Figures published by the Tourist Department for total overseas visitors staying at two of Hobart's leading hotels show that for the years, 1966-67 to 1969-70, the numbers were 1,848, 2,671, 2,410 and 2,514 respectively. These figures would include visiting businessmen as well as those on holiday.²⁴

23. The Manager, Origin Study, A Report from the Tasmanian Tourist Council, Tasmanian Tourist Council, (Launceston : 1969), p. 13.

24. The Director, "Tasmanian Government Tourist and Immigration Department, Report for Year 1969-70", (Government Printer, Tasmania - 1970), p. 7.

Unpublished material obtained from the files of the Tasmanian Government Tourist and Immigration Department revealed bookings for overseas visitors coming to Tasmania by the Sydney Office of the Department for certain years were as follows:

	<u>1967-68</u>	<u>1968-69</u>	<u>1969-70</u>
Number of Visitors	574	509	471
Average number of days	4.00	3.80	3.75

However given all the above information concerning overseas visitors to the State, it is not possible to draw any definite conclusions, except to say that compared to other visitors, they only represent a small proportion of total visitors to Tasmania - at least less than 10%; that their average length of stay is much shorter than the average; but their average daily expenditure could be expected to be much higher than the average considering the high percentage of businessmen and that most could be expected to stay at hotels during their stay in Tasmania.

b. Package tourists

The Government Survey showed that 28.9% of holiday visitors (i.e. of 104,000) and 8.5% of other visitors (i.e. of 77,000) were on package tours. That is 20.2% of total visitors to the State (i.e. of 181,000) during the period of the survey, or 36,562, were what the Government Survey defined to be package tourists; the estimated value of the Tasmanian content of the package tours involved was \$3,540,543.²⁵

25. The Treasurer, op. cit., pp. 16 and 36.

The Tasmanian Tourist Council criticised the Treasury's use of the term 'package tour' in the questionnaire in that it would tend to confuse many of the travellers. It stated that a 'package tour', and its contents, could vary considerably - coach tours are virtually all-inclusive, many 'Fly/Drive' tours do not include meals or petrol and that many other variations exist. The Council's survey showed a higher proportion of visitors on package tours (by coach), however because of the nature of the survey, it being of hotel guests only, this result is understandable. ²⁶

However the text of the Government Report suggests that the term 'package tour' was meant to refer to packaged coach tours only for it states : "About half the package tour visitors to Tasmania are catered for by Tasbureau Tours, operated by the Tasmanian Government Tourist Department. The remainder are catered for by Pioneer Tours and other mainland based operators."²⁷ For the period 1968-69, however, the number of people handled by Tasbureau Tours was only 6,075.²⁸

Thus there is an apparently large overstatement of the importance of coach tours in both the surveys mentioned. The remainder of the Government Survey's estimate of 36,562 could be made up of other types of package tours in the sense of organized school trips and other groups visiting the State.

On investigation of package tours in general, it was found that particularly accurate information could be obtained ~~concerning~~

26. The Manager, Tasmanian Tourist Council, loc. cit.

27. The Treasurer, op. cit., p. 35.

28. The Director, Tasmanian Government Tourist . . . Department, op. cit., p. 9.

concerning coach tours. The results of this investigation are presented below, and were obtained after a thorough analysis of the files of Tasbureau Tours with appropriate adjustments for other tour operators. Unfortunately the confidentiality of much of the information derived restricts the amount of detail which can be presented here; that which is presented is considered to be very reliable. The data refers to all inclusive packaged coach tours operated within Tasmania.

Estimated Number of Tourists on Package Tours --

<u>1966-67</u>	<u>1967-68</u>	<u>1968-69</u>	<u>1969-70</u>	<u>1970-71</u>
10,600	11,400	12,900	14,200	15,300

Estimated Average Length of Stay --

1969-70 only - 9.57 days.

Estimated Average Expenditure per Package Tourist per Day --

1969-70 only - \$10.63 per day.

(This amount refers to the Tasmanian Content only; it refers also to the prepaid part of the package tour.)

Percentage Break Up of Daily Expenditure --

ACCOMMODATION (Expenditure in hotels and other accommodation establishments.)	60.8%
FOOD (Not in hotels etc.)	3.9%
FOOD & ACCOMMODATION	64.7%
TRANSPORT	23.0
SIGHTSEEING (River cruises etc.)	2.3
RETAINED BY TOUR OPERATORS *	10.0
	<u>100.0</u>

(*See Government Survey p. 36.)

