

An Assessment of Tasmania's Interstate Transport Problems

Report

This study attempts a quantitative assessment of Tasmania's transport disabilities relative to the other States and covers interstate shipping to Tasmania, together with closely related topics such as Tasmanian port operations and freight forwarding. Particular note has been taken of the Senate Standing Committee on Primary and Secondary Industry and Trade Committee's views that Tasmania has a 'transport disability' and that any comparisons should take into account its position as a sovereign state.

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BUREAU OF TRANSPORT ECONOMICS

AN ASSESSMENT OF
TASMANIA'S INTERSTATE
TRANSPORT PROBLEMS

AUSTRALIAN GOVERNMENT PUBLISHING SERVICE

CANBERRA 1973

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ISBN 0 642 00251 7

Printed by Community Press, 6 Kembla Court, Kembla Street, Fyshwick.

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ACKNOWLEDGMENTS

The following agencies supplied information and provided other assistance necessary to the preparation of this report. Their generous co-operation is gratefully acknowledged.

Commonwealth Bureau of Census & Statistics, Canberra
Commonwealth Bureau of Census & Statistics, Hobart
Department of Civil Aviation
Director of Industrial Development, Tasmania
Tasmanian Transport Commission
Tasmanian Railways
New South Wales Government Railways
Victorian Railways

Marine Board of Hobart
Marine Board of Burnie
Marine Board of Devonport
Port of Launceston Authority

The Australian National Line
Union Steamship Company of New Zealand Ltd
William Holyman & Sons Pty Ltd
Ansett Airlines of Australia
Trans-Australia Airlines

Ansett Freight Express Pty Ltd
Brambles Long Distance Transport
Frank Hammond Pty Ltd
Mayne Nickless Ltd
Thomas Nationwide Transport

Chambers of Commerce, Tasmania
Tasmanian Chamber of Manufactures
Tasmanian Timber Association
Tasmanian Road Transport Association
Victorian Road Transport Association

Associated Pulp & Paper Mills Ltd
Australian Newsprint Mills Ltd
Blundstones Pty Ltd
Cadbury Schweppes Pty Ltd
Coats Patons (Australia) Limited
Comalco Ltd
Goliath Portland Cement Co. Ltd
Gordon Edgell Pty Limited
H. Jones & Co. Pty Ltd
Kauri Timber Co. (Tas.) Pty Ltd
Kraft Foods Limited
Murex Pty Ltd
Renison Limited
Trioxide Australia Pty Ltd
Wander (Australia) Pty Ltd

SUMMARY

It has been claimed that Tasmania, having no land transport links to other States; suffers peculiar transport disabilities. Comparisons with hypothetical road and rail links between Tasmania and Melbourne suggest a notional transport cost disadvantage ranging between \$1 and \$5 per ton for most classes of goods. The disadvantage may be as high as \$25 per ton in the case of very low density cargoes. Tasmania suffers no disadvantage in the shipment of bulk cargo.

The high cost of non-bulk cargo movements is caused partly by the necessity to use sea transport, partly by the relatively small size of the Tasmanian economy and, hence, of the traffic it generates, and partly by inefficiencies in the existing system.

An analysis of shipping costs indicates that the freight rate is made up of approximately 51 per cent line haul costs, 21 per cent terminal costs and 28 per cent wharfage charges paid to the ports. Thus, economies should be sought as much in terminal and port costs as in the actual sea line haul costs.

It is calculated that an efficient vessel in the Tasmania trade could operate at a total cost per ton some 10 per cent lower than the present average freight rate. Because losses are being made by the shipping lines, reductions in the freight rate of this magnitude could not be expected. Some of the present vessels are relatively efficient and the losses in the trade are due in large part to employing an assortment of efficient and inefficient ships.

An illustrative study of various alternative shipping arrangements for freight to northern Tasmania indicates that moderate savings could be made by using more appropriate vessels. Two ships to northern ports could provide a six times weekly service at a cost about one dollar per cargo ton below present costs. A service with a single larger vessel would lead to further savings of about another dollar per cargo ton, but the frequency of sailing would drop to twice a week.

Another major cause of loss, in the case of the Australian National Line, is the operation of a sea passenger service. The passenger service carries only 20 per cent of those travelling to and from Tasmania. These passengers could be carried by air, with any accompanying cars being carried by sea. In this case, it is estimated that the total saving could be \$1m annually.

There is over-investment and under-utilisation of non-bulk cargo facilities at the four major Tasmanian ports. The shipping line practice of having a uniform inclusive freight rate to northern ports eliminates any incentive to lower the charges for port services. There has been excessive investment in terminals to attract ship calls, five roll-on/roll-off terminals being available in northern Tasmania to do the work of two efficiently utilised terminals.

A central authority should be set up to plan and control development of Tasmanian ports in the best interests of Tasmania. However, this would not provide an escape from existing debts. Some reduction of port charges could be achieved through re-structuring to eliminate the financing of capital directly from revenue. This could lead to a saving in wharfage of between 15 and 25 cents per ton.

Freight forwarding in Tasmania is carried on under constraints: the forwarders consider it necessary to maintain depots in all major Tasmanian centres for relatively small volumes, and the traffic imbalances are considerable. Forwarders could make the system more efficient by arranging among themselves to rectify some of the imbalances. More efficient use of equipment appears desirable but this development is inhibited by the small total volume of traffic, the number of depots and the large number of forwarders. No objection is seen to ANL having the right to operate as a freight forwarder, but it does not seem desirable to further fragment the business by increasing the number of major forwarders.

CHAPTER 1. INTRODUCTION

On 3rd September, 1970, the Australian Senate resolved that the Senate Standing Committee on Primary and Secondary Industry and Trade should have the following matters referred to it:

'The operation of the Australian National Line's shipping services to and from Tasmania with regard to:

- (a) the factors considered in establishing freight rates;
- (b) the appropriateness of the current level of freight rates; and
- (c) any amendments necessary or desirable to the governing legislation to enable the operation to be carried out at the lowest possible freight rate.'

The Committee undertook an extensive enquiry, and in its Report, dated June 1971, recommended that 'the Bureau of Transport Economics be asked to attempt a quantitative assessment of Tasmania's transport disabilities relative to the other States.'⁽¹⁾ The matter was referred to the BTE by the Minister for Shipping and Transport, the Honourable P.J. Nixon, in October, 1971.

THE SENATE STANDING COMMITTEE'S VIEW OF THE PROBLEM

It was stated in the Report of the Senate Standing Committee that 'this inherent inflexibility of shipping by comparison with road and rail transport constitutes a definite disability for Tasmania which lacks the alternatives in interstate trade of other modes of transport which are available to other States.'⁽²⁾ The Committee took the view that 'in short haul services of the sort operating between Tasmania and the mainland shipping is a transport mode of high cost'.⁽³⁾ However, it recognised that 'the available

(1) Freight Rates on Australian National Line Shipping Services to and from Tasmania: Report from the Senate Standing Committee on Primary and Secondary Industry and Trade, 1971, p.72.

(2) *ibid*, p.56.

(3) *ibid*, p.36.

statistics and information do not lend themselves to exact quantitative assessment of the degree of disability.'⁽¹⁾

The Committee also considered what areas Tasmania should be compared with. 'Our view is that less than justice would be done to a sovereign State if its position, even in an issue such as this, were to be judged primarily by comparison with the situation of a variety of isolated communities which are parts of States. Such a comparison would not be wholly valid by the very reason that Tasmania is a State.'⁽²⁾

OUTLINE OF STUDY

In this study, the BTE has taken as its starting point the recommendations of the Senate Standing Committee. Particular note has been taken of the Committee's views that Tasmania has a 'transport disability' and that any comparisons should take into account its position as a sovereign state. The study deals with interstate shipping to Tasmania, together with closely related topics such as Tasmanian port operations and freight forwarding.

The first question to be considered is why transport is important to Tasmania. The brief review of the Tasmanian economy in Chapter 2 indicates its sensitivity to transport and transport costs.

Underlying some of the Senate Standing Committee's findings, was the view that the cost incurred in transporting goods from Tasmania to the mainland is considerably greater than the cost of transporting them over comparable distances on the mainland. It has been argued that this is due to railways being subsidised and roads being provided at less than cost to road operators. Chapter 3 reviews the difference between Tasmania and mainland freight rates, and deals with the question of subsidies.

In Chapters 4, 5 and 6, shipping is examined. It became clear very early in the investigation that bulk shipping posed no more problems in Tasmania than anywhere else in Australia. Bulk

(1) *ibid*, p.36 .
(2) *ibid*, p.36 .

shipping services between mainland ports were similar to the bulk services to Tasmanian ports, the costs were comparable and there was no expression of dissatisfaction about the way Tasmania was treated. Thus, Chapters 4 to 6 concentrate on non-bulk cargo and passengers.

Recently, there has been considerable controversy within Tasmania concerning the port system, as well as the internal transport system.⁽¹⁾ Chapter 7 examines the facilities, charges, capital expenditure and future development plans of the four main ports. Their charges and operations are compared with those of mainland ports, and the possibility of containing or reducing their charges is investigated.

Most consignors to or from Tasmania have no choice but to use freight forwarders. Chapter 8 discusses the influence of freight forwarding charges on total transport costs in Tasmania and considers whether any changes should be made to improve the situation for shippers.

Passenger services operated by ANL are not meeting their costs and a possible strategy would be for all passengers to travel by air. With cargo ships, some economies can be achieved by changing ship sizes and frequency of calls. Both of these matters are discussed in Chapter 9.

A set of Annexes provides more detailed statistics and information on specific topics.

(1) Much of the controversy has centred around a report commissioned by the Tasmanian Government:
P.G. Pak-Poy and Associates, Study of Transport of Goods for Tasmania, 1971.

CHAPTER 2. INTERSTATE TRANSPORT AND THE TASMANIAN ECONOMY

Tasmania's population of nearly 400,000 is about three per cent of Australia's total. Tasmania also accounts for about three per cent of the net value of all primary and secondary production and of the value of Australia's overseas exports.

The major components of Tasmanian economic activity for the year 1967-68 are shown as estimates in Figure 2.1.⁽¹⁾

Salient points are that:

- . the value of exports (interstate and overseas) is almost the same as the value of goods consumed together with the addition to the stock of capital goods
- . the value of exports is a little over 50 per cent of the gross value of primary and secondary production combined
- . more than twice as much of the output of primary and secondary industries is exported as is consumed locally
- . of the value of goods consumed (including additions to the stock of capital goods) more is imported than is produced locally.

By far the greater part of Tasmania's external trade is with the mainland. In 1967-68, the year for which the data in Figure 2.1 were compiled, some 83 per cent of Tasmania's merchandise imports and 76 per cent of its exports were traded with the mainland. In 1971-72, the proportions were 87 per cent and 63 per cent respectively.

(1) Some of the data on which these estimates were based were not available for years after 1967-68. However, the basic relationships would be applicable to later years.

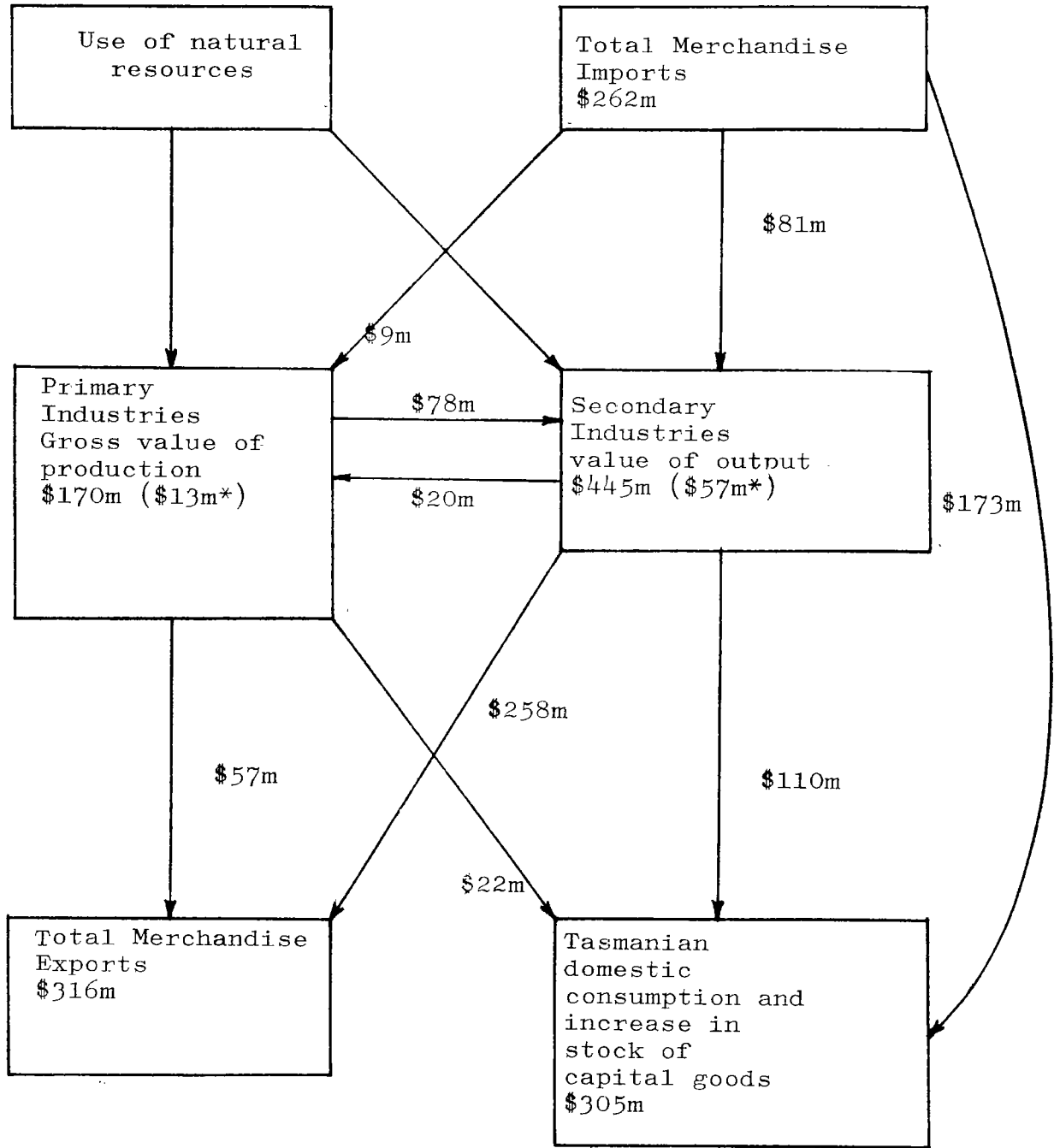


FIG. 2.1 - TASMANIAN ECONOMIC ACTIVITY, 1967-68
(Some components have been estimated)

NOTE: Figures with asterisks (*) indicate value of output retained within the sector concerned.

Some components may not add to totals because of rounding.

VALUE OF IMPORTS AND EXPORTS

Details of the value of Tasmanian overseas and interstate trade by commodity classes for the year 1971-72 are shown in Table 2.1:

TABLE 2.1 - TASMANIAN EXTERNAL TRADE IN MERCHANDISE, 1971-72
(\$ million)

Commodity Classes	Imports from-		Exports-	
	Over-seas	Inter-state	Over-seas	Inter-state
Food and live animals	3.8	35.4	38.2	57.8
Beverages and tobacco	..	17.8	..	0.3
Crude materials, inedible, except fuels	11.4	21.6	70.4	64.0
Mineral fuels, lubricants and related materials	3.6	25.1	..	..
Animal and vegetable oils and fats	..	0.6	1.2	0.1
Chemicals	3.1	28.0	3.0	23.0
Manufactured goods	7.3	49.1	65.3	151.7
Machinery and transport equipment	8.4	68.0	0.7	3.9
Miscellaneous manufactured articles	1.2	28.0	..	2.4
Other merchandise	0.7	..	..	..
By air		20.6		29.4
By sea	39.5	253.0	178.8	273.8
TOTAL:	39.5	273.6	178.8	303.2

Source: Commonwealth Bureau of Census and Statistics

Imports into Tasmania comprise many different commodities. The single item with the greatest value imported from overseas in 1971-72 was pulp for paper-making, valued at \$9m. The most important items imported from interstate were transport equipment, mainly motor vehicles (\$40m), and petroleum products (\$24m), while other significant items were machinery (non-electrical) (\$17m), chemical elements and compounds (\$15m), metalliferous ores and concentrates (\$15m), and iron and steel (\$14m).

Tasmanian exports are dominated by production from the primary industries and large mining and manufacturing plants located on the island. Separate export figures for some of the products of these plants are not published because of their confidential nature. However, recorded exports to overseas countries in 1971-72 included metalliferous ores and concentrates (\$55m), refined zinc (\$41m), meat (\$12m), fresh fruit (\$11m), and wool (\$11m). The principal identifiable items sent interstate in 1971-72 were metalliferous ores and concentrates (\$34m), textile yarn, fabrics and made-up articles (\$30m), timber (\$17m), preserved vegetables (\$16m), and refined zinc (\$14m). Other major items exported interstate included refined aluminium, titanium dioxide, newsprint, fine papers, chocolate and confectionery, cement, ferro-alloys, food beverages, hardboard, particle board, plywood and wood pulp for paper-making.

INTERSTATE FREIGHT MOVEMENTS

In 1971-72, Tasmania's interstate freight movements (excluding tourist vehicles) amounted to 4.8m cargo tons,

about 98 per cent of which was carried by sea.⁽¹⁾ Air freight is restricted to light-weight, high value goods and to goods requiring speedier transport than is available by sea.

Interstate freight can be divided into bulk and non-bulk goods. All bulk goods are carried by sea and are handled either through specialised port installations (e.g. petroleum, acid, cement) or in loose form (e.g. clay, concentrates) and often involve the use of specialised ships. Non-bulk goods, on the other hand, are either items carried in cargo trays, slings, containers or trailers, or are themselves discrete items of equipment such as motor vehicles.

Table 2.2 shows that in 1971-72 twice as much bulk freight was carried to Tasmania from the mainland as in the opposite direction. By contrast, slightly more non-bulk interstate freight leaves Tasmania than is imported.