Area Break Up of Expenditure by Package Tourists*-

	Food & Accommodation Only	Food & Accommodation & Sightseeing
SOUTHERN TASMANIA	41%	41%
NORTH & NORTH EAST	19	19
NORTH WEST (of Deloraine)	16	16
WEST COAST	14	14
EAST COAST (Orford to St Helens)	10	10
	100	100

(* Refers to Tasmanian content of the pre-paid section.)

Estimated Value to Tasmania of Expenditure by Package Tourists* -

1966-67	1967-68	1968-69	1969-70	1970-71
\$1,078,000	1,160,000	1,323,000	1,445,000	1,556,000

(* Refers to Tasmanian content of the pre-paid section and applies for coach tours only.)

Note again that the term 'package tourist' here is used for those tourists on an all inclusive coach tour of Tasmania, where such a tour is organized by a recognized travel agent or transport company and marketed by that company, and in general the large majority on such tours are adults.

In estimating further types of package tours, and the number of tourists carried, a certain amount of double counting could result. It is unlikely that the coach tour figures would include

many tours organized for school trips. The Tourist Department itself organized party tours for 3,404 persons during 1969-70 as compared to 2,616 the previous year. "The parties handled were predominantly groups of school children or students drawn from Victoria and South Australia in the main."²⁹ (Such tours are organized apart from the coach tours of Tasbureau Tours.) It is known that the Tourist Department also organizes tours lasting up to several days for parties associated with conventions and conferences either during or after such events. Such factors could account for a large answer to the question on package tours in the Government Survey.

Besides the package coach tours, there is also a large number of tourists coming to the State on Fly/Drive tours, arranged in much the same way as coach tours. Such visitors are estimated to account for three to four thousand tourists each year with rapidly growing numbers. It is also estimated that the average car load for these tourists is approximately 2.5 persons, that they travel on average 120 miles each day of their stay, and that although the cost of their tour does not include petrol and not always meals, their itineraries and expenditure patterns are expected to be much the same as for coach tourists. Thus from these observations, it seems reasonable to assume exactly the same details as for the latter.

From these observations, it could be assumed with some

29. Ibid., p. 8.

confidence, that the number of package tourists on an organized packaged tour marketed as such, would approximate 20,000 for the 1970-71 financial year and that the value to Tasmania of the prepaid Tasmanian content for their expenditure would be approximately \$2,000,000, derived from (number of tourists)x(average length of stay)x(average daily expenditure). This figure is somewhat smaller than the estimate arrived at by the Government Survey, though this is apparently due to a mis-interpretation of terms.

Note that the estimated value of expenditure does not cover expenditure outside the cost of the tour. The amount arrived at by the Government Survey for spending by package tours on other items was \$38.06 per holiday visitor and \$60.86 per other visitor. Taking the figure for holiday visitors to be the relevant figure for all package tourists to the State, the average daily expenditure over and above the tour cost would approximate \$4.00 per day. Once the proportion of fares affecting the Tasmanian economy have been included in the spending for package tourists, it could be reasonably assumed that the typical package tourist stays an average of 9.57 days in Tasmania, and his daily expenditure is worth approximately \$15.00. No consideration has been given here to changes in tour costs and prices in general for the periods concerned.

c. Accompanied vehicles

For the purpose of the Government Survey, the Australian National Line indicated that 71% of cars

and caravans shipped from the State by departing travellers belonged to visitors.³⁰ Applying this percentage to total arrivals of cars and caravans, the estimated number of tourist vehicles coming to the State are --

	<u>1966-67</u>	<u>1967-68</u>	<u>1968-69</u>	<u>1969-70</u>
Cars	8,441	8,876	9,043	11,493
Caravans	--	--	290	312

Monthly arrivals and departures were available for the year 1969-70 only. The in-and-out lag method, when applied to the figures for cars, gave an estimated average length of stay for visitors' cars of 27 days. This estimate would appear to be too high, though there is no alternative estimate available for comparison. In the case of tourist vehicles, the rule-of-thumb, "the further the longer" could well apply and with the added expense for car accompanied tourists, their average length of stay could well be greater than the average by a significant margin. The in-and-lag method was not determined for caravans as it was considered that the relative smallness of the figures and often erratic fluctuations in their numbers caused by frequent shipping strikes, would project an unrealistic result.

Little more information is available concerning such visitors except that derived in the Government Survey. Here, although it is not stated specifically, an analysis of the data gives the number of persons per vehicle to be approximately 2.6.³¹ In the

30. The Treasurer, *op. cit.*, p. 33.

31. *Ibid.*, p. 17.

case of freight charges for tourist vehicles, the estimated spending by visitors on transport of cars and caravans to and from Tasmania was \$494,461. However the proportion of this amount reaching the Tasmanian economy was only \$73,557.

The estimated number of tourists bringing their own car to Tasmania are :

<u>1966-67</u>	<u>1967-68</u>	<u>1968-69</u>	<u>1969-70</u>
21,947	23,078	23,511	29,883

There are certain groups of travellers as shown in Table 1 which are not included in the published arrival and departure figures and hence not in the sample of the Government Survey and about whom some information was available; information was also available for non-resident overseas students.

(i) Military personnel - Information was obtained only with regard to visits by naval vessels; the value of expenditure by the crew members is given below while further details and method of derivation are given in Appendix II.

	<u>1966-67</u>	<u>1967-68</u>	<u>1968-69</u>	<u>1969-70</u>	<u>1970-71</u>
Expenditure by Crew Members	\$57,800	\$51,020	\$62,925	\$46,385	\$67,715

(ii) Seamen - Information was obtained only with respect to Japanese fishermen on shore leave. For the years 1969-70 and 1970-71, the numbers of ships berthed were 262 and 323 respectively. The estimated average crew size is 22 and the estimated average length of stay is 2 days, and each crewmember is permitted a

daily allowance of \$10.00 and it is estimated that crewmembers are able to spend at least this amount. The value of the expenditures for the respective years were estimated to be \$115,280 and \$142,120. The Japanese fishing vessels may call at only three Australian ports, namely, Sydney, Fremantle and Hobart.

It was not possible to derive completely precise information concerning other types of seamen and hence no results are presented here. However from the above, perhaps an indication of this type of expenditure is demonstrated.

(iii) Cruise passengers - No precise figures were available on the actual numbers of such visitors, however there is reason to believe the value of their expenditure is almost negligible. Only five or six cruise ships call in Tasmania, passengers do not always take shore visits which are only a matter of hours when conducted and for these reasons the value of their expenditures could be less than \$10,000 per annum.

(iv) Non-resident students - Statistics were available only for overseas students under the direction of the Department of Education and Science from which the information was obtained. The number of such students on formal courses in Tasmania for the calendar years 1967 to 1971 were 106, 119, 107, 112, and 130 respectively. It is also estimated that there are approximately 240 private students from overseas in addition to the above figure for 1971. With an estimated annual expenditure of \$1,900, including educational costs, the estimated value to Tasmania for the year 1971 is approximately \$700,000.

No statistics were available for students from the mainland but it is considered their expenditure in the State would not be as high per student as for overseas students. The value of the contribution by mainland students lies also in the impression of the State they project on the mainland.

Having considered various aspects of tourist expenditure, it is not intended here to present a calculated estimate of the value of tourist receipts for Tasmania for, as the above work has shown, there is little basis on which to do so. The only recognised method of assessing tourist spending with any accuracy is by sampling the tourist population itself, but for the purposes of this dissertation such an undertaking would have proved impractic^{ca}ble.

The intention was to provide new data on certain areas of tourist expenditures and to present those already available in a more precise form in order to demonstrate the problems of measurement and perhaps provide for further analysis of the Tasmanian tourist industry.

Until further research into the behaviour and expenditure patterns of tourist visitors is undertaken, the Government Survey of 1969 will remain the only basis on which future decisions affecting the Tasmanian tourist industry can be made. Although the Treasury should not be criticised on the production of such a valuable report, many desirable aspects were not provided for and certain inaccuracies in choice of definitions and in results achieved tend to detract from its usefulness.

4. MEASUREMENT CONSIDERATIONS

In the preparation of this dissertation, the chief problem encountered was the lack of statistical data related to the tourist industry. Some recommendations for the collection of future statistics are made in this section.

A primary requisite for future research into the tourist industry is that well-constructed definitions be used as the basis for future statistical collections. It is important that tourist industry statistics should not be understated as was apparently the case in the Government Survey of 1969, and that they should be on a comparable basis with other States and other countries. It is therefore suggested that for the term 'tourist' or 'visitor' a definition similar to that used throughout this paper be investigated.

The definition used here is itself, basically one of convenience, however a strong case exists for including all those travellers encompassed by the definition (and as described by Table 1) as tourists, for such travellers, at some stage during their visit, utilize some of those goods and services normally consumed by holiday visitors. Such goods and services are travel (transport to and from the State and within the State), maintenance consumption (including food and accommodation), and recreation.