(1) Because shipping services mainly sell space, with less emphasis on weight, freight tonnages are referred to in terms of 'cargo tons'. Commodities occupying 40 cu ft per ton weight or more are counted in units of 40 cu ft. Commodities occupying less than 40 cu ft per ton weight ('dense cargo') are counted by tons weight. Thus, for a mixed load of commodities the number of 'cargo tons' recorded would exceed to a small extent the measurement of the cargo in terms of units of 40 cu ft of space actually occupied ('the shipping ton'). Any measurement of freight expressed in 'cargo tons' or 'shipping tons' would exceed the weight of total freight transported, possibly by a factor of about two. Figures of cargo tons included in most tables have been derived from records of the Tasmanian port authorities. This source has provided information on ports and ships by month and by mainland port involved; these data were not readily available from other sources.

TABLE 2.2 - TASMANIAN INTERSTATE FREIGHT MOVEMENTS, 1971-72
('000 cargo tons)

	To Tasmania	From Tasmania	Total
By air (a)	65	50	115
By sea -			
Bulk	1,736	887	2,623
Non-bulk	1,003	1,089	2,092
Tourist vehicles (b)	172	173	345
	2,911	2,149	5,060
TOTAL	2,976	2,199	5,175

(a) Includes airline traffic moving through Hobart, Launceston, Devonport and Wynyard airports and an estimate for charter operators to Launceston. Airline figures are overstated to the extent of traffic moving between Tasmanian airports. Figures have been converted to cargo tons on the basis of five cargo tons to one short ton of 2,000 lb (assuming a density of 200 cu ft per short ton).

(b) Estimated on the basis of 10 cargo tons for each vehicle carried.

Sources: Department of Civil Aviation
Tasmanian Port Authorities

Bulk freight

Bulk freight tonnages into Tasmania are dominated by minerals and mineral products (mainly for processing) and by petroleum products. Bulk mineral imports in 1971-72 totalled 731,000 tons, including zinc concentrates 305,000 tons, bauxite 204,000 tons, manganese ore 148,000 tons and ilmenite concentrate 50,000 tons. In addition, a further 109,000 tons of alumina and aluminium fluoride were imported. Imports of petroleum products into Tasmania in 1971-72 totalled 684,000 tons. Other significant bulk commodity imports were coal and wheat.

The most important bulk commodities shipped interstate from Tasmania in 1971-72 were sulphuric acid 241,000 tons, cement about 200,000 tons, refined zinc 183,000 tons and wood pulp 140,000 tons. In addition, 50,000 tons of ferro-manganese and 33,000 tons of base-metal mineral concentrates were sent interstate.

Non-bulk freight

Non-bulk freight brought into Tasmania from interstate consists mainly of consumer goods. Non-bulk freight exported from Tasmania includes large quantities of manufactures which account for a much greater proportion of the value of Tasmania's interstate trade than tonnage figures would indicate.

In 1971-72, interstate non-bulk freight shipments into Tasmania amounted to 1,003,000 tons while outward shipments were slightly greater, at 1,089,000 tons. The distribution of these tonnages among Tasmanian ports and the respective mainland ports is shown in Table 2.3.⁽¹⁾

(1) The mainland ports shown are those directly linked with Tasmania by the shipping services. They are not necessarily the origins and destinations of the freight.

TABLE 2.3 - TASMANIAN INTERSTATE NON-BULK FREIGHT (a) MOVEMENTS

BY SEA, 1971-72					
(Cargo tons)					
	Hobart	Burnie	Devon- port	Laun- ceston	Total
SOUTHBOUND					
From Melbourne	185,510	135,284	260,660	217,594	799,048
" Sydney	96,665	22,287	..	41,955	160,907
" Adelaide	21,881	20,486	..	650	43,017
Total south-bound	304,056	178,057	260,660	260,199	1,002,972
NORTHBOUND					
To Melbourne	188,986	167,901	212,132	187,319	756,338
" Sydney	169,384	56,708	15,193	47,351	288,636
" Adelaide	21,811	13,961	..	..	35,772
" Brisbane	7,980	..	..	..	7,980
Total north-bound	388,161	238,570	227,325	234,670	1,088,726

(a) Excludes tourist cars and caravans.

Source: Tasmanian Port Authorities

More than 30 per cent of total interstate non-bulk freight passed through Hobart while the remainder passed through the three northern ports, in nearly equal amounts. At Burnie and Hobart, shipments of non-bulk freight to the mainland exceeded shipments from the mainland by 34 and 28 per cent respectively. Devonport and Launceston had excesses of inward over outward non-bulk shipments of 15 per cent and 11 per cent respectively.

INTERSTATE PASSENGER AND TOURIST VEHICLE MOVEMENTS

Of considerable importance to the Tasmanian economy are the movements of tourists and their vehicles to and from the island. In 1971-72 some 640,000 persons travelled to and from Tasmania, a number that is 60 per cent greater than Tasmania's total population. Many of these passengers were tourists (either persons from other States visiting Tasmania or Tasmanians visiting the mainland) but the exact numbers are not known. These tourists took 34,500 tourist vehicles to and from Tasmania in 1971-72.

Total spending in Tasmania by non-residents (i.e. by tourists and persons attending sporting carnivals, conferences and similar functions) was estimated to be \$16m in 1968-69⁽¹⁾ and \$21.2m in 1971-72.⁽²⁾

The numbers of passengers and tourist vehicles travelling to and from Tasmania in 1971-72 are shown in Table 2.4.

(1) Tasmanian Year Book, 1972, p. 118.

(2) Hobart Mercury, 1 February 1973. This was a report on the findings of a recent study of the economic significance of tourism in Tasmania prepared by Peat, Marwick, Mitchell and Co.

TABLE 2.4 - TASMANIAN INTERSTATE PASSENGER AND TOURIST VEHICLE
MOVEMENTS, 1971-72
('000)

	To Tasmania	From Tasmania	Total
Passengers -			
By air (a)	272.7	274.7	547.4
By sea	64.6	63.9	128.4
Total	337.3	338.6	675.9
Tourist vehicles -			
Cars	16.7	16.8	33.5
Caravans	0.6	0.5	1.0
Total	17.2	17.3	34.5

(a) Airline traffic through Hobart, Launceston, Devonport and Wynyard airports. Figures are overstated to the extent of passengers moving between Tasmanian airports. This overstatement could be of the order of 30,000 passengers in total.

NOTE: Totals may not add because of rounding.

Source: Department of Civil Aviation
Australian National Line

Air transport currently carries about 80 per cent of Tasmania's interstate passengers. All Tasmanian interstate air services are linked with Melbourne, and operate daily to Hobart, Launceston, Devonport and Wynyard (the airport for Burnie).

Two-thirds of the sea passenger movements pass through Devonport. Current schedules have the 'Empress of Australia' making three return crossings between Melbourne and Devonport each week, with the 'Australian Trader' making three return voyages each fortnight between Sydney and Tasmanian ports. Two of these voyages by the 'Australian Trader' follow the route Sydney-Bell Bay- Burnie- Sydney and the third calls only at Hobart.

Tourist vehicle movements are closely linked with passenger movements. At an equivalent cargo tonnage of 10 cargo tons per vehicle, tourist vehicles make up a significant proportion of total space occupied on ships and of the cargo on which wharfage is paid to port authorities. In both instances the payment on tourist vehicles is less than for the equivalent amount of freight. As a further concession, tourist vehicles have loading priority ahead of normal freight.

TRENDS IN TRAFFIC MOVEMENTS

Details of passengers and freight carried interstate to and from Tasmania by air and sea for the years 1961-62 to 1971-72 are set out in Table 2.5.

TABLE 2.5 - TASMANIAN INTERSTATE PASSENGER AND FREIGHT MOVEMENTS

Year	Passenger movements(a)			Total Freight movements			
	('000)			('000 cargo tons)			
	By air (b)	By sea	Total	By air (abc)	By sea (d)		
					To Tas.	From Tas.	Total
1961-62	308	88	396	80	1,193	775	1,968
1962-63	325	91	416	68	1,418	946	2,364
1963-64	356	91	447	70	1,442	912	2,354
1964-65	390	102	492	78	1,582	1,086	2,668
1965-66	411	112	523	80	1,766	1,092	2,858
1966-67	444	114	558	83	2,303	1,193	3,496
1967-68	453	115	568	84	2,459	1,359	3,818
1968-69	493	115	608	86	2,640	1,531	4,171
1969-70	512	133	645	91	2,698	1,675	4,373
1970-71	557	125	682	96	2,738	1,832	4,570
1971-72	547	128	675	89	2,911	2,149	5,060

(a) Includes traffic moving both to and from Tasmania. (b) Total airline movements through Hobart, Launceston, Devonport and Wynyard airports. Includes a small amount of traffic between Tasmanian airports. (c) Estimated on the basis of 5 cargo tons equals one short ton of 2,000 lb. Excludes freight carried by air charter operators which in 1971-72 is estimated to amount to 20,000 cargo tons. (d) Includes tourist vehicles.

Sources: Bureau of Census and Statistics
 Tasmanian port authorities
 Australian National Line
 Department of Civil Aviation

In the decade to 1971-72, the total number of passengers moving interstate to and from Tasmania has increased by 70 per cent whereas total freight carried by sea (bulk and non-bulk) has increased by 157 per cent. Freight carried by airlines, which is very small in comparison with sea freight, has increased by only 11 per cent.

Information provided by shipping companies indicates that in recent years there has been little growth in non-bulk freight carried to and from Tasmania. The increases in total tonnages over recent years have been mainly due to increases in bulk freight which have been the result of additional raw materials being imported into Tasmania for processing (e.g. ores and concentrates) and to new bulk commodities exported to the mainland (e.g. sulphuric acid and wood pulp).

CHAPTER 3.

INTERSTATE FREIGHT RATES

It was stated in submissions to the Senate Standing Committee that the freight rates paid to and from Tasmania are high in comparison with rates on mainland routes, that rates applicable on the mainland should be applied to Tasmania, and that the mainland modes of transport are subsidised.⁽¹⁾ This Chapter presents an examination of the degree to which mainland freight rates can validly be compared with those applying in the Tasmania trade, a discussion of the relevance of the subsidy argument, and a review of actual freight rate differences. The first step is to consider the extent to which routes are comparable.

TONNAGES

Because the volume of goods is a major factor in freight costs, it is essential to know something of the tonnages being carried before any comparison of freight rates is made. Little comprehensive information is available on the volume of non-bulk goods movements between points in Australia by all modes; the figures in Table 3.1 have been derived by the BTE from data obtained in a developmental collection made by the Commonwealth Statistician. The collection involves major freight forwarders and major road transport operators.⁽²⁾

If it is assumed that the proportional understatement is fairly uniform between routes then the non-bulk freight between the whole of Tasmania and the specified mainland cities is less than 50 per cent of that between Sydney and Melbourne (Table 3.1). Furthermore, the volume from Sydney and Melbourne

(1) Senate Standing Committee on Primary and Secondary Industry and Trade (Reference: Tasmania Shipping Freights) 1970-71 Hansard Report (pp 81, 86, 94, 103).

(2) Work undertaken by BTE and other organisations indicated that for certain routes this collection obtains details of about 50% of the goods moved; for other routes the proportion is not known. Coverage depends on proportion of goods handled by firms in the collection. Because of the high requirement to use freight forwarders, the coverage for Tasmania is probably higher than for other routes.

TABLE 3.1 - FREIGHT MOVED INTERSTATE BY MAJOR FREIGHT FORWARDERS
AND ROAD TRANSPORT OPERATORS, 1971-72
(^a'000 tons weight)

	Destination									Total freight Consigned
	Syd- ney	Newc- astle	Melb- ourne	Bris- bane	Adel- aide	Perth	Tasm- ania	Dar- win	Canb- erra	
<u>Origin</u>										
Sydney	-	-	779	456	215	102	66	8	42	1,667
Newcas- tle	-	-	40	18	8	10	2	..	..	78
Melbo- urne	881	22	-	254	327	154	295	4	16	1,954
Bris- bane	241	5	78	-	18	12	4	12	..	371
Adel- aide	164	2	197	45	-	70	18	8	2	506
Perth	17	..	23	3	21	-	2	..	..	66
Tasm- ania	132	2	226	22	21	10	-	..	2	416
Darwin	..	..	..	2	..	..	..	-	..	2
Canb- erra	4	..	..	..	..	..	..	..	-	4
Total freight receiv- ed	1,438	32	1,343	800	610	358	387	32	63	5,064

(a) The tons weight shown in this table are not directly comparable with the cargo tons shown in other tables of this report.

NOTE: Figures may not add to totals due to rounding.

Source: BTE estimates

is in each case more than four times the volume from the whole of Tasmania; the volume from Adelaide is a little greater than the volume from Tasmania. In fact, the figures may even overstate the relative importance of Tasmanian freight (see footnote 2 previous page).

Based on an analysis of port authority records, the percentage distribution of non-bulk freight to and from Tasmania is: Hobart 33 per cent, Burnie 20 per cent, Devonport 23 per cent and Launceston 24 per cent. If freight movements are apportioned on this basis then the volume for the largest city, Hobart, is less than 9 per cent of the volume to and from Melbourne, 9 per cent of that for Sydney, 24 per cent of that for Adelaide and 23 per cent of that for Brisbane.

No precise inferences can be drawn from these figures, but it is evident that if a location with the volume of freight available at Hobart were linked by rail and road to Sydney or Melbourne then the freight volume on the route would not even reach 20 per cent of the volume now moving between Sydney and Melbourne. Consequently, freight rates would almost certainly be higher. In the case of rail, the high capital cost of track and equipment means that the greater the volume moved the larger is the base from which to recover all charges and thus lower the cost per unit. Similarly, the cost of adding an additional wagon to the basic train configuration is very low, up to the maximum practical train size. The more trains of maximum size that can operate the lower the cost.

Although the arguments are not so clear with regard to road transport, economies in organisation, equipment and facilities do occur with large volumes of goods. For instance, larger volumes enable carriers to specialise in specific commodities or particular industries.

SUBSIDISED TRANSPORT

One of the arguments put to the Senate Standing Committee was that railways and road transport on the mainland are subsidised and that, consequently, interstate rates are low compared with sea rates to Tasmania. It was then argued that sea rates should be subsidised to bring them into line with the mainland rates.⁽¹⁾

Rail

It can reasonably be said that the railway systems are being subsidised, on the basis of the fact that they are making losses which are offset by funds from state budgets. However, it appears to be argued that, because interstate rates are lower than intrastate rates, the loss is occurring on interstate traffic, which is therefore subsidised.

Several points can be made against this argument-

- (i) The loss covers the whole railway operations, both passengers and freight. One of the major causes of the loss for the mainland systems is their passenger services, particularly the suburban passenger services.
- (ii) As previously stated in this Chapter, the volume over a particular route can affect the costs of operation; passing on these cost savings by way of reduced freight rates is a logical procedure. This is particularly so when endeavouring to obtain more freight for rail.
- (iii) It is not illogical or necessarily inefficient or a case of subsidisation for a railway system to have varying ton mile rates for different parts of its system. As long as these rates are set in relation to cost, they can vary with the type, volume and

(1) See footnote (1) on page 1. Also Senate Standing Committee Hansard Report 1970-71, op.cit. (pp 127, 135, 149, 150-4).

delivery time of the goods being carried. The low interstate rates may, in fact, be relatively profitable because of the nature and volume of the traffic.

It is significant that the Tasmanian Railways adopt a freight rate policy for interstate goods movements which amounts to a considerable business discrimination between classes of traffic. They charge \$2.50 per ton for containers from Hobart to Launceston to be shipped interstate, whereas the charge is \$6.24 per ton for intrastate cargo over a comparable distance. The lower rate may well be justified, so long as it covers direct costs and makes a contribution to system overheads.

Road

In all States except Tasmania most vehicles over a specified carrying capacity pay a road maintenance contribution based on an assessed ton mile charge, but vehicles used solely in interstate trade do not pay State registration taxes. Thus, interstate hauliers pay less taxes than intrastate hauliers and, in this sense, can be said to be subsidised to some extent.

TON MILE RATES

Ton mile rates are sometimes used in comparisons of transport costs between locations, but the use and interpretation of such rates should be undertaken with caution. Conditions of traffic and service required between any two locations can be peculiar to that particular route. As an example, consider the effect of the imbalance in trade to and from Western Australia. The current rail going rate between Melbourne and Perth is \$55 per ton whereas the back-loading rate from Perth to Melbourne is \$25, giving ton mile rates of 2.6c and 1.2c. To confuse the situation further, the rail book rate from Melbourne to Perth for the same type of load is from \$100 to \$120 per ton.

Because there is a fixed element of terminal costs in the total charge, the longer the journey the lower the ton mile charge. This can clearly be seen on one mode but is often ignored when intermodal comparisons are made. If two modes have different proportions of terminal and line haul costs over similar distances then the interpretation becomes even more difficult. The general view held in the transport field is that the ranking of modes according to the magnitude of terminal costs is sea, rail, road, but this depends on the definition of terminal costs. However, for all modes the longer the journey the less important are the terminal costs in the total transport costs.

Similar considerations apply to passenger mile costs. People can relate variations in fares against time (i.e. time of journey, frequency, access time, etc) and quality of service. They can then trade off one factor against the other before making their choice of mode.

RATE COMPARISONS

As indicated previously in this Chapter, comparing rates between one group of locations and another group of locations without taking account of the volume and balance of trade between them can lead to incorrect conclusions. Similarly, when intermodal comparisons are made of freight rates, faulty conclusions may be reached concerning the reasons for the difference, unless all factors are considered. Ton mile rates (and passenger mile rates) can also be misleading for the reasons previously set out.

Bearing these points in mind, one can still use the current published door-to-door freight forwarders' rates by mode between specified locations in Annex D as a basis for comment about rates to and from Tasmania in comparison with those to other places. The relationship between published and actual rates, the effect of backloading on the rate, differentials between to and from rates, and the factors that affect the rate charged for a particular commodity are discussed in more detail in Chapter 8.

The published rates do indicate that, at the present time, rates for Tasmania are higher than might be expected when compared with the rates between mainland capital cities. As shown in Figures 3.1, 3.2, 3.3, whereas other rates have had a general increase over the period covered, the Tasmanian rates have increased recently in substantial steps.

An analysis has been made in Annex E of the importance of the components of costs on the Melbourne to Devonport and Devonport to Melbourne route. This indicates that the sea freight only accounts for between 48 per cent and 50 per cent of the total freight cost.