This is particularly the case for visiting businessmen who not only utilize hotel and motel facilities but often use their

available spare time for the purpose of touring and recreation in general. It is important to note that recreation, in many of its forms is a basic component of tourism facilities, including recreation for both visitors and Tasmanians; the bar trade of an hotel could rightly be regarded as a form of recreational activity.

It is important also to stress the role of Tasmanian residents in the tourist industry's development. Holidays and recreation by Tasmanians in Tasmania should not be regarded as a simple transfer of money from one Tasmanian to another. Their economic value lies in the employment they provide to the tourist industry as a whole, particularly in the off-season, and without which the present stage of development and activity could never have been reached. This factor should be born in mind for future development of the industry.

On the actual collection of statistical data, as there are such a large number of different types of establishments involved in providing for the demands of visitors to Tasmania, the provision of which constitutes much of the income for these enterprises, it would seem that all such organizations should share in the cost of data collection. Particular reference is made to the two national airlines and A.N.L., to the accommodation establishments, and travel agents, as it is these three groups - transport, accommodation and travel agents - who cater directly for the traveller. The co-operation of these basic organizations

with the tourist authorities and the Commonwealth Bureau of Census and Statistics, is a necessary pre-requisite for the provision of adequate statistical data.

The problems of measurement and the types of tourist statistics necessary for Tasmania were considered at length in the text. The most common practice for obtaining such information is by sampling arrivals and departures. However it is desirable that statistics be provided on a more regular and more reliable basis than can be provided by sampling techniques.

A logical source of much information is at the time of purchase of fare tickets by travellers. This of course would place a burden on both the traveller and on the transport company concerned, yet the answers to several questions could provide invaluable detail both for statistical as well as marketing purposes. The information which could be provided for both resident and non-resident travellers could include (i) purpose of visit (as described by Table 1 e.g.), (ii) state of origin, (iii) intended (or actual) length of stay, (iv) sex and age, and (v) mode of travel. The airlines are considering the possible investigation of travellers in this manner for marketing purposes and hence such a method of investigation for statistical purposes could also be incorporated.

A desirable split up for visitors to the State is by purpose of visit. The basic categories are Tasmanian residents, permanent settlers, and non-residents, while the latter type of traveller may be broken up further, for instance, according to Table 1.

Other categories of visitors may be distinguished, e.g. overseas visitors, package tourists, and tourists with accompanied cars. To estimate the value of tourist expenditure and length of stay, it would be necessary to resort to sampling techniques, however, rather than take samples of the whole travelling population, it could prove more rewarding to investigate these two variables for specific types of travellers. The preferred method of inquiry is by personal interview instead of the reliance on return postage questionnaires.³² In the case of expenditure it is desirable to know the break up of average expenditure according to food, accommodation, transport, and so on, as such information is a necessary pre-requisite for investigating other economic aspects of tourism.

There are other important sources for tourist statistics which have been mentioned throughout the dissertation. The most important of these is from the accommodation establishments though data could be collected from caravan and car hire firms, tour operators and travel agents. Another valuable cross check could be provided by way of the periodical censuses if allowance were to be made for the estimation of non-residents.

32. See R. C. Hazell, The Tourist Industry in Hong Kong, 1966, (The Far East Research Organisation Limited for The Hong Kong Tourist Association, 1966).

CONCLUSION

This dissertation has examined only one measure of the value of the Tasmanian tourist industry - the value of tourist expenditure, yet there is the need for further research into other economic aspects of the industry.

In particular the implications of the marked seasonal pattern of the tourist movement and the resulting repercussions on employment in the industry and on the utilization of tourist facilities are areas of necessary investigation.

Tasmania suffers from certain disadvantages which hinder the competitive position of the tourist industry for the Australian and international tourist market. Until these disadvantages, resulting from the variability of the climate of the State and the distance from potential visitors, are surmounted, the seasonality factor will persist.

If the authorities, both public and private, are interested in fostering the growth of the industry and in expanding Tasmania's share of the tourist market, it will be necessary to provide various attractions which can maintain a fairly constant stream of visitors to the island throughout the year and also preserve the State's competing position for potential investment in tourist facilities. Yet the problem remains to prove the relative worth of tourism to Tasmania.

If the Tasmanian tourist authorities are interested in improving the competing position of the tourist industry for both private and public funds, it will be necessary to undertake more detailed research into the economic value of tourism to Tasmania. To do this will require the collection of certain statistical data, and it is hoped, that by having considered certain measurement problems of the industry, that this dissertation will serve a useful purpose in this regard.