Also in the Annex E, an attempt has been made to assess the freight payable if there were hypothetical road and rail links between Melbourne and Devonport. As previously indicated, a comparison such as this is difficult and does not produce an exact figure, but it still does give an indication of the difference between land and sea freight rates. It also highlights the areas where more detailed investigation is required.

The comparison indicates that it costs between \$1.20 and \$5.10 more to move a ton by sea over the specified route than it would by rail or road. The hypothetical land line haul cost used in this route study is probably too low, so that the difference could be smaller. It depends on the goods, quantities, direction of movement, availability of space, etc. If the volume per ton of goods is increased then the difference between sea and road/rail over the route increases so that at 140 cu ft per ton, the difference in door-to-door rates could be as high as \$25.

A further study was undertaken for the Sydney-Hobart route, and in that case a 40 cu ft ton shows an advantage by sea over road but not over rail. As the number of cu. ft per ton increases the sea costs become greater than rail or road. Sea costs go from an advantage over road of \$2.50 at 40 cu ft per ton to a disadvantage of \$32 at 140 cu ft per ton. At all densities, sea is more expensive than rail; the difference increases from \$4 at 40 cu ft per ton to \$38 at 140 cu ft per ton.

Companies involved in the export of commodities from Tasmania were approached and provided data on their costs and price structure. These companies represented a range of products and included most major exporters of non-bulk freight. The majority of the products were relatively dense commodities as are most of Tasmania's exports. A comparison of the transport costs between Tasmania and mainland capital cities and between mainland capital cities as a percentage of the wholesale price was undertaken. Rarely was the percentage of transport costs greater than 5 per cent and the difference in the percentage between Tasmanian routes and other routes was generally less than 2 percentage points. The commodities for which the percentage of transport costs was the highest, i.e. greater than 5 per cent, showed the greatest difference between the Tasmanian routes and other routes.

The information obtained from the commodity studies shows that the differences indicated by the route study are representative of actual differences for Tasmanian exports. The high volume to weight cargo is not typical of Tasmania's exports.

The question that must be answered is whether the Tasmanian rates are high because of the intrinsic characteristics of shipping or because of inefficiencies and practices which inflate the costs on which they are based. It is clear that shipping services, ports and freight forwarding are areas which require detailed investigation. In Chapters 4 to 8 each of these areas is examined to ascertain what the present situation is in the Tasmania trade.

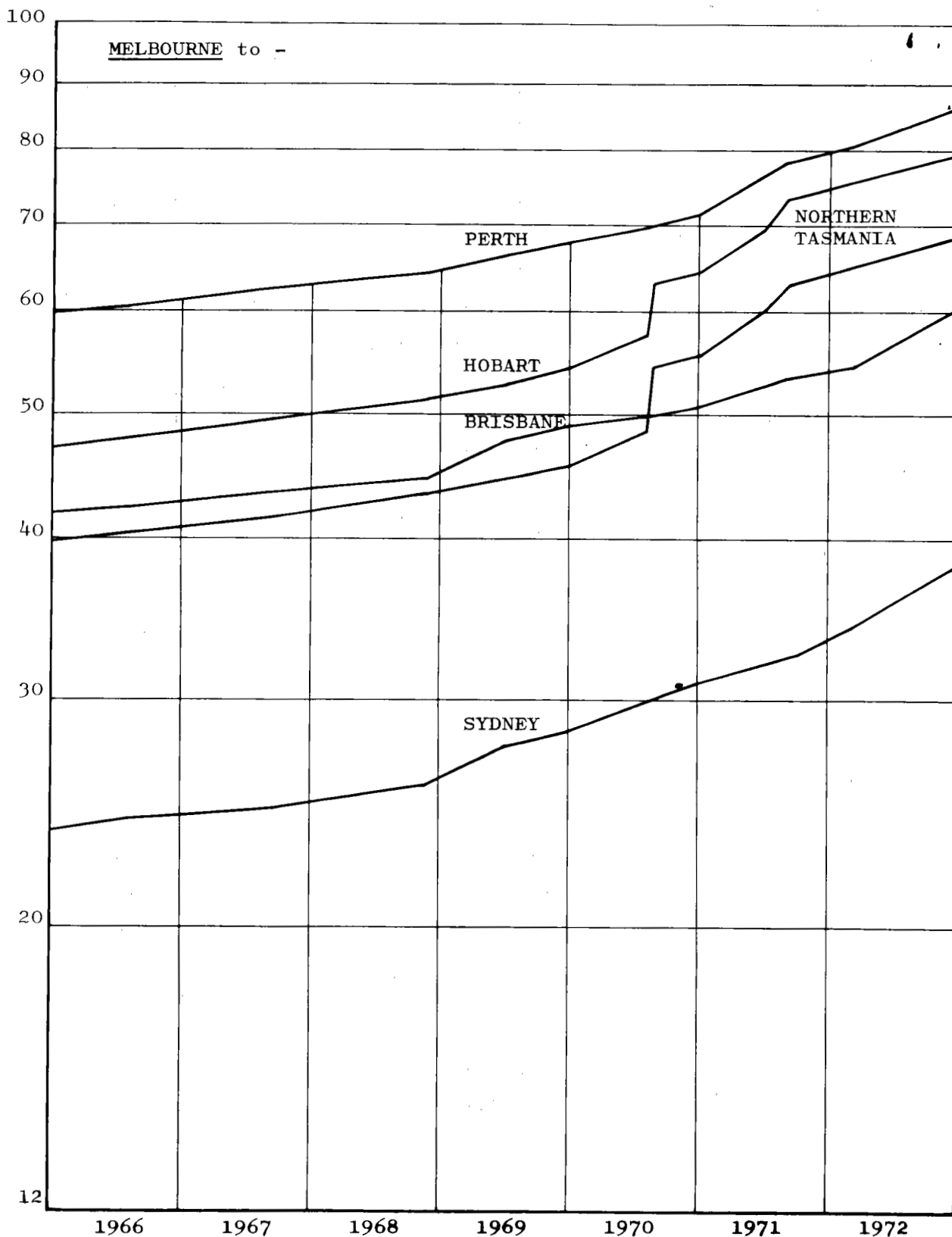


FIG. 3.1 LOW DENSITY CARGO (120 CU FT PER TON) DOOR-TO-DOOR BOOK SEA RATES (semi-logarithmic scale)

NOTE: Special quotations are given where the cubic measurement of each delivery exceeds 280 cu ft

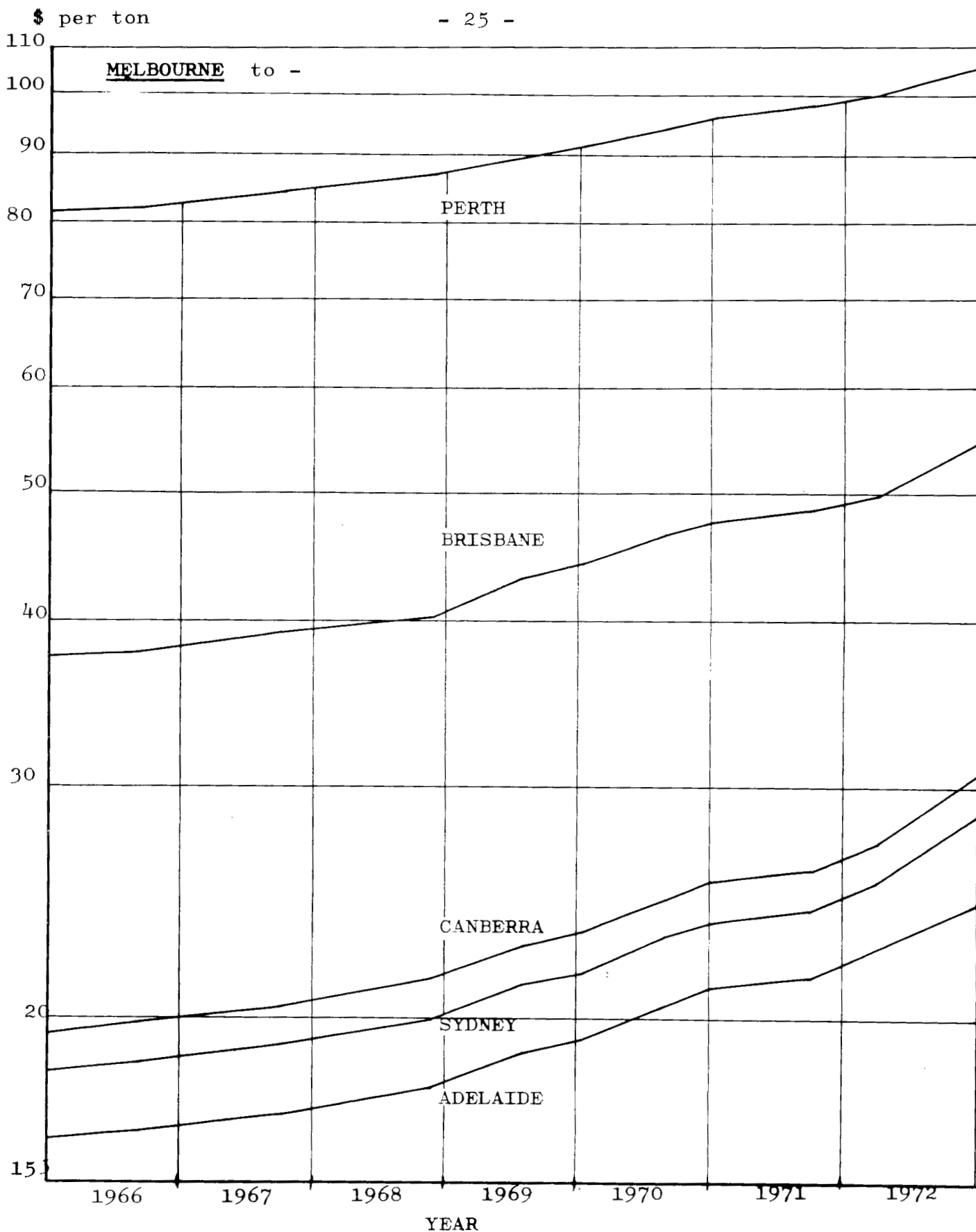


FIG. 3.2 LOW DENSITY CARGO (110-140 CU FT PER TON) DOOR-TO-DOOR ROAD RATES (20 ton consignment) (semi-logarithmic scale)

\$ per ton

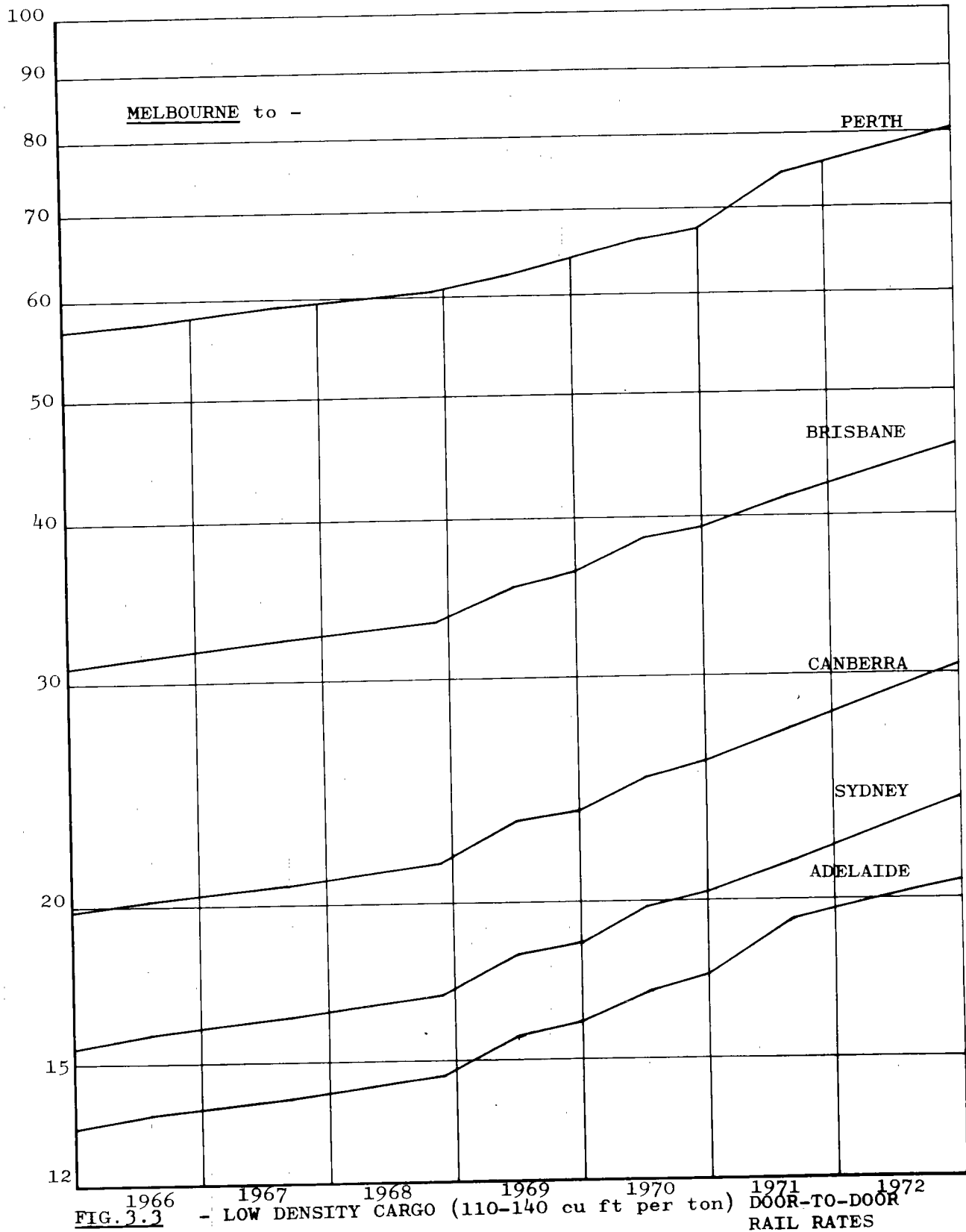


FIG. 3.3 - LOW DENSITY CARGO (110-140 cu ft per ton) DOOR-TO-DOOR RAIL RATES

(semi-logarithmic scale)

CHAPTER 4. THE NON-BULK SHIPPING SERVICES TO TASMANIA

In value terms, approximately 93 per cent of the interstate and overseas freight movements to and from Tasmania are made by ship. The only cargoes not carried by sea are those with characteristics enabling them to be economically moved by air.

For reasons outlined in Chapter 1, this study is concerned only with the transportation interstate of non-bulk general cargo and does not include any examination of bulk shipping or direct overseas shipping.

SERVICES PROVIDED

During 1971-72 the Tasmanian interstate non-bulk trade was serviced regularly by three shipping companies, The Australian National Line (ANL), Union Steamship Company of New Zealand Ltd (USS) and William Holyman and Sons Pty Ltd (Holymans). Two other interstate operations serving the Bass Strait islands have been excluded from this study because of the relatively small amounts of freight carried.⁽¹⁾ The interstate passenger service was operated solely by ANL. Full details of the vessels operating in the Tasmania trade are shown in Annex D.

(1) A triangular service between King Island, Melbourne and Stanley that had been operated by R.H. Houfe and Co. Pty Ltd, was suspended on 14 June 1972 because of financial difficulties. The Tasmanian Transport Commission operates the 'Joseph Banks' of 960 deadweight tons which carries livestock and general cargo between northern Tasmanian ports, Flinders Island and Victoria. This vessel was also placed on the King Island run after the withdrawal of the Houfe services. Until investigations are completed by the Commonwealth Department of Transport and the ANL into the ANL assuming responsibility for the King Island service, the Tasmanian Transport Commission has been given approval to charter the 'Gamma', a 1,000 ton vessel, to supplement the 'Joseph Banks'. The 'Gamma' commenced service in mid February.

FREQUENCY OF SERVICE

Details of interstate shipping services and cargo movements to and from Tasmania for 1971-72 are given in Tables 1 to 6 of Annex A; comments made in this section are based largely on information presented in the tables.

During 1971-72 there were 949 calls at Tasmanian ports by ships in the non-bulk trade and 952 departures (Table 4.1). This represented 18 arrivals per week. The number of departures exceeded arrivals because on three occasions the 'Jeparit' arrived in Tasmania with bulk freight and departed with non-bulk freight. On some crossings, vessels called at more than one Tasmanian port, with the result that there were 58 more arrivals than southbound crossings in 1971-72. The 'Empress of Australia' called at both Bell Bay and Burnie on each alternate crossing and several other vessels made a number of unscheduled multiple calls. Devonport with 305 arrivals in 1971-72 had almost six per week. The three northern ports between them recorded 713 arrivals, or almost 14 per week.

FREIGHT MOVEMENTS

The three northern ports together received 70 per cent of cargo shipped from the mainland and handled 65 per cent of cargo going to the mainland.

The amounts of cargo handled by the three major shipping companies through the Tasmanian ports in 1971-72 are shown in Table 4.1. This information has been summarised in Table 4.2 to show the percentage of cargo handled at the four Tasmanian ports by the three shipping companies.

TABLE 4.1 - TASMANIAN INTERSTATE NON-BULK FREIGHT MOVEMENTS,
1971-72 (Excludes tourist vehicles)

Shipping company and Tasmanian port served	To Tasmania		From Tasmania		Total Freight (Cargo tons)
	Arriv- als (Number)	Freight discharged (Cargo tons)	Depart- ures (Number)	Freight shipped (Cargo tons)	
<u>Australian National Line</u>					
Hobart	43	39,731	46	74,582	114,313
Burnie	174	159,290	174	224,609	383,899
Devonport	305	260,660	305	227,325	487,985
Launceston (Bell Bay)	151	199,320	151	179,843	379,163
Total	673	659,001	676	706,359	1,365,360
<u>Union Steamship</u>					
Hobart	176	242,444	176	291,768	534,212
<u>Holymans</u>					
Hobart	17	21,881	17	21,811	43,692
Burnie	16	18,767	16	13,961	32,728
Launceston (Kings Wharf)	67	60,879	67	54,827	115,706
Total	100	101,527	100	90,599	192,126
<u>All Companies</u>					
Hobart	236	304,056	239	388,161	692,217
Burnie	190	178,057	190	238,570	416,627
Devonport	305	260,660	305	227,325	487,985
Launceston	218	260,199	218	234,670	494,869
TOTAL	949	1,002,972	952	1,088,726	2,091,698

Source: Tasmanian Port Authorities

TABLE 4.2 - NON-BULK CARGO MOVEMENTS THROUGH TASMANIAN PORTS
1971-72 (PERCENT)

<u>Port</u>	<u>Shipping Company</u>			
	<u>ANL</u>	<u>USS</u>	<u>Holymans</u>	<u>Total</u>
	Percentage of company's operations at each port -			
Hobart	8	100	23	..
Burnie	28	0	17	..
Devonport	36	0	0	..
Launceston	28	0	60	..
Total	100	100	100	..
	Percentage of total cargo at each port handled by company -			
Hobart	17	77	6	100
Burnie	92	0	8	100
Devonport	100	0	0	100
Launceston	77	0	23	100

VESSELS

During 1971-72, ANL used seven ships on its Tasmanian services (details in Annex A). Three of these, the 'Princess of Tasmania', 'Empress of Australia' and 'Australian Trader' were passenger/freight roll-on roll-off (Ro-Ro) ships exclusively engaged in Tasmanian operations. Another Ro-Ro cargo only ship, 'Bass Trader', was also used exclusively for Tasmanian sailings. In addition, cargo only Ro-Ro vessels of the 'Searoader' type provided a regular service to Tasmania as part of their Australian coastal operations. Two support vessels were operated by the ANL during 1971-72; the 'Echuca' carried containers mainly for the overseas container feeder service, while the 'Jeparit' on three occasions from April 1972 carried non-bulk cargo from Hobart to Brisbane after having arrived with bulk cargo. Altogether, the ANL vessels sailed 393,000 miles on their Tasmanian operations, carried 1.36 million tons of cargo, 129,000 passengers, and 34,500 tourist vehicles. Freight ton miles amounted to 467 million (Table 4.3).

The Union Steamship Company used two cargo only Ro-Ro ships during 1971-72, the 'Seaway Queen' and the 'Seaway King'.

TABLE 4.3 - TASMANIAN INTERSTATE NON-BULK SHIPPING MOVEMENTS
1971-72

Shipping company and ship	Miles sailed (a) ('000)	Arrivals at Tas. ports (Number)	Freight carried (Cargo tons)		Freight ton miles performed (b) (Million)
			To Tas.	From Tas.	
<u>Australian National Line</u>					
Princess (c)	78.2	147	92,875	68,462	42.9
Empress (c)	80.7	104	67,655	107,298	111.3
Australian Trader (c)	80.5	143	203,903	221,545	124.6
Bass Trader (d)	67.4	132	157,611	148,841	79.2
Searoader (de)	69.5	93	127,323	146,778	94.8
Echuca (f)	14.5	54	9,634	5,455	4.0
Jeparit (f)	2.2	(g)	..	7,980	10.5
Total	393.0	673	659,001	706,359	467.4
<u>Union Steamship</u>					
Seaway Queen (d)	89.1	74	102,918	118,639	131.5
Seaway King (d)	90.4	75	114,477	123,413	142.7
Poolta (f)	39.2	27	25,049	49,716	54.2
Total	218.7	176	242,444	291,768	328.4
<u>Holymans</u>					
Mary Holyman (d)	50.5	33	40,648	35,772	59.4
William Holyman (f)	40.9	67	60,879	54,827	35.3
Total	91.4	100	101,527	90,599	94.7
<u>All Companies</u>					
Ro-Ro ships- Passenger/ cargo	239.4	394	364,433	397,305	279.0
Cargo only	366.9	407	542,977	573,443	507.5
Conventional ships	96.7	148	95,562	117,978	104.0
TOTAL	702.9	949	1,002,972	1,088,726	890.5

(a) In Tasmanian service only. Statute miles. (b) Cargo tons carried in Tasmanian service with distances in statute miles.
(c) Passenger/cargo Ro-Ro ship. (d) Cargo only Ro-Ro ship.
(e) Sydney Trader, Brisbane Trader or Townsville Trader. These identical ships operate a regular Tasmanian service as part of their Australian coastal schedules. (f) Conventional ship.
(g) This vessel made three departures with non-bulk cargo; in each instance it brought bulk freight to Tasmania.

NOTE: Figures may not add to totals due to rounding.

A conventional ship, 'Poolta', plied regularly between Hobart and Sydney (Table 4.3).

Holymans used two ships during 1971-72, the small conventional ship 'William Holyman' between King's Wharf (Launceston) and Melbourne, and the cargo only Ro-Ro ship 'Mary Holyman' between Adelaide and Hobart and Burnie. The 'Mary Holyman' commenced operations in October 1971 replacing the 'Tarinna'.⁽¹⁾

In the Tasmanian non-bulk cargo trade about 40 per cent of calls are made and 36 per cent of cargo is moved by the mixed passenger/cargo vessels (Table 4.3). Ro-Ro cargo only vessels moved 53 per cent of non-bulk cargo, with conventional vessels moving the remaining 11 per cent.

Some 405m ton miles were performed in transporting general cargo from the mainland to Tasmania with 486m ton miles being performed in the northbound direction. In terms of ton miles, ANL in 1971-72 performed 52 per cent of the total, USS 37 per cent, and Holymans the remaining 11 per cent.

PASSENGER SERVICE

Prior to April 1972 there were three passenger/cargo vessels, all operated by ANL, in the Tasmanian service. The 'Princess of Tasmania' which was the first vessel to introduce Ro-Ro cargo handling into the service in October 1959 was withdrawn in June 1972. The remaining two passenger/cargo vessels are the 'Empress of Australia' introduced into the service in January 1965 and the 'Australian Trader' which began operating in June 1969. Details of passengers and tourist cars carried by these vessels are shown in Table 4.4 (freight shown in Table 4.3).

(1) The 'Tarinna' carried mainly bulk freight. In the few months of 1971-72 during which it operated tonnages of non-bulk cargo carried were relatively small and were omitted from 1971-72 aggregates used in this study.

TABLE 4.4 - PASSENGERS AND TOURIST VEHICLES CARRIED TO AND FROM TASMANIA, 1971-72

Ship	Passengers		Tourist vehicles	
	To Tas.	From Tas.	To Tas.	From Tas.
Princess of Tasmania	37,289	36,518	9,336	9,661
Empress of Australia	10,080	9,578	1,903	1,655
Australian Trader	17,207	17,766	5,986	5,997
Bass Trader	179	207	(a)	(a)
TOTAL	64,755	64,069	17,225	17,313

(a) Small numbers of tourist vehicles carried on this ship have been included with freight.

PASSENGER CAPACITY

During both 1970-71 and 1971-72 these vessels provided an annual capacity of 180,000 passengers (90,000 in each direction). In 1970-71 approximately 122,000 and in 1971-72, 127,000 passengers were carried by these three ANL vessels, giving utilisation rates in these two years of 68 per cent and 72 per cent respectively (Table 4.5).

The service was re-scheduled in June 1972 with the 'Princess of Tasmania' being withdrawn and the 'Empress of Australia' replacing it on the Devonport-Melbourne route and the 'Australian Trader' replacing the 'Empress of Australia' on the Sydney/Hobart and Sydney/Bell Bay/Burnie/Sydney routes. As shown in Table 4.5, this means that total annual passenger capacity has been reduced to about 162,000 under the current schedule.

TABLE 4.5 - TASMANIAN INTERSTATE SHIPPING SERVICES: PASSENGER CAPACITY PROVIDED AND UTILISED(a)

Vessel	1970-71	1971-72	1972-73 ^(b)
Princess of Tasmania (324 passenger capacity)	92,016	93,960	
Australian Trader (190 passenger capacity)	52,060	52,440	29,640
Empress of Australia (250 passenger capacity prior to 1972-73; 440 passenger capacity for 1972-73)	35,500	30,500	132,000
Total capacity	179,576	176,900	161,640
Passengers carried	121,759	127,249	
% Utilisation	68	72	

(a) Passenger capacities for 1970-71 and 1971-72 are based on actual numbers of voyages made by each of the vessels. (b) Estimates for 1972-73 with the 'Empress of Australia' making 150 crossings per annum from Melbourne to Devonport and 'Australian Trader' making 75 crossings per annum to Hobart and Bell Bay/Burnie. 'Princess of Tasmania' is now out of the trade.

CHAPTER 5. FREIGHT RATES, COSTS AND PROFITS IN TASMANIA'S INTERSTATE SHIPPING

The trend in Tasmanian freight rates since the late 1950's is a striking one. Figure 5.1 shows that rates dropped substantially in 1959, were held virtually constant until 1970 and then rose in three steps to levels ranging from about 5 to 50 per cent above those of the long standstill.⁽¹⁾

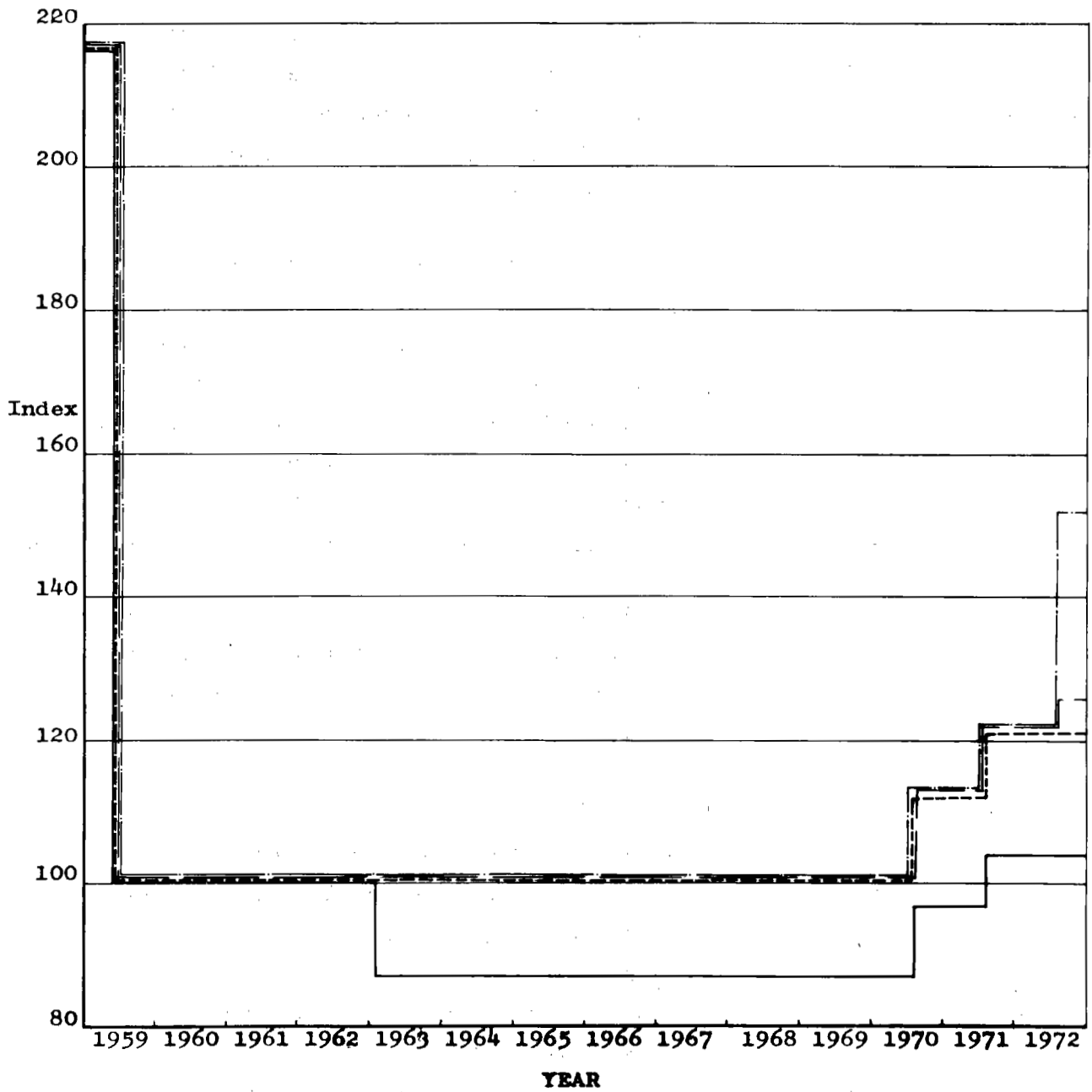
Obviously, shipping line costs did not remain constant in the period 1959 to 1970, and technical advances during the period were not sufficient to account for the standstill in the beginning, with the introduction of Ro-Ro vessels. Although the full benefits from the advance were not available immediately they were achieved over the first few years of Ro-Ro service. This happened as the potential gains in efficiency of loading and operation were realised, and suitably unitised cargoes became common.

In this Chapter, our major interest is in the movements of the freight rates in the Tasmania trade. However, to understand the reasons for increases in the rates it is necessary to examine changes in shipping profitability and the trends in costs.

SHIPPING TECHNOLOGY AND PROFIT TRENDS

The first of the Ro-Ro vessels in the Tasmania trade, the Australian National Line (ANL) 'Princess of Tasmania', commenced operations in 1959. By virtue of its greater ease of cargo handling this type of vessel achieved faster turnaround and more frequent services, making profitable operation possible at greatly decreased freight rates. The decrease was some 60 per cent, from about \$11.75 per ton to about \$4.75 per ton (excluding wharfage) on the introduction of the Ro-Ro service.

(1) The discussion in this Chapter refers to published sea freight rates. In addition to their published rates, ANL have special commodity rates principally for selected major northbound products e.g. newsprint, paper, aluminium, timber. In evidence to the Senate Standing Committee an ANL representative stated that 'Nearly all major exporting basic industries in Tasmania enjoy a special rate in some form or another.' These rates do not necessarily move by the same absolute or proportional amounts as the published rates. See Senate Standing Committee on Primary and Secondary Industry and Trade (Reference: Tasmanian Shipping Freights), 1970-71 p.635 (27 May 1971)



KEY:

- NORTH TASMANIA - MELBOURNE VOLUMETRIC CARGO
- - - - - MELBOURNE - NORTH TASMANIA VOLUMETRIC CARGO
- - - - - NORTH TASMANIA - MELBOURNE DENSE CARGO
- . - . - MELBOURNE - NORTH TASMANIA DENSE CARGO

Figure 5.1

INDEX OF CHANGES IN ANL FREIGHT RATES
(BASE: APRIL 1959 TO JANUARY 1963 = 100)

Door to door rates showed a far smaller decrease than sea freight rates because some of the cargo consolidation and handling functions were passed over to the freight forwarder (or to the factory). These functions previously had been carried out by the shipping company, and their elimination was partly responsible for the reduced sea freight rates. However, it is possible that the cost savings to ANL were underestimated because the Line did not take full account of this shift in consolidation and handling activities or of the increased efficiency of operations.

Evidence that the cost savings were larger than the freight rate reductions is provided by Figure 5.2, which indicates the movement in profits for passenger/cargo and cargo only Ro-Ro vessels in the Tasmania trade. The graph shows the rapid increase in profitability about three to four years after the introduction of Ro-Ro ships, as the potential economies were fully realised.

During the early years after the introduction of the Ro-Ro ships, profit was in excess of the amount needed to cover dividend payments attributable to this trade. Over the five years ending 1971-72, the profitability of the Tasmania trade has declined sharply, due principally to cost increases and partly to slower growth in the trade. Table 5.1 presents indexes of the estimated results for ANL and Union Steamship Co. (USS) in the Tasmania trade.

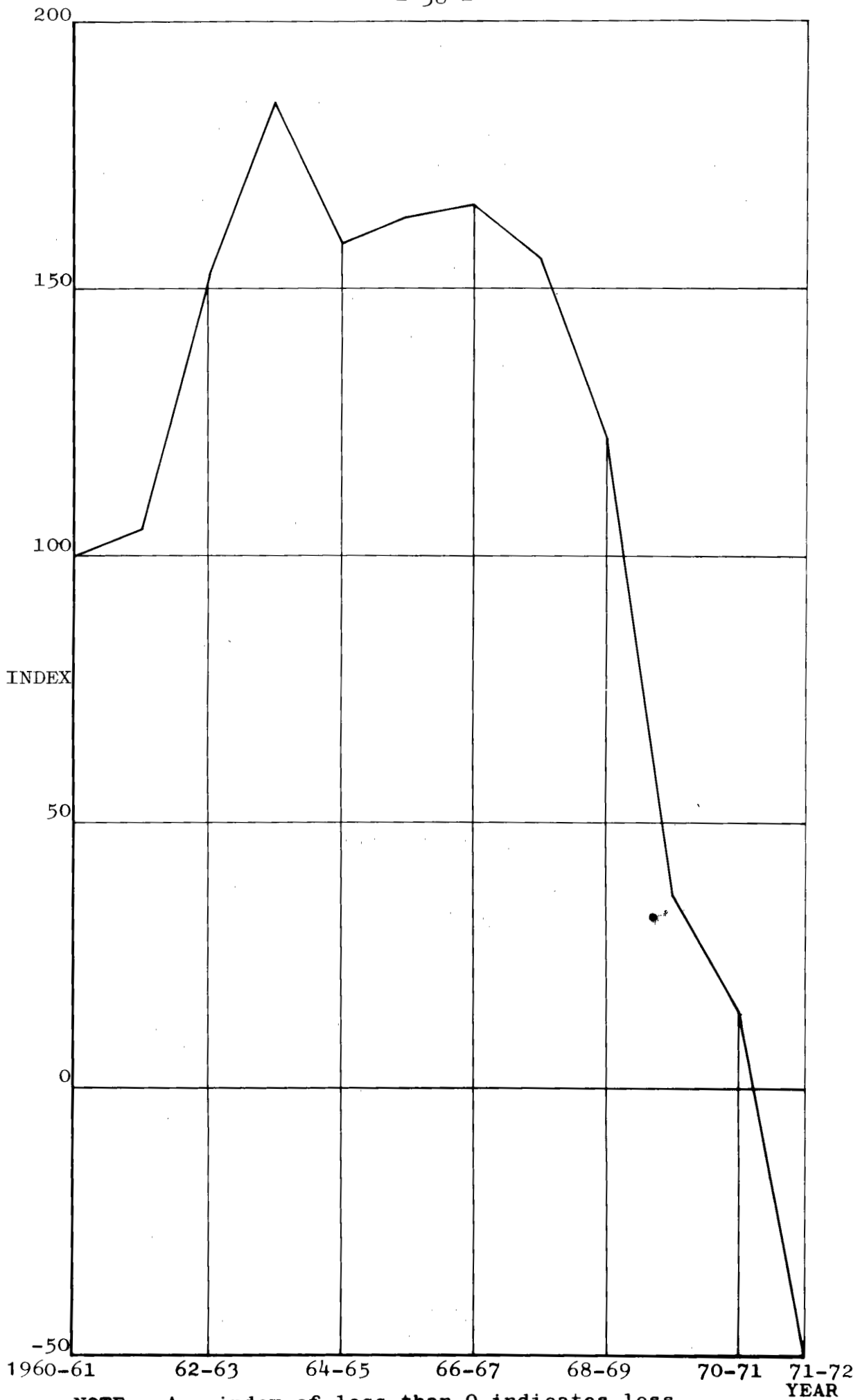
TABLE 5.1 INDEXES OF PROFIT LEVELS, ANL AND USS

(Base: 1965-66 = 100) (a)

Year ended 30 June -	ANL			USS	
	Melb- Tas. trade	Sydney- Tas. trade	Total Tas. trade	Sydney-Hobart & Melbourne-Hobart trade	
1964	128	..	92		n.a.
1965	95	..	72	(b)	104
1966	100	100	100	(b)	100
1967	104	133	112	(b)	124
1968	97	83	93	(b)	111
1969	17	37	22	(b)	85
1970	3	1	2	(b)	59
1971	-22	-41	-27	(b)	60
1972	-81	-119	-92		62

(a) Base year 1965-66 was chosen because it was the first year of operation of the Sydney-Tasmania trade. (b) Year ended 31 December.