APPENDIX I

Estimated Migration Movement - Derivation of Table 2.

(a) Net Migration

Net Migration was obtained for each quarter by subtracting the increase in the population for the corresponding quarter. Note that the estimate derived here refers to the new method of population estimation.

Source: Deputy Commonwealth Statistician, Tasmanian Monthly Summary of Statistics, Commonwealth Bureau of Census and Statistics (Hobart : September 1966 to December 1970), p. 5.

(b) Overseas Migration - Arrivals and Departures

Source: Commonwealth Statistician, Overseas Arrivals and Departures, Commonwealth Bureau of Census and Statistics, (Canberra : September Quarter 1966 to December Quarter 1970), Section II. - Permanent and Long-Term Movement:-Table: Permanent movement, settlers arriving and Australian residents departing: State or Territory of intended/last residence.

The introduction to this table states -

Settlers are asked, on or before arrival, the State or Territory of Australia in which they next intend to stay for twelve months or more. THE STATEMENTS REPRESENT THE SETTLERS' INTENTIONS AT THE TIME. MANY TRAVELLERS SUBSEQUENTLY CHANGE THEIR INTENTIONS AND THIS MUST BE BORNE IN MIND IN INTERPRETING THE STATISTICS.

On the assumption that the settlers' intentions were carried out the estimates were formed as follows.

Arrival figures were obtainable by quarterly periods from September 1966, however certain settlers did not name

the State/Territory of intended residence. A proportion of 1% of those who did not name the State/Territory have been added to the Tasmanian figure for the corresponding quarter. The value of 1% was chosen on the basis that the percentage that Total Tasmanian Arrivals was of (Total Australian Arrivals less the number not stated) each quarter was, on the average, that value.

Departures were obtainable only from the December Quarter, 1967, onwards. The figure for Departures from Tasmania was once again adjusted for those who did not name their State/Territory of last residence, the value of adjustment being, in this case 1.5%. To arrive at figures for those periods for which none were available, the arithmetic mean of the available thirteen quarters has been used. The assumption should not differ markedly from the actual figures, although an analysis of the trend for the available periods appears to indicate an overstatement for the preceding quarters by using the average value of 156 per quarter. Such an overstatement should not bear much significance, for as a percentage of total travellers to and from Tasmania, the amount is almost negligible.

(c) Interstate Migration - Arrivals and Departures

These estimates are based on a method employed by A. J. Hagger¹ and upon tables produced by the Hunter Valley

1. A. J. Hagger, "An Estimate of Travel Expenditure by Non-Tasmanians in Tasmania and by Tasmanians outside Tasmania, 1952-53 to 1956-57," Papers and Proceedings of the Royal Society of Tasmania, Vol. 93, 1959, p. 158.

Research Foundation.² Similar tables have been reproduced below.

Birthplace of Tasmanian Population

Birthplace	1961	1966	Net Change 1961 - 1966
Tasmania	288,082	302,935	+14,853
Other Australia	29,396	32,628	+ 3,232
Overseas	32,862	35,853	+ 2,991
Total Population	350,340	371,416	+21,076

Source: Commonwealth Bureau of Census and Statistics, Census Bulletin No. 6.1, Summary of Population, Tasmania, p. 9.

Net-Migration by Birthplace, 1961-66

Birthplace	Natural Increase	Intercensal Population Change	Net Migration
Tasmania	+29,290	+14,853	-14,437
Other Australia	- 1,325	+ 3,232	+ 4,557
Overseas	- 1,475	+ 2,991	+ 4,466
Total	+26,490	+21,076	+ 5,414

Source: Derived from Table 2-5 - The Hunter Valley Research Foundation, Tasmania in the Seventies, p. 2-7

The above two tables are derived as follows.

For the intercensal period, 1961-1966, the classification of population change for the period can be used to derive estimates of net migration according to birthplace. Net migration for the period is calculated by subtracting natural increase from the actual population change during the period;

2. The Director of Research, Tasmania in the Seventies, The Hunter Valley Research Foundation, (Newcastle, 1970), pp. 2-6, 7.

the population change for the period was 21,076 with a natural increase of 26,490 leaving a net migration value of -5,414.