Note: Minus sign (-) indicates a loss, i.e. -100 would indicate a loss of the same magnitude as the profit in the base year.



NOTE: Any index of less than 0 indicates loss

FIG. 5.2 INDEX OF TRADING RESULTS FOR THE 'PRINCESS OF TASMANIA' AND THE 'BASS TRADER' (BASE : 1960-61 = 100)

In the case of ANL, a profit in 1967-68 enabled this trade to provide its estimated share of the 6 per cent dividend to the Federal Treasury.⁽¹⁾ However, in 1971-72 the loss in the Tasmania trade was of approximately the same magnitude as the profit in 1967-68. The decline has occurred in both the Melbourne-Tasmania and the Sydney-Tasmania service. The largest percentage fall was in the Sydney-Tasmania trade, but the largest absolute fall was in the Melbourne-Tasmania trade. It is estimated that operations by ANL in the Tasmania trade will result in a loss of the order of \$1.5m in 1972-73.⁽²⁾

The index for USS similarly shows a marked decline in profit during the last five years. In some recent years, the return on capital employed has been well below commercially acceptable levels, falling as low as 2 per cent in one year. The situation of the Holyman operation has not been set out, but at the present time the Tasmania trade is not a profitable one for that company.

To indicate why profits have been squeezed in recent years, we discuss freight rate movements in the next section and cost movements in the subsequent section. The effect on profits of the relative changes is briefly reviewed in the section which then follows.

MOVEMENTS IN FREIGHT RATES

The ANL has generally been considered the rate setter in the Tasmania trade, with the USS setting almost identical rates on routes served by ANL. On the Melbourne-Launceston run,

(1) A commercial shipping line operates under an obligation to achieve a reasonable level of profit in order to pay dividends to shareholders. The equivalent obligation for ANL is provided in Section 14(i) of the Australian Coastal Shipping Commission Act which covers the obligation for ANL to endeavour to secure 'revenue sufficient to meet all of its expenditure properly chargeable to revenue, and to permit the payment to the Commonwealth of a reasonable return on the capital of the Commission'. To date, the maximum dividend paid has been 6 per cent. It is estimated that in order to enable an overall dividend payment of 6 per cent in 1971-72 on total ANL operations, the share payable by the Tasmania trade would have been about \$350,000.

(2) Based on fares and freight rates ruling at 1 November 1972.

Holyman's charge a small premium over ANL rates because the 'William Holyman' berths at King's Wharf in Launceston rather than at Bell Bay, thus saving road haulage from Bell Bay to Launceston.

After the introduction of Ro-Ro ships in 1959, cost increases were absorbed until 1967 when the ANL applied for an increase in rates ⁽¹⁾; the application was unsuccessful. As shown in the evidence to the Senate Standing Committee, the difficulty ANL has had in obtaining Ministerial approval to increase its freight rate probably has meant that the rates in the Tasmania trade over the five years to 1971-72 have been lower than they would have been if there were no regulation. Holyman's and USS find it difficult to vary their rates from ANL's without causing losses in their shares of the trade.

Since 1959 there have been three increases in freight rates by ANL - 12½ per cent in August 1970, approximately 10 per cent in July 1971, and a 15 per cent increase in dense cargo rates in August 1972.⁽²⁾ Table 5.2 sets out in index form the major changes in freight rates on various routes for a 'representative' container occupying a deck area of 14 ft 5 in x 8 ft for a height less than 7 ft and for a consignment of ten tons of dense cargo.

In December 1972 USS increased rates by 8 per cent. Up to the end of February 1973 the ANL had not made any rate adjustment.

(1) In January 1963 ANL reduced the rates on northbound cargo between northern Tasmanian ports and Melbourne by about 15 per cent, with a view to encouraging the marketing of Tasmanian products in mainland states. See ANL submission to the Senate Standing Committee on Primary and Secondary Industry and Trade (Reference: Tasmanian Shipping Freights) 1970-71, p.634 (May 1971).

(2) These figures are averaged out on an across-the-board basis; increases for individual cargoes vary quite markedly. The other companies have also adjusted their rates over the period.

TABLE 5.2 MAJOR CHANGES IN ANL FREIGHT RATES SINCE 1959

(Base: 1959 to January 1963 = 100)

Cargo	Route	1959 (before Ro-Ro ships)	1959 to Jan. 1963	Jan.63 to Aug. 1970	Aug.70 to July 1971	July 71 to Aug. 1972	From Aug. 1972
14ft 5 in x 8ft container with height less than 7ft	Melbourne/ North Tas.	216	100	100	112	121	121
	North Tas./ Melbourne	216	100	87	97	104	104
	Sydney/Tas. and V.V.		100	100	112	119	119
Dense	Melbourne/ North Tas.		100	100	113	122	152
	North Tas./ Melbourne		100	100	113	122	126
	Sydney/Tas. and V.V.		100	100	113	127	142

COST INCREASES

The considerable cost increases of recent years have been the major cause of the reduced profitability of the Tasmania trade and the consequent upward pressure on freight rates. It has been indicated by shipowners that costs of operating an average vessel in the Tasmania trade have increased by 55 to 65 per cent over the five years ending 1971-72. The three rises in Tasmanian shipping freight rates from August 1970 have been principally due to the cumulative effect of cost increases.

Table 5.3 shows the percentage increase in costs of operation of the ANL passenger/cargo vessel, 'Princess of Tasmania', since it commenced in the Tasmania trade. During its twelve years in service, total operating costs more than doubled. In the five years to 1971-72, costs increased by 61 per cent, at an annual rate of about 10 per cent.

TABLE 5.3 'PRINCESS OF TASMANIA' - INDEX OF COSTS

(Base: 1965-66 = 100)

Year	Index of Total Costs(a)
1960-61	77
1961-62	81
1962-63	86
1963-64	92
1964-65	99
1965-66	100
1966-67	104
1967-68	108
1968-69	114
1969-70	126
1970-71	145
1971-72	168

(a) Includes terminal costs.

Major Cost Increases

Shipping companies have indicated that the major cost increases were in the following items:

- . crew costs
- . terminal costs
- . repairs and maintenance costs
- . bunkers.

Crew costs generally comprise about 20 per cent of total operating costs (excluding wharfage) of Ro-Ro cargo vessels in the Tasmania trade and about 45 per cent of total costs of the passenger/cargo vessels. Table 5.4 gives an index of the changes in crew costs for the 'Princess of Tasmania' and shows that crew costs for this vessel increased by about 75 per cent during the five years ending 1971-72, at an annual rate of about 12 per cent.

TABLE 5.4 'PRINCESS OF TASMANIA' - INDEX OF CREW COSTS
(Base: 1965-66 = 100)

Year	Index
1960-61	67
1961-62	74
1962-63	78
1963-64	84
1964-65	95
1965-66	100
1966-67	108
1967-68	110
1968-69	119
1969-70	131
1970-71	162
1971-72	189

Terminal costs comprise up to 25 per cent of total operating costs. It appears that the major cause of the increase in terminal costs was the increase in labour costs which comprise about 60 per cent of total terminal costs for Ro-Ro vessels.

Table 5.5 shows an index of wages for waterside workers employed at Ro-Ro terminals which indicates that the cost of this labour has increased by about 60 per cent over the five years to 1971-72. BTE investigations suggest that overall terminal costs have increased by about the same percentage over this period, at an annual rate of about nine per cent.

TABLE 5.5 INDEX OF MINIMUM WAGES FOR WATERSIDERS AT ANL
TERMINALS, MELBOURNE/TASMANIA, 1965-1972
(Base: 1965-66 = 100)

Year	Index
1965-66	100
1966-67	104
1967-68	125
1968-69	130
1969-70	135
1970-71	143
1971-72	162

Bunker costs comprise a relatively small proportion of total vessel costs in the Tasmania trade (between two and five per cent). The price of bunkers has shown great variability in recent years, due mainly to exceptional circumstances such as variations in tanker charter rates prevailing in particular years. However, overall, the cost of bunkers does not appear to have contributed significantly to the increase in total ships costs over the last five years.

RELATIVE CHANGES IN COSTS AND FREIGHT RATES

It has been shown in Table 5.3 that total costs of operating a passenger/cargo vessel have risen by about 60 per cent in the five years to 1971-72.

The principal causes have been a 75 per cent increase in crew costs which comprise 45 per cent of total costs, and a 60 per cent rise in terminal costs which comprise about 20 per cent of total costs. This implies that cargo only Ro-Ro vessels, which have a lower proportion of crew costs, have had an increase in total costs over the last five years of a little less than 60 per cent.

Thus, the data tend to confirm the assertion that there have been total cost increases in the range of 55-65 per cent in shipping costs to Tasmania during the five years ending 1971-72.

In the same period, most freight rates have increased by about 25 per cent or a little more, passenger fares by about 15 per cent, and accompanied car rates by about 20 per cent. Thus, in the absence of any marked changes in utilisation and efficiency, the increase in freight rates has been less than the cost increases. As a result, the general profitability of the trade has declined.

CHAPTER 6. THE STRUCTURE OF SHIPPING COSTS

The method of analysis used in this Chapter has been to estimate the cost structure of a hypothetical vessel and to relate the calculated unit costs to those expected for existing and proposed vessels. The calculated costs are used not only in relation to cargo vessels but also to shed some light on the cost of passenger operations.

HYPOTHETICAL VESSEL

Based on data obtained from shipping companies operating in the Tasmania trade and from other sources, BTE has estimated the cost structure for a hypothetical 5,000 dwt Ro-Ro vessel. The details of the vessel to which the cost estimates shown in Table 6.1 apply are as follows:

Size: 5,000 dwt

Route: Melbourne-North Tasmania

Frequency: 150 round voyages per annum

Practical payload capacity: 3,500 tons

Annual capacity: 1,000,000 payload tons (approximately)

Utilisation: Assumed to be 70 per cent, i.e. 700,000 payload tons per annum. This approximates levels achieved in the Tasmania trade in recent years.

Manning: 42

Capital cost: \$6.05m, i.e. full cost of \$11m less subsidy of \$4.95m.

Revenue

At current freight rates, assuming no discounts and a 1 : 10 dense cargo to volume cargo ratio⁽¹⁾, expected revenue at 70 per cent utilisation would be about \$5.0m. Where discounts are offered, the revenue estimate would be lower⁽²⁾.

(1) Dense cargo is that which conforms to a stowage factor of less than 40 cu. ft. per 20 cwt and for which sea freight is charged on the basis of tons weight. Volume cargo conforms to a stowage factor of 40 cu. ft. or more per 20 cwt and sea freight is charged on a volume basis.

(2) USS claims that it does not offer any discounts or rebates. It is believed that ANL provides significant discounts or rebates to a number of major clients and total revenue under the above conditions would be lower for ANL.

TABLE 6.1 - ANNUAL COST STRUCTURE FOR HYPOTHETICAL 5,000 dwt
VESSEL OPERATING IN TASMANIA TRADE

Cost Item	Annual cost	Proportion of total cost
<u>Operating Costs</u>	(\$'000)	(%)
Crew costs	570	13
Provedoring and stores	110	3
Insurance (Hull)	60	1
Repairs, maintenance and surveys	260	6
Cargo gear	260	6
Administration and overheads	290	7
	<u>1,550</u>	<u>36</u>
Depreciation	440	10
Terminal costs	900	20
	<u>2,890</u>	<u>66</u>
Voyage costs-		
Port (including wharfage)	1,270	29
Bunkers	150	3
Other	100	2
	<u>1,520</u>	<u>34</u>
TOTAL ANNUAL COSTS	4,410	100

Costs

On the basis of the calculated annual costs of \$4.41m (Table 6.1), the cost per payload ton at 70 per cent utilisation is \$6.30. This calculation excludes financial charges. If allowance is made for these the cost per ton is increased⁽¹⁾.

The most significant feature of the percentage breakdown of these cost figures is that terminal costs and port costs (predominantly wharfage) comprise 49 per cent of total annual costs of operating such a vessel in the Tasmania trade. Each of these items is discussed separately in the following paragraphs.

(1) In this hypothetical case if it were simply assumed that the \$6m was all loan funds at an interest rate of 7 per cent, the interest payment alone would be \$420,000 per annum.

Terminal costs include the following major items:

- all labour costs at terminals, including permanent labour, casual labour, superintendence and all associated costs
- depreciation of buildings and equipment
- equipment hire
- other operating expenses - electricity, cleaning, water, etc.

The estimate of terminal cost per ton of cargo covers all shipping company activity from receipt of the cargo at the terminal to the loading of the ship, unloading of the ship at the destination, storage at the terminal (where applicable) and any other operations performed by the shipping company staff up to the terminal gate.

BTE investigations suggest that a total cost of \$1.30 per ton would be a reasonable estimate for the current cost of these activities in the Tasmania trade, based on an assessment of terminal costs in Melbourne, Sydney and the four Tasmanian ports. Generally, the costs per ton of cargo were lower at Tasmanian Ro-Ro terminals than in Melbourne and most other Australian terminals.

There are two significant factors which should be noted concerning the estimated terminal cost:

- BTE investigations suggest that the cost per ton at Ro-Ro terminals was about 60-70 cents per ton in 1967-68 which means that this cost has approximately doubled in five years
- stevedoring costs for similar cargo on conventional vessels were as high as \$7 per ton at each end, i.e. a total of \$14 per ton.

Port costs are principally made up of wharfage, averaging \$1.76 per ton in the Tasmania trade. Wharfage is a charge on the shipper, collected by the shipping company as part of the sea freight rate and paid by them to the port authorities. Other port costs, including tonnage dues, garbage fees, gangway fees, telephone etc. are direct charges on the shipping company. (See Chapter 7 for full details).

Other costs: The remainder of the total annual costs are those associated with the vessel. Of these, the most significant is the crew cost comprising about 18 per cent of total vessel costs (excluding wharfage). As discussed in Chapter 5, this is also the area of costs which has been subject to greatest increase in recent years.

Depreciation is calculated at 6.25 per cent per annum on original capital cost to the shipping company (i.e. after the subsidy has been paid). The estimated capital cost is approximate, being based on current shipbuilding costs. In the case of many of the vessels currently operating in the Tasmania trade, the depreciation item is relatively smaller because of lower capital cost. On the other hand, repairs and maintenance are higher in the older vessels.

The administration and overheads item is a fairly arbitrary estimate which would vary from company to company depending on the method of allocation adopted.

Labour: It is of interest to note the proportion of labour costs in total costs for an industry generally considered to be capital intensive. Excluding wharfage and assuming labour costs to comprise 60 per cent of terminal costs, total labour costs would be about \$1.1m or about 34 per cent of total costs of operation of this vessel.

Summary: The BTE estimate of the composition of the total cost of moving one ton of cargo from terminal gate to terminal gate, using the hypothetical vessel in the circumstances described, is as follows:

	<u>Cost/Ton</u>	<u>Percentage</u>
	\$	
Line-haul	3.24	51
Terminal Costs	1.30	21
Wharfage	1.76	28
TOTAL	<u>6.30</u>	<u>100</u>

RELATIONSHIP OF HYPOTHETICAL VESSEL TO PRESENT AND PROPOSED
VESSELS

The hypothetical 5,000 dwt vessel, by virtue of its size and operating characteristics, differs to some extent from some of the vessels currently operating in the Tasmanian trade. However, the reason for choosing such a vessel was that it resembles fairly closely the proposed new vessels planned by both USS and ANL. Both organisations consider such a vessel to be close to the optimum for the Tasmania trade given the conditions - frequency, number of ports, volume of cargo, etc. - currently existing and expected in the foreseeable future. That is, both realise that lower unit costs could be achieved by using larger, more efficient vessels if the cargo were available to ensure high levels of utilisation. At the frequency of service stated as being required by Tasmanian shippers, there is insufficient cargo available to justify the economic use of vessels much larger than this.

On the other hand, the difference between the wharf to wharf costs per ton calculated for this vessel and the costs for the efficient vessels already operating in the trade would not be great enough to invalidate any conclusion drawn on the basis of the hypothetical vessel.

In addition, it must be borne in mind that nearly 50 per cent of the cost per ton of cargo is assessed as terminal costs and wharfage which will not vary with the size of the

Ro-Ro vessel used.

In the case of the 'Bass Trader', a smaller vessel near the end of its economic life, and the conventional vessels, the cost per ton would be higher.

In the case of the passenger/cargo vessels which performed about 30 per cent of the total freight ton miles in the Tasmania trade in 1971-72 the costs of carrying cargo are very difficult to determine. However, with the redeployment of ANL vessels that took place in April 1972 and the fact that at present the 'Empress of Australia' is carrying very little cargo due to high passenger and tourist vehicle utilisation, it is expected that the proportion of cargo carried on mixed vessels will drop substantially in future. The relationship between costs of carrying passengers and costs of carrying cargo in mixed cargo/passenger vessels is examined in the next section.

For the mix of vessels operating in the Tasmania trade at the current time the average cost per ton would be well in excess of the \$6.30 calculated for the hypothetical vessel. The average cost per ton is certainly higher for ANL, with its much greater variety of vessels, than for the USS.

COSTS OF PASSENGER SERVICES

If passenger services were being provided by passenger only vessels then a comparison of costs with revenues would be relatively simple. However, with the operation of mixed passenger/cargo vessels, it is difficult to dissect the joint overheads and operating costs of the vessel into those attributable to passengers and their vehicles and those attributable to cargo. Costs to be broken down would include crew costs, port dues, depreciation and bunkers as well as some of the terminal costs.

One possible method of allocating joint costs is to consider the costs of carrying cargo on the mixed passenger/cargo vessel in terms of the costs of cargo only vessels. If it is assumed that the cost per ton of carrying cargo on a cargo only vessel can be applied to a mixed passenger/cargo vessel then the remaining cost is an estimate of the cost of carrying passengers and their motor vehicles.

BTE has made an estimate of the total annual operating costs of a vessel with similar characteristics to the 'Empress of Australia'. It was assumed that the vessel was operating 150 round trips in the Melbourne-Northern Tasmania route, had a total passenger capacity of 440, and was operating at about 75 per cent passenger utilisation and 70 per cent cargo utilisation (based on recent experience in the trade). The vehicle/passenger ratio was assumed to be 1:4 so that, with 75 per cent passenger utilisation, the cargo capacity of a vessel similar to the Empress was reduced to about 800 tons.

On these assumptions the total annual operating costs of such a vessel were estimated to be in the vicinity of \$4.7m. This estimate includes wharfage on cargo and passenger vehicles. If the estimated \$6.30 per ton for carrying cargo in the 5,000 dwt vessel is applied to the passenger cargo vessel then the following calculation can be made:-

<u>5,000 DWT Passenger/Cargo Vessel</u>	
	<u>\$m</u>
Total ship costs	4.7
Cost of carrying cargo at cargo vessel efficiency	1.1
Cost attributable to passenger services	<u>3.6</u>

Using the average one way passenger fare of \$13.50 and an average return passenger vehicle rate of \$70⁽¹⁾, the following summary of passenger operations is calculated:

	\$m	\$m
Costs attributable to passenger operations		3.6
Revenue from passengers	1.3	
Revenue from passenger vehicles	0.9	
Total revenue from passenger operations		<u>2.2</u>
Loss on passenger operations		1.4

This calculation suggests that the loss from passenger operations may be greater than \$1m on one vessel. It should be noted that the estimate is based on fare levels and vehicle freight charges which take into account increases up to the end of 1972.

Summary

The calculation, supported by financial results obtained by BTE, indicates that the passenger services are being operated at a considerable loss. If the total loss on the Tasmania trade is less than that on the passenger/cargo ships then cross subsidisation occurs from the cargo trades to the passenger trade.

It is argued in shipping circles that the level of passenger fares by sea is restricted by the level of air passenger fares. If this argument is valid then the ANL is constrained in recovering the costs of operating the passenger services. Thus, in the event of cost increases, any attempt to break even or to meet the obligation to pay a dividend will result in rate increases in the freight field.

(1) This compares with the one way rate of about \$90, for a similar commercial vehicle. In addition, passenger vehicles have loading priority over cargo on mixed passenger/cargo vessels.

Any tendency to cross-subsidise passenger services would have wider significance, in view of the fact that USS and Holymans have tended to follow ANL freight rates. These two lines do not operate passenger services; hence the ANL freight rate should not be set to provide any element of cross-subsidy for passenger operations.

CHAPTER 7. TASMANIAN PORTS

In this chapter, we briefly review the operations of the four Tasmanian ports that handle interstate non-bulk freight, namely, Hobart, Burnie, Devonport and Launceston. The financial position of these ports is also examined and consideration is given to the reasons why Tasmanian port charges are high.

A brief description of each of the four ports appears in Annex C.

FREIGHT MOVEMENTS THROUGH THE FOUR PRINCIPAL TASMANIAN PORTS

The ports of Hobart, Burnie, Devonport and Launceston together handled 6.7m tons of freight in and out during 1971-72, the great part (5.1m tons) of which was interstate. Details of the tonnages moving through each of the four ports is shown in Table 7.1.

TABLE 7.1 FREIGHT MOVEMENTS THROUGH PRINCIPAL (a) TASMANIAN
PORTS, 1971-72
('000 cargo tons)

	Hobart	Burnie	Devon- port	Laun- ceston	Total
SOUTHBOUND					
<u>Received from-</u>					
Overseas	147	67	20	83	317
Interstate:					
Bulk freight	613	214	165	743	1,736
Non-bulk freight	304	178	261	260	1,003
Tourist vehicles	9	24	109	31	172
Total	926	416	535	1,034	2,911
Intrastate	135	..	..	10	145
TOTAL	1,208	483	555	1,127	3,373
NORTHBOUND					
<u>Destined -</u>					
Overseas	676	158	72	83	989
Interstate:					
Bulk freight	345	274	211	57	887
Non-bulk freight	388	239	227	235	1,089
Tourist vehicles	7	24	120	22	173
Total	740	537	558	314	2,149
Intrastate	..	135	..	11	146
TOTAL	1,416	830	630	408	3,284

(a) Movements through other Tasmanian ports are relatively insignificant apart from exports overseas of iron ore pellets from the specialised bulk loading facility at Port Latta (2,020,000 tons in 1970-71).

Source: Tasmanian Port Authorities

Bulk commodities made up 60 per cent of shipments into these four ports from interstate and 41 per cent of the outward shipments to interstate destinations. Non-bulk commodities made up only 34 per cent of shipments originating interstate but contributed 51 per cent of shipments to the mainland. Tourist vehicles (expressed on the basis of 10 cargo tons per vehicle) accounted for six per cent of inward shipments from interstate and eight per cent of the outward shipments.

The amount of traffic handled through each port is strongly influenced by the frequency and type of scheduled shipping service. This is particularly true of non-bulk freight, a considerable proportion of which is carried by land transport to and from the ports having the more frequent shipping services. (1)

Commodity details for interstate freight passing through the four ports are shown in Table 7.2. The most important bulk commodity inwards was petroleum, which made up 685,000 tons of the total of 1,736,000 tons. Other important bulk commodities entering Tasmanian ports were zinc concentrates at Hobart (305,000 tons) and manganese ore, bauxite and alumina at Launceston (461,000 tons).

(1) There is a significant amount of Hobart freight shipped interstate through the northern ports. It is understood that these movements could amount to 100,000 tons of freight in each direction. Also, a lesser tonnage of Launceston freight moves to and from the mainland through Devonport and Burnie.

TABLE 7.2 - INTERSTATE TRADE THROUGH PRINCIPAL TASMANIAN

PORTS, BY COMMODITY, 1971-72

('000 cargo tons)

Inward Shipments				Outward Shipments			
HOBART							
Bulk- Zinc concs.	305			Bulk- Zinc	183		
Petroleum	260			Wood pulp	140		
Coal	14			Other	22		345
Other	34	613					
Non-bulk (mixed)		304		Non-bulk (mainly newsprint, timber, zinc, confectionery)			388
Tourist vehicles		9		Tourist vehicles			7
TOTAL		926		TOTAL			740
BURNIE							
Bulk- Petroleum	152			Bulk- Sulphuric acid	241		
Ilmenite	50			Concentrates	33		274
Salt	7						
Other	5	214		Non-bulk Paper	111		
Non-bulk (mixed)		178		Timber	55		
Tourist vehicles		24		Titanium dioxide	21		
TOTAL		416		Vegetables	17		
				Other	35		239
				Tourist vehicles			24
				TOTAL			537
DEVONPORT							
Bulk - Petroleum	130			Bulk (mainly cement)			211
Wheat	14			Non-bulk (mainly paper, timber, canned and frozen foods)			227
Gypsum	7			Tourist vehicles			120
Other	14	165		TOTAL			558
Non-bulk (mixed)		261					
Tourist vehicles		109					
TOTAL		535					
LAUNCESTON							
Bulk- Bauxite	204			Bulk- Ferro-alloys	50		
Manganese	148			Other	7		57
Petroleum	143						
Alumina	109			Non-bulk- Timber	85		
Coal	52			Aluminium	56		
Wheat	18			Wool	15		
Limestone	10			Alumina	9		
Other	59	743		Other	70		235
Non-bulk (mixed)		260		Tourist vehicles			22
Tourist vehicles		31					
TOTAL		1,034		TOTAL			314

Source: Tasmanian Port Authorities

Non-bulk commodities entering Tasmanian ports (1,003,000 tons) were varied and were mainly goods for consumption in Tasmania. By contrast, the great majority of non-bulk goods shipped outwards (1,089,000 tons) consisted of a small number of products such as newsprint, paper, timber, canned and frozen foodstuffs, refined zinc and refined aluminium. Hobart had the greatest share of non-bulk shipments to the mainland (388,000 tons) while the three northern ports had about equal amounts (227,000-239,000 tons).

As with non-bulk shipments, bulk shipments to the mainland (887,000 tons) were made up of a small number of commodities. Bulk commodities moving interstate from Hobart (345,000 tons) were predominantly refined zinc and wood pulp, from Burnie (274,000 tons) mainly sulphuric acid, from Devonport (211,000 tons) mostly cement, and from Launceston (57,000 tons) mainly ferro-alloys.

In the years since the end of World War Two there have been significant increases in total interstate freight through the four ports.⁽¹⁾ In recent years, the increases have been due principally to additional bulk movements; information made available from both shipping companies and port authorities indicates that in recent years there has been little growth in interstate non-bulk freight movements to and from Tasmania.

(1) Interstate shipments into Tasmania, which were 0.6m tons in 1944-45, had doubled by 1960-61 and had doubled again to 2.5m tons by 1967-68. Inward movements for 1971-72 at 2.9m tons were 417 per cent more than in 1944-45.

In the years following the end of World War Two, Tasmanian shipments to the mainland declined from 0.7m tons in 1944-45 to 0.5m tons in the years 1948-49 to 1952-53. Trade then recovered and the 1944-45 total was exceeded for the first time in 1960-61. Shipments to the mainland continued to increase steadily, passing 1m tons in 1964-65 and 1.5m tons in 1968-69. The total of 2.1 m tons in 1971-72 was 190 per cent greater than the 1944-45 figure.

FINANCIAL POSITION OF TASMANIAN PORTS

To meet the costs of providing port services⁽¹⁾, the Tasmanian port authorities obtain revenue mainly from two kinds of charges, tonnage charges on ships⁽²⁾ and wharfage on freight discharged and shipped.⁽³⁾ Some revenue is also obtained from rentals, including revenue from leasing terminals to shipping companies.

It was observed in Chapter 6 that some freight rates between Melbourne and northern Tasmanian ports include a wharfage component which can be one quarter of the total shipping freight charged.⁽⁴⁾ This significant wharfage component results not only from the short sea voyage but also from the relatively high charges levied by northern Tasmanian ports. Table 7.3 shows wharfage charges at Tasmanian ports and at other Australian ports served by Ro-Ro vessels in October 1972. This study does not take account of increases which have occurred after that month.

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- (1) A brief description of the various services provided by the Tasmanian port authorities is set out in Annex C.
 - (2) Tonnage charges, intended to cover the use ships make of port facilities, are calculated on the gross registered tonnage and the length of the ship's stay in port. Shipping companies may also have to pay for pilotage and for the use of other facilities such as tow lines, and certain mechanical equipment.
 - (3) Wharfage is a charge made on the shipper of freight for the use that is made of wharf facilities, etc. in a port. In Tasmania, wharfage charges for non-bulk cargo are included in the shipping freight rates and the shipping companies pay them to the port authorities concerned. Details of the basis on which wharfage charges are levied appear in Annex C.
 - (4) Details of the wharfage component in freight rates are given in Annex I.

TABLE 7.3 - COMPARISON OF GENERAL WHARFAGE CHARGES AND PORT
TONNAGE CHARGES, OCTOBER 1972,

	General Wharfage charge per ton (a)		Tonnage charge on ship in port for less than 12 hours	
	Imports	Exports	5,000 GRT	3,000 GRT
	Cents	Cents	\$	\$
<u>Tasmanian ports</u>				
Hobart	126	63	42	25
Burnie	168	84	175	105
Devonport	168	84	(b)330	(b)198
Launceston	168	84	(b)198	(b)105
<u>Other ports</u>				
Melbourne	67	32	55	33
Sydney	100	42	48	29
Brisbane	(c)136	(c)119	240	128
Townsville	94.5	78.8	250	150
Cairns	95	75	125	75
Adelaide	110	65	90	54

(a) For certain specified types of cargoes, wharfage is charged at a rate less than the general rate. (b) Minimum charge which is for three days in port. (c) Includes harbour dues which are charged at the rate of 67 cents per inward ton of cargo and 50 cents per outward ton.

Source: Port Authorities

The main question to be examined is why Tasmanian port charges are high. We commence with a review of revenue and expenditure, paying particular attention to the structure of expenditures.

Components of Revenue and Expenditure⁽¹⁾

A significant feature of the revenues and expenditures of Tasmanian ports shown in Table 7.4 is the relatively high proportion of expenditure made up by loan charges. For all Tasmanian ports, such charges constitute 40 per cent of total expenditure, and an even higher proportion in two of the northern ports: Burnie 67 per cent, Devonport 58 per cent. In the port of Launceston, loan charges constitute only 27 per cent of expenditure and in Hobart 24 per cent. However, Launceston and Hobart were borrowing heavily for capital works in 1971-72 (third last line of Table 7.4) and this could be expected to increase the level of loan charges at these ports.⁽²⁾

(1) Details for 1971-72 are given in Table 7.4; for earlier years, see Tables 2 to 5 in Annex C.

(2) Details of current and proposed port development plans are set out in Annex C.

TABLE 7.4 - FINANCIAL POSITION OF PRINCIPAL TASMANIAN PORT

<u>AUTHORITIES, 1971-72</u>					
(\$'000)					
	Hobart	Burnie	Devon- port	Laun- ceston	Total
<u>REVENUE AND EXPENDITURE (a)</u>					
<u>Revenue-</u>					
Ship charges	209	227	243	154	833
Wharfage	1,073	955	897	873	3798
Rents	379	106	69	494	1048
Hiring charges and other	175	167	163	752	1257
Total	1,836	1,455	1,372	2,273	6936
<u>Expenditure-</u>					
Administration	183	229	139	303	854
Port operation	357	93	128	289	867
Maintenance	422	124	247	393	1186
Other operating	148	13	..	583	744
Loan charges-					
Interest	127	722	507	433	1789
Repayments	271	224	253	193	941
Other	..	68	..	..	68
Other non-operating	127	44	44	114	329
Total	1,635	1,517	1,318	2,308	6778
<u>Net Revenue</u>	201	-62	54	-35	158
<u>LOANS (b)</u>					
Loans outstanding at beginning of year	4,419	12,462	6,921	6,504	30,306
Plus borrowings	1,760	700	450	1,130	4,040
Less repayments	271	212	253	193	929
Loans outstanding at end of year	5,908	12,950	7,118	7,441	33,417

(a) Similar details of revenue and expenditure for years 1967-68 to 1971-72 are shown in Tables 2 to 5 in Annex C.

(b) Total borrowings and increases in indebtedness for the four year period to 1971-72 are shown in Table 6 of Annex C.

NOTE: Minus sign (-) denotes an excess of expenditure over revenue on the year's operations.

Source: Tasmanian Auditor-General's Report, 1971-72

Borrowing to invest in port facilities is not necessarily a problem in itself, but it does become a problem when the investment results in excess capacity and there is insufficient traffic over which the capital charges can be spread.

It is extremely difficult to interpret the revenue and expenditure figures in respect of the interstate non-bulk trade, particularly for the northern ports because much of the recent capital expenditure has been made with a view to increased bulk commodity exports. Nevertheless, much of the investment has been in terminal facilities for vessels trading between Tasmania and the mainland, and these facilities tend to provide excess capacity.

In 1971-72, the three northern ports received a total of 492 visits from Ro-Ro vessels. This number of visits could have been handled by two Ro-Ro berths at the average turn around time of eight to ten hours for these vessels. In fact, there are five Ro-Ro berths at these three ports and a sixth is nearing completion.

The reason for this considerable over-investment in terminal facilities is that, in the absence of price competition (see Table 7.3), the port authorities have endeavoured to obtain more ship calls by providing facilities for various types of vessels and for handling a variety of different cargoes. Thus, there are Ro-Ro berths, bulk handling berths, cool stores, etc.

The situation in regard to over-investment in facilities is not confined to the northern ports. Hobart's current construction programme will result in an increase from three to four Ro-Ro berths.⁽¹⁾

(1) One Ro-Ro berth at Hobart does not require lifting ramp facilities.

The wasteful duplication that has arisen in Tasmanian ports appears to be partly the result of institutional rigidities which have prevented any port from attracting more business with lower charges. Since 1959, ANL has pursued a policy of maintaining equal inclusive sea freight rates to all northern Tasmanian ports. Thus, a port could gain nothing by lowering its charges, and the result has been that the three northern ports now make the same charge for wharfage.

Tonnage and Rental Charges

Table 7.3 also gives tonnage charges for two sizes of ship. Again, charges at northern Tasmanian ports are seen to be relatively high compared with other Australian ports, although the charges at Burnie and Launceston compare favourably with those levied at Brisbane and Townsville.

The Australian National Line and the Union Steam Ship Company separately rent all of the Ro-Ro terminals that they use in Tasmania. These rentals make up a substantial part of the revenue item for rent shown in Table 7.4. Some ports waive tonnage charges for ANL because the Line rents its terminals.

The fact that the ports have a number of terminals rented permanently to the two major shipping lines does not ensure that the capital charges on these facilities are adequately serviced. In the submission by the Port of Burnie to the Senate Inquiry the following statement was made, '... ANL are now only paying rental to the Board on about half the total sum the Board has expended in providing Sea Road Facilities in the port of Burnie'⁽¹⁾. In other words, such a statement indicates that the port authorities have invested in port and terminal facilities in order to attract shipping visits, and the investment would only be covered financially if enough wharfage payments were generated

(1) Senate Standing Committee on Primary and Secondary Industry and Trade (Reference: Tasmanian Shipping Freights) 1970-71, p.442 (5 March 1971).

to cover the balance of the capital servicing. In fact, the total amount of business is fairly static and spread fairly evenly over the four ports. Under these circumstances, the only way to meet the balance of the capital charges not met by rentals is to maintain wharfage at a high level.

CHAPTER 8. FREIGHT FORWARDING

A shipper moving freight to or from Tasmania usually must do so through a freight forwarder, who takes responsibility for the door to door movement of goods. The freight rate quoted to the shipper covers the total door to door movement and, in the Tasmania trade, includes:

- . sea freight
- . wharfage
- . freight forwarder's charges for land movement, consolidation, etc.

The sea freight rate and wharfage charges have already been examined in previous chapters. The services provided by freight forwarders, the charges made for those services and the cost structure of freight forwarding operations are examined in this chapter.

DEVELOPMENT OF FREIGHT FORWARDING IN TASMANIA

Prior to the introduction of Ro-Ro shipping in the Tasmania trade in 1959, the methods of consignment, delivery and handling of cargo were radically different from that used now. The common procedure was for the customer to deliver to the wharf direct from factory or warehouse, in whatever form of packaging suited him, using either his own transport or a local haulier to make the delivery. In some cases, the consignor would employ a forwarding agent to arrange the delivery of the goods to the wharf and to prepare the necessary documentation. The shipping company took charge of the goods on arrival at the wharf and carried out the stevedoring, including making up the sling loads and lifting and stacking in the holds. At the port of destination, the shipping company was responsible for the reverse operations, up to the point of stacking in wharf sheds. The shipment would then be collected from the wharf by a transport operator and delivered to the consignees.

Following the introduction of Ro-Ro vessels, the major change was that, with the exception of a few of the very largest shippers, the individual consignor could no longer deal direct with the shipping company. ANL would only accept unitised loads and this meant that the shipper had to arrange with a freight

forwarder to present his goods to ANL in the required manner. However, with Union Steamship and Holymans, the shipper could either deal with their freight forwarding section or engage an outside forwarder to handle his consignment.

In general this has meant that many of the stevedoring activities previously carried out by the shipping companies have been transferred to the freight forwarder. The freight forwarder assumes responsibility for the movement of goods door to door, covering the following services:

- . collection of goods from the consignor in either consolidated or non-consolidated form
- . consolidation of goods into unit loads
- . provision of equipment - containers, tarpaulins, ropes, etc.
- . organising the line haul, preparation of documents etc.
- . delivery to line haul origin
- . line haul
- . collection from line haul destination
- . deconsolidation into individual consignments
- . delivery to consignees
- . relocation of containers and equipment.

A major factor in the reductions of up to 60 percent in the sea freight rate (see Chapter 5) was ANL's withdrawal from conventional stevedoring and handling operations. Despite the substantial reduction in sea freight rates, however, the door to door cost decreased only marginally, in many cases, as the consignor had to pay the additional cost of the freight forwarder's services.

THE COST OF FREIGHT FORWARDING

The major problem in analysing the cost of freight forwarding operations to and from Tasmania is that there is no 'typical' freight forwarder. Each has developed his business in an individual way and, partly by taking over other firms, has accumulated a specific set of contracts. It is possible that a rate between two cities is a forward rate for one company and a

backloading rate for another.

Factors Affecting Costs

Freight forwarders' charges will vary widely from consignment to consignment depending upon a number of factors including:

- whether it is part of a major contract or a 'one-off' consignment
- the attractiveness of the particular commodity, particularly in terms of its density
- whether it is backloading for the particular forwarder.

The importance of the first of these is evident; a one-off consignment incurs a higher charge than a consignment that is part of a major contract. The latter two factors call for some discussion.

Cargo Density: By mixing high density goods with lightweight goods in the one container or vehicle, the available space can be fully utilised and the maximum permissible weight achieved. In practice, it is often difficult to obtain a balance between dense and light cargo, so that freight forwarders may be prepared to accept very low profit margins on particular products in order to obtain a good mix and thus improve total profitability.

Most goods sent to and from Tasmania by sea are charged for on the basis of the space they occupy. The only exclusion from this category is the very dense cargoes (e.g. steel) which are charged on a weight basis. This means that many lightweight goods have to bear relatively high freight rates compared with similar goods being moved on the mainland.⁽¹⁾ The cheapest way to

(1) For illustration of this and other matters outlined in this Chapter see Annex E.

Generally, the longer the line haul, the greater the proportion of total costs made up by line haul costs. However, the influence of distance may be offset to some extent by the influence of changes in depot costs (in particular, consolidation and deconsolidation) and pick-up and delivery costs. In the Melbourne to north Tasmania trade the sea freight is lower in the northbound direction but, because depot costs are significantly lower at the Tasmanian end (due largely to the lower proportion of cargo requiring consolidation), sea freight is in fact a higher proportion of the total rate in the northbound than in the southbound direction.

Depot Costs: The major components of actual depot costs are:

1. management and administration costs, including sales staff
2. cost of premises
3. labour costs
4. clerical costs
5. materials handling equipment costs
6. overhead costs.

Rent and labour costs vary widely from state to state and it is these components, in particular, that can significantly affect depot costs. An important factor tending to increase Tasmanian depot costs is the fact that there are four major centres, Hobart, Launceston, Devonport and Burnie, in the one small state. It is necessary for freight forwarders serving Tasmania to have depots in all, or most, of these centres, even though there is not sufficient trade to fully utilise them throughout the year. The national freight forwarders say that the major reason for keeping depots in four Tasmanian ports is to satisfy national distribution needs of major mainland clients moving the so called 'grocery lines' into Tasmania.

The main activity at the depots is consolidation and deconsolidation of cargo. The term consolidation refers to cargo being collected loose from the shipper's store and taken to a

carry lightweight commodities on the mainland is generally road transport whereas sea transport, which is very suitable for dense cargo, is not as suitable for volume cargo. For example, a 120 cubic foot per ton cargo is still only charged on a ton weight basis when using road but the same cargo on a ship would be charged at the rate of 3 cargo tons per 120 cubic feet.

Backloading: Even though the Tasmania-mainland trade is balanced (north and southbound tonnages about equal), there is difficulty in obtaining backloading because a large volume of northbound cargo originates from a small number of producers. Much of this northbound cargo is covered by contracts presently held by the local forwarders. Competition for the few remaining cargoes is very high among the national forwarders, and this causes many of the northbound door to door rates to be kept low. Such competition for backloading is also common in mainland freight forwarding.

The Composition of Freight Forwarders' Contract Rates

Table 8.1 summarises operations on six routes and covers all types of contracts and consignments. Details vary widely from forwarder to forwarder and from contract to contract.

Table 8.1 - COMPOSITION OF FREIGHT FORWARDERS' CONTRACT RATES
(Per cent)

	Melb.- Nth Tas.	Nth Tas. -Melb.	Sydney- Nth Tas.	Nth Tas. -Sydney	Syd- Perth	Perth -Syd.
Depot costs						
-origin	16	13	16	12	8	7
-destination	15	10	15	9	3	4
Pick-up costs	6	8	6	8	7	5
Delivery costs	6	11	5	11	8	9
Line haul	50	51	53	55	69	70
Profit	7	7	5	5	5	5
Total	100	100	100	100	100	100

Source: National freight forwarders' estimates

freight forwarder's terminal for packing into containers. Deconsolidation is the 'breaking down' of container loads into destination packages. The comments relating to consolidation costs are also applicable to deconsolidation costs.

Consolidation costs will differ greatly from city to city and from depot to depot within the same city depending upon:

- the proportion of a depot's cargo that requires consolidation
- the nature of the cargo requiring consolidation, the amount of consolidation required, and the difficulty of the consolidation
- the type of equipment used for consolidation in each depot.

In general, freight from Melbourne or Sydney to Tasmania requires a far higher degree of consolidation than that moving north. Estimates of the proportion of cargo requiring consolidation varies fairly widely but average estimates were:

Sydney or Melbourne to Tasmania 80 - 90 percent
Tasmania to Melbourne or Sydney 40 - 60 percent

Generally, consolidation costs were found to be considerably lower in the Tasmanian depots than on the mainland. Higher per unit consolidation costs are incurred on the mainland (especially in Sydney) due to higher labour costs and to the high cost of renting depot space close to the central business district. This is in addition to southbound cargo requiring more handling and packaging than the northbound cargo.

Estimates given were \$0.90 - \$1.40 per ton for actual consolidation costs in Tasmania compared to \$1.30 - \$4.00 on the mainland for the cargo actually consolidated.

Pick-up and Delivery Costs: These vary from location to location depending upon:

- average distance from customer's factory or store

to freight forwarding depot or line haul origin
• the effect of congestion, delays, etc., on transport costs.

Although distances to the forwarder's depot in a Tasmanian city are relatively short, the pick-up distances in a large city, such as Sydney, are little longer because each major forwarder has several depots. Nevertheless, pick-up and delivery costs are generally higher in the mainland capital cities, due mainly to higher labour costs and greater congestion costs (i.e. more time is taken getting from customer's factory to forwarder's depot).

Equipment: On the mainland, a palletised load can generally be loaded directly on a motor vehicle and need only be covered by a tarpaulin if road is to be used for the line haul, and in the case of enclosed rail wagons, palletised cargo can be loaded directly into the wagons. However, in the Tasmania trade, the load must generally be packed into a 'container' acceptable to the shipping companies. It is generally the responsibility of the freight forwarder to supply or hire containers, pallets, tarpaulins and other specialised handling equipment. The costs of supplying and maintaining this equipment varies from depot to depot.

Some freight forwarders claim that damage to the containers and tarpaulins has reached high proportions and that additional costs are being incurred by them in order to keep the equipment in satisfactory working order.

Damage costs are considered to be far more significant with equipment used in sea transport than in land transport. The higher damage costs associated with the Tasmania trade may or may not be passed directly on to the customer. The national freight forwarders tend to insure all their operations nationally so that higher damage costs on one route will not be apportioned to that route only; instead, they are spread over the national forwarder's entire operations. On the other hand, the local freight forwarders are unable to spread their high shipping insurance costs, which are passed directly on to the customer.

Further costs are incurred in the Tasmania trade as a result of the need to relocate containers and other equipment. This particularly arises where a forwarder has the majority of his southbound cargo arriving at one port but the majority of his northbound cargo originating from a different port. In this case, it will be necessary to move equipment from port to port. These costs are more common in the Tasmania trade and increase costs to the freight forwarders and, eventually, to the shippers.

Freight Forwarders' Rate Increases

The cumulative increases, since 1965, in freight forwarders' rates for consignments from Melbourne are shown in Table 8.2. The increases apply to published schedule rates which are applicable to only a small proportion of total freight movements. Contract and special rates would generally move in the same manner but not necessarily by the same percentages.

TABLE 8.2. - FREIGHT FORWARDERS' RATE INCREASES

Route	Cumulative Percentage Increase, Sept. 1965-Jan. 1973
Victoria to -	
Tasmania	83
New South Wales	75
South Australia	70
Queensland	59
Western Australia	52
Northern Territory	44
Australian Capital Territory	73

The data indicate that over the whole period the Tasmania trade has fared worse than other routes. From 1965 to 1970 the cumulative increase in this trade was 29 per cent. Since then the increases in the sea component, coupled with other factors, have resulted in a further increase of 54 percent.

Profitability

BTE investigations suggest that the freight forwarders in the Tasmania trade try to achieve a pre-tax profit margin of 5 to 10 per cent, but in some cases the Tasmanian operations of the national freight forwarders may be run at very close to break even.

It is understood that in the construction of freight forwarders' rate schedules the common practice is to determine the costs of a medium sized consignment and to add 12.5 per cent profit margin to the freight forwarders' costs (i.e. excluding sea freight). This implies that the average overall margin on the door to door movement is 5 - 6 per cent on revenue, before tax. However, the profit margin on individual consignments can vary by up to 400 per cent, depending on the type and volume of commodity handled.

The shortage of backloading from northern Tasmania has meant that some forwarders are prepared to accept cargo at very low margins to avoid having to pay relocation costs for empty containers. This is particularly important with the movement of timber from northern ports, where forwarders are stacking timber in containers and in many cases are charging only sea freight plus mainland distribution costs. The forwarders thus avoid paying sea freight on the empty containers.

The profit rate for local freight forwarders in Tasmania is generally higher than that of the national freight forwarders on their Tasmanian operations. This is due primarily to the fact that many of the local forwarders have at least one major northbound contract which gives their operations continuity. In most cases, the national forwarders service Tasmania as the last link of their national distribution contracts; because competition for backloading is strong, rates are very low and this affects profitability. However, this route may be marginally better at the present time than some very highly competitive routes on the mainland (e.g. Sydney - Melbourne).

SUMMARY

Inefficiencies in Tasmanian freight forwarding arise as a result of the large number of depots used to handle the relatively small volume of trade. Most forwarders are unable to achieve a balanced movement through each depot and find it necessary to relocate a great deal of equipment. Forwarders could probably arrange among themselves to rectify some of the imbalances in their individual businesses. On the other hand, Tasmanian shippers do benefit from the strong competition for northbound cargoes when forwarders endeavour to fill returning containers.

CHAPTER 9. POSSIBLE CHANGES IN SHIPPING SERVICES TO TASMANIA

It was shown in Chapter 6 that the cost structures of certain types of modern cargo-only ships are lower than those of ships presently used between Tasmania and the mainland. This chapter deals mainly with the implications of restricting shipping services to cargo only, and to using modern larger ships. With a view to a shipping service for cargo only, we examine the possibility of using air transport of passengers as a complete alternative to sea.

MOVEMENT OF INTERSTATE PASSENGERS BY AIR

At the present time, only about 20 per cent of all passengers crossing Bass Strait do so by sea; the majority use airline services which provide a higher frequency of service at a competitive price.

Air passenger services to Tasmania do not operate at a loss. Thus, if all passengers were to travel by air, the present losses on sea passenger services - currently in excess of \$1m per annum - would be avoided. Annex G examines the feasibility of carrying all passengers across Bass Strait by air.

Ceasing all sea passenger services would mean that those who now travel at the cheaper sea fares would have to pay more for an economy air fare, the greatest increase being \$4. No survey has been made of passenger attitudes on this question. However, many people already travel in the more expensive sea berths, and so pay more than the economy air fare (See Table 1 of Annex G).

Perhaps the most important feature of a complete transfer of all passengers to air would be the change of the main entry port. Most sea passengers now arrive at Devonport. In Annex G it is explained that any significant increase in air traffic across Bass Strait would have to be handled by DC9 jet aircraft which

can operate only into Launceston and Hobart. For some present sea passengers, Hobart or Launceston is likely to be a more central location than Devonport, but tourists with their own vehicles would suffer some inconvenience. To pick up their cars, passengers would have to travel from Launceston airport to Bell Bay (40 miles distant) or to Devonport (65 miles). Nevertheless, there seems to be no reason why these transport arrangements could not be introduced and a special 'package fare' set to cover the cost of air passage, sea transport for a tourist vehicle, and the necessary ground transport connections on both sides of Bass Strait.

To some extent, tourist vehicles would still be a problem because peak tourist movements occur during the summer months when peak freight loadings also occur. At such times, the correct pricing policy would be to charge the same rates for tourist vehicles as for freight. This would mean an increase of up to 100 per cent on present rates for such vehicles.

At all other times, it would be rational pricing policy to charge a concessional rate to assist in utilising available shipping space. The present rate for tourist vehicles can be regarded as such a concessional rate.

ALTERNATIVE SHIPPING SERVICES

Assuming that the majority of ship operating costs are fixed, any excess capacity means that the cost per ton of cargo can be reduced by increasing the utilisation of vessels. This can be achieved by reducing the number of vessels used to carry a given amount of cargo and, hence, reducing the frequency provided. An alternative is to replace some of the existing tonnage with more efficient vessels which may or may not operate at reduced frequency.

Annex H examines, in some detail, different combinations of vessels that could have carried the 1971-72 non-bulk tonnages moving between northern Tasmanian ports and Melbourne. Because growth in non-bulk cargo is very slow, the study is relevant to future shipping programmes.

The basis of this investigation was an analysis of cargo flows in 1971-72 between Melbourne and the northern Tasmanian ports. Considerable tonnages were moved by land between ports to take advantage of earlier sailings and, on the basis of available evidence of such movements, the flows to and from Tasmania have been attributed to origins and destinations. This has given the 'base' tonnages shown in Fig. 9.1.

Taking these base tonnages moved in 1971-72 and a range of possible ship sizes, it was found that the non-bulk cargo could be handled by the following arrangement of shipping services:-

1. one vessel of 7,500 cargo tons capacity operating two round trips per week⁽¹⁾
2. one vessel of 10,000 cargo tons capacity operating two round trips per week
3. two vessels (one of 2,500 cargo tons capacity and one of 3,500 cargo tons capacity) each providing three round trips per week

(1) In this Chapter and Annex H, capacity is specified in terms of cargo tons. This may differ significantly from capacity in dead weight tons e.g. the new vessels of approximately 5,000 dwt planned for introduction to the Tasmania trade by both ANL and USS are estimated to have a practical cargo capacity under the proposed operating conditions of about 3,500 cargo tons.

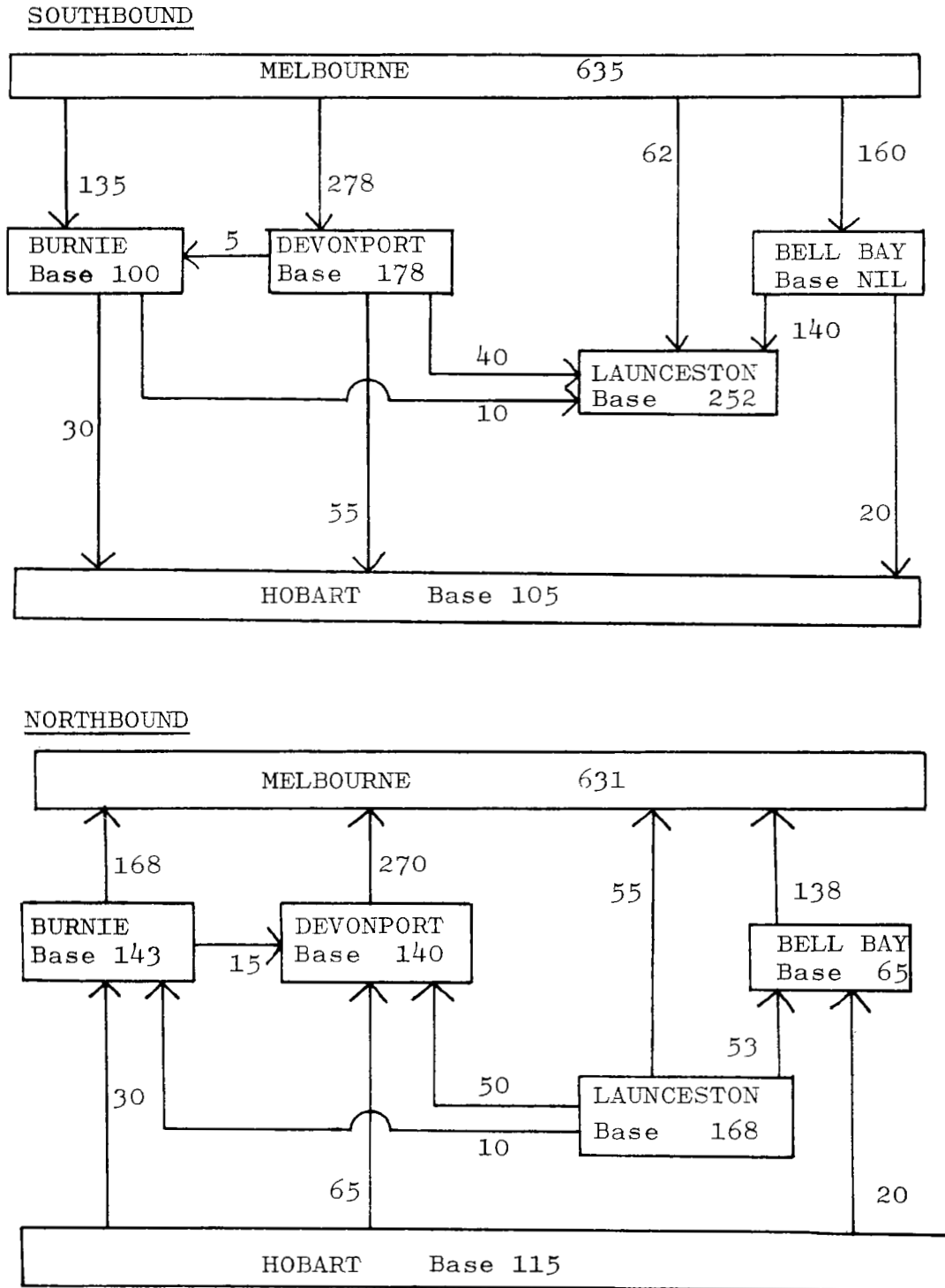


FIG.9.1 NON-BULK FREIGHT MOVEMENTS BETWEEN MELBOURNE AND NORTHERN TASMANIAN PORTS, 1971-72

Figures show thousands of cargo tons moving. Apart from figures of movements to and from Melbourne which were obtained from records of Tasmanian port authorities, all other figures shown are BTE estimates.

4. three vessels (two of 2,500 cargo tons capacity and the other one of 3,500 cargo tons capacity) each providing three round trips per week.

The costs per cargo ton of operating these ships on the sea leg only, as shown in Table 9.1, are estimated to be for the four alternative arrangements, in order, \$1.98, \$2.27, \$3.45 and \$5.08. Utilisation would range from 84 per cent to 50 per cent.

TABLE 9.1 VARIOUS ALTERNATIVE ARRANGEMENTS OF SHIPPING
SERVICES BETWEEN MELBOURNE AND NORTHERN TASMANIAN
PORTS: SEA LEG COSTS

Ship arrangement (Number of ships of various cargo ton capacities)	Frequency (Round trips per year)	Annual cargo capac- ity ('000 cargo tons)	Utilisation (%)	Total annual ship cost (\$ '000)	Sea-leg cost per ton (\$)
(1) One x 7,500	100	1,500	84	2,511	1.98
(2) One x 10,000	100	2,000	63	2,880	2.27
(3) Two (1 x 2,500 + 1 x 3,500)	300	1,800	70	4,363	3.45
(4) Three (2 x 2,500 + 1 x 3,500)	450	2,550	50	6,436	5.08

Source: BTE estimates.

The costs considered so far have excluded terminal charges and wharfage charges. In Chapter 6, \$1.30 per ton was estimated as the terminal charge in the Tasmania trade. This cost is essentially a fixed minimum and can be taken as the likely terminal cost for any shipping service designed to move existing tonnages of cargo. Similarly, it seems unlikely that the present average wharfage of \$1.76 per ton could be significantly reduced even if cargo were to be concentrated in fewer than the present three ports⁽¹⁾.

(1) Possible variations in wharfage due to changes in port practices or organisation have not been taken account of in this analysis.

For the purpose of this analysis, terminal costs and wharfage are considered to be constant for all strategies at \$3.06 per ton.

LAND TRANSPORT AND INTRASTATE CARGO MOVEMENT

In considering alternative shipping strategies, land transport costs, which vary according to the strategy adopted, must also be considered. The assumptions underlying estimated interport movement are set out in Annex H. Land movements are costed at three cents per ton mile⁽¹⁾. At this level, they cover operating costs only and include no allowance for rail and road upgrading that might be required because of increased traffic, nor for any increase in rolling stock, road transport vehicles and cargo handling and storage equipment.

As the frequency of service increases the extent of intrastate movement of cargo decreases, with a consequent reduction in the land transport cost per ton of cargo moved through northern ports. The increased intrastate movements tend to offset the cost reducing effect of operating vessels at lower frequencies. This is shown in Table 9.2, where the cost per ton of the estimated intrastate cargo movements varies from \$1.28 - \$1.98 for the large vessels (the 7,500 and 10,000 cargo tons capacity vessels) to 54 cents for the arrangement of two 2,500 ton vessels and one 3,500 ton vessel.

(1) For the purposes of this illustrative exercise, the BTE has considered the average costs of land movements to be three cents per ton mile. This cost may understate the true road cost and overstate the rail cost, although average ton mile rates on Tasmanian railways are currently estimated to be higher than three cents per ton mile.

TABLE 9.2. VARIOUS ALTERNATIVE ARRANGEMENTS OF SHIPPING SERVICES BETWEEN MELBOURNE AND NORTHERN TASMANIAN PORTS: SEA LEG AND LAND TRANSPORT COSTS (INCLUDING TERMINAL COSTS AND WHARFAGE)

Ship arrangement (Number of ships of various cargo ton capacities)	Ship Costs				Land transport cost	Ship cost plus land transport cost
	Sea leg cost	Terminal cost	Wharfage	Total		
(1) One x 7,500	1.98	1.30	1.76	5.04	1.28-1.98	6.32-7.02
(2) One x 10,000	2.27	1.30	1.76	5.33	1.28-1.98	6.61-7.31
(3) Two (1 x 2,500 + 1 x 3,500)	3.45	1.30	1.76	6.51	0.76-0.87	7.27-7.38
(4) Three (2 x 2,500 + 1 x 3,500)	5.08	1.30	1.76	8.14	0.54	8.68

Table 9.2 also shows that the total ship costs on the larger vessels operating at lower frequencies are up to \$3.10 per ton lower than for smaller vessels operating more frequently. However, the differential is narrowed when land transport costs are taken into account.

The first three shipping arrangements all result in savings compared with the estimated costs of the current services, i.e. shipping costs plus land transport costs. However, the first two strategies involve a considerable reduction in the frequency of service. A further cost in these cases might be for additional warehousing both in Tasmania and on the mainland and for additional stockholding as a result of the reduced frequency.

These are problems which Tasmanian shippers must face in the future. If lower frequencies of service can be accepted, there is some potential for cost reduction and a reasonable chance of containing freight rates. If high frequencies to these ports are

required then the result will be low utilisation of vessels and relatively high unit costs. In view of the frequency of the service provided over the last decade, a daily service (i.e. six per week) to northern ports from Melbourne operated by the 2,500 ton and 3,500 ton vessel seems most likely to be acceptable.

The alternatives considered could all handle the expected three to five per cent annual growth in the non-bulk cargo trade for some years. At present cost levels, it appears that a service with one vessel of 2,500 cargo tons capacity and one of 3,500 tons capacity, providing 6 sailings per week to northern ports, would result in shipping cost savings of about one dollar per ton. If land transport costs are taken into account, the total saving becomes a little less than one dollar.

CHAPTER 10.

CONCLUSIONS

THE PRESENT POSITION

In Chapter 2, it was shown that the Tasmanian economy is heavily dependent on interstate trade. The value of exports (interstate and overseas) is a little over 50 per cent of the gross value of primary and secondary production combined; more than twice as much of the output of secondary industries is exported as is consumed locally.

All of the vehicles and virtually all of the goods transported to or from Tasmania in 1971-72 were carried by sea, while about 20 per cent of the 640,000 passengers travelled by sea and the rest by air. There has been little growth in non-bulk freight, and growth in passengers has been below the national level.

It was shown in Chapter 3 that it is hard to make comparisons of freight rates to and from Tasmania with those on the mainland. Nevertheless, a study based on hypothetical rail and road links to Tasmania suggested that the necessity to use sea freight involves Tasmania in freight costs to Melbourne that are between \$1 and \$5 higher than the notional rates which would be incurred with the hypothetical land transport modes. With low density cargoes, the disadvantage may be as high as \$25 per ton. Bulk freight, which is very significant for Tasmania, has been excluded from the study because, with this type of freight, Tasmania suffers no disadvantage in comparison with other States.

Shipping

The review of shipping in Chapter 4 dealt with the frequency and capacity of the shipping service in relation to the goods carried. The question that must be raised is whether the frequency provided is necessary or most efficient for the non-bulk trade.

Profits in Tasmanian non-bulk shipping have been declining. This has been caused by a combination of factors - increased costs in the past few years (particularly labour), circumstances in the Tasmania trade that inhibit an increase in freight rates, the lack of recent growth in trade, the vessels now in the trade and, in the case of ANL, the effect of passenger operations.

To clarify the cost structure on which shipping rates are based, the costs of a hypothetical ship were calculated. The ship is similar to vessels being considered by USS and ANL. The calculation showed that if such a ship were operating, its costs would be \$6.30 per ton, considerably less than average cost with the current vessels. Of this total, \$3.24 (51 per cent) would be line haul costs, \$1.30 (21 per cent) terminal costs and \$1.76 (28 per cent) wharfage costs. The importance of wharfage and terminal costs in the sea freight rate is not generally realised.

Although there are difficulties, an attempt has been made to isolate the passenger costs on a mixed cargo-passenger vessel. The calculation indicates that the revenue from present passenger fares and accompanied vehicle charges do not cover costs. This has serious implications for ANL which has a statutory obligation to see that, as nearly as possible, revenue covers expenditure. As its fare levels are constrained by the competitive air fare, balancing revenues and costs in the Tasmania trade would mean raising the freight rate and thus cross-subsidising passengers.

Ports

Tasmania has four main ports - Burnie, Devonport, Launceston and Hobart - which have more than sufficient capacity to handle the present traffic.

The costs of developing the present ports, particularly the northern ports, has resulted in a high loan and interest burden. This is reflected in the port costs which, for Ro-Ro vessels, are among the highest in Australia. For the northern ports, the inclusion of port charges in the standard freight rate for ANL has resulted in uniform port charges set at the level of the highest cost port. Because competition is in quality of service provided and in obtaining more calls by ships, there tends to be wasteful duplication of port facilities. There is no incentive to reduce charges as the effect would only be to reduce the port's revenue. Financing capital expenditure from revenue has also resulted in charges being higher than necessary.

Freight Forwarding

Owing to the number of Tasmanian cities with forwarding depots, the large number of forwarders engaged and the relatively small volume of trade, there seems to be little scope for improved handling through the use of more capital intensive methods.

From the work undertaken in this study, it appears that most freight forwarding charges between Tasmania and the mainland do not have an excessive profit margin. Thus, given the present structure of the forwarding industry, there is little potential for reducing charges.

POSSIBLE CHANGES

The larger the economy and the more varied its base, the less sensitive it is to trade. If the population and the economic base of Tasmania could be increased then the relative importance of trade would decrease, so eliminating some of the disabilities caused by small size. In the short term, however, all that can be done is to attack inefficiencies in the existing transport system.

Several possible courses of action are proposed in the following paragraphs. These may result in some immediate reductions in cost but are aimed more at improving the efficiency of operations, which should result in reducing the effect of cost increases over a longer period.

Shipping

The non-bulk freight shipping service to Tasmania is not operating in the most efficient manner. It is clear from the calculations in Chapters 6 and 9 that the ships being operated on the route are not the most efficient. If ships like the hypothetical 5,000 dwt ship listed in Chapter 6 were operating then the cost per ton to some of the shipping companies could be reduced by \$1.00 - \$2.00 per ton from their present level. However, there would not be a corresponding drop in the freight rate because the shipping companies are operating at or close to a loss situation.

A difficulty is that suitable ships are unlikely to be available before the end of 1974. Even if they were available now, the result would probably not be a reduction in freight rates but a period of rate stability in the face of cost increases.

Chapter 9 and Annex H give the results of illustrative studies in rationalising frequency of service to ports and in using various alternative ship types. These studies indicate the relationship between type of ship, frequency of calls and costs. It is important that Tasmanian shippers should be aware of the alternatives. They have tended to oppose any reduction in frequency of calls but, when faced with the trade-offs, they may be prepared to accept somewhat fewer calls if costs are lowered.

Passengers

If the passenger service by sea is to be provided then it should not be cross-subsidised by freight. It appears that if all passengers are transported by air the total saving could be of the order of \$1m.

Ports

A central authority should be set up to plan and control development of Tasmanian ports in the best interests of Tasmania. It should control the capital works programme and the financing of it. The present port authorities would still be responsible for the efficient running of the ports. The ports should also be relieved of duties in relation to small boats etc., which should be the responsibility of the State Government.

If the practice of financing capital expenditure out of revenue ceased there could be a saving of 15 to 25 cents per ton in the cost of wharfage, based on past experience. The central ports authority would also be responsible for setting the charges for each port on a rational basis and for overseeing negotiations between shippers, port authorities and shipping companies.

Freight Forwarding

A reduction in the number of depots would give rise to greater throughput, making possible the more efficient use of facilities and equipment and possibly a reduction in the overall costs of forwarding operations. There could also be some rationalising of freight imbalances between forwarders.

ANL should have the same right as other shipping lines to operate as a freight forwarder in the Tasmania trade. However, few cost savings could be expected from the entry of an additional forwarder in the trade.

SHIPPING STATISTICS

This Annex contains basic statistical data concerning the operation of non-bulk shipping on interstate routes to and from Tasmania.

The tables included are -

<u>Table No.</u>	<u>Contents</u>	<u>Page No.</u>
1	Scheduled interstate non-bulk shipping services to Tasmania effective from July 1972	A2
2	Tasmanian interstate non-bulk cargo movements by sea, 1971-72	A3
3	Movements of interstate non-bulk ships at Tasmanian ports, 1971-72	A5
4	Southbound loadings to Tasmania on interstate non-bulk ships, 1971-72	A6
5	Northbound loadings from Tasmania on interstate non-bulk ships, 1971-72	A7
6	Tasmanian interstate sea freight movements by company and route, 1971-72	A8

TABLE 1 - SCHEDULED INTERSTATE NON-BULK SHIPPING SERVICES TO TASMANIA
EFFECTIVE FROM JULY 1972

Ship and type	Ship tonnage	Twenty-eight day schedule
AUSTRALIAN NATIONAL LINE (a)		
'Empress of Australia' Passenger/cargo Ro-Ro ship	12,037 gross	12 Sailings ML-DV-ML
'Australian Trader' Passenger/cargo Ro-Ro ship	7,005 gross	4 sailings SY-LT-BU-SY 2 " SY-HB-SY
'Bass Trader' Cargo-only Ro-Ro ship	1,653 dwt	6 sailings ML-BU-ML 4 " ML-DV-ML 2 " ML-LT-ML
Searoader (b) Cargo-only Ro-Ro ship	4,422 dwt	Aust. Coastal service incl. 4 sailings ML-BU-ML 4 " ML-DV-ML 4 " ML-LT-ML (with some sailings to SY)
'Echuca' Cargo-only cellular container ship	3,210 dwt	4 sailings ML-DV-ML
'Jeparit' Conventional cargo ship	8,400 dwt	Aust. coastal schedule including one sailing HB-BN
UNION STEAMSHIP CO.		
'Seaway Queen' Cargo-only Ro-Ro ship	3,155 dwt	4 sailings ML-HB-ML 2 " SY-HB-SY
'Seaway King' Cargo-only Ro-Ro ship	3,155 dwt	4 sailings ML-HB-ML 2 " SY-HB-SY
'Poolta' Conventional cargo ship	3,120 dwt	2 sailings SY-HB-SY (with calls at Pt. Kembla and Newcastle)
HOLYMANS		
'Mary Holyman' Cargo-only Ro-Ro ship	3,500 dwt	2 sailings AD-BU-AD 2 " AD-HB-AD
'William Holyman' Conventional cargo ship	2,180 dwt	5/6 sailings ML-LT (Kings Wharf)-ML

(a) All ANL calls to Launceston are at the Bell Bay wharves.

(b) Sydney Trader, Brisbane Trader or Townsville Trader.

NOTE: The following abbreviations are used:

Sydney	SY	Hobart	HB
Melbourne	ML	Launceston	LT
Adelaide	AD	Devonport	DV
Brisbane	BN	Burnie	BU

TABLE 2 - TASMANIAN INTERSTATE NON-BULK CARGO MOVEMENTS BY SEA,
1971-72

Ship and thousand miles sailed	Route (a)	Crossings (b)	Cargo tons (c)		Cargo