It is . . .

necessary to separate natural increase (i.e. births minus deaths) according to birthplace. All births, regardless of parent's birthplace are of course Tasmanian-born, and the problem here is to classify the number of deaths during 1961-66 according to birthplace. This information is not published but the Deputy Commonwealth Statistician has made available a rounded figure of 2,800 for intercensal deaths of non-Tasmanian born.³

In order to divide the 2,800 deaths of non-Tasmanian born into deaths of Other Australia and Overseas born, values for the proportion of total population according to birthplace for the two groups were used.

Proportion of Total Population According to Birthplace

Birthplace	1961	1966	Mean Percentage
	%	%	%
Tasmania	82.83	81.56	81.89
Other Australia	8.39	8.78	8.59
Overseas	9.38	9.65	9.52
	100.00	100.00	100.00

Source: Commonwealth Bureau of Census and Statistics, Census Bulletin No. 6.1, Summary of Population, Tasmania, p. 11.

The 2,800 deaths of non-Tasmanian born were allocated to Other Australia and Overseas birthplaces in the ratio of 8.59:9.52, to give the values for natural increase by birthplace as shown in the table headed 'Net-Migration by Birthplace, 1961-66'. The figures used in the first two tables of this

3. Ibid., p. 2-7.

Appendix have not been adjusted for revised estimates of the 1966 census results, the correction being an increase in the estimate for the Tasmanian population of 19 to 371,435.

An estimate for the number of interstate migrants coming to Tasmania for the period 1966-71 was derived using the following assumptions.

It was assumed that the net migration component for Other Australia of 4,557 as shown above in the second table, represented the total inflow of interstate migrants for the period 1961-66, and that this pattern would continue at the same rate for the succeeding intercensal period of 1966-71. It was thus assumed that the average number of migrants arriving in Tasmania from other parts of Australia for each of the quarters since June 30th, 1966 was 228; this is shown in column four of Table 2, Section 1.

The drawbacks of this assumption include⁴ -

(i) It assumes that interstate migration involved no overseas born element, but this is not all that serious as it will be counteracted to a certain extent by the inclusion of some Australian-born in the Overseas arrivals figures of Table 2.

(ii) The figure 4,557 is the difference between the number of Other Australian born enumerated in Tasmania at 30th June for the two census years, namely 29,396 and 32,628. Both these figures contain a certain number of Other Australia born

4. Hagger, loc. cit.

who had not migrated to Tasmania but who were visiting the State only temporarily.

(iii) The figure is a definite understatement of the number who migrated to Tasmania from interstate as it does not allow for people arriving and departing, for migration purposes during the intercensal period.

The assumption concerning interstate migration has no statistical justification except the undisclosed migration estimates used for determining the net migration element in the population changes. However, the method does give a valuable guide to the size of the interstate migration movement and even if the actual movement is understated here, the indication is that the number of interstate migrant travellers would be fairly insignificant in relation to the sum of total arrivals and departures of all travellers for Tasmania.

On these grounds, an estimate has been formed for the number of migrants arriving from interstate to settle in Tasmania for each quarter for the period under consideration and appears in column (4) of Table 2.

To arrive at an estimate for the numbers migrating from Tasmania for permanent residence elsewhere in Australia, the assumptions used in measuring the number of arrivals from interstate migration are implied. This is the case, for the figure for interstate migrant departures is taken to be equal to Net Overseas Migration plus Number of Interstate Arrivals less Net Migration, i.e. $\text{Net Migration} + \text{Net Overseas Migration}$

APPENDIX II

Estimated Spending in Tasmania by Crew Members of Visiting
Naval Vessels

	1966-67	1967-68	1968-69	1969-70	1970-71
Number of Ships	19	13	27	13	9
Total Crew	4,257	2,645	4,153	3,635	3,370
Total Ship Days	15,817	12,849	16,738	12,912	16,913
Total Days Ashore	11,560	10,204	12,585	9,277	13,543
Av. Ship Days	3.7	4.9	4.0	3.6	5.0
Av. Days Ashore	2.7	3.9	3.0	2.6	4.0
Av. Expend./Crew	\$13.50	\$19.50	\$15.00	\$13.00	\$20.00
Total Expenditure	\$57,800	\$51,020	\$62,925	\$46,385	\$67,715

Source: Royal Australian Navy, Hobart.

For each vessel, the number of days of shore leave available to each crewmember is one less than the length of stay of the vessel; the other day being for ship duty. This system operates regardless of length of stay of the vessel and of the size of the complement of the vessel. Hence Total Ship Days is greater than Total Days Ashore.

Expenditure by crewmembers was estimated at \$5.00 per day for the five years under consideration.

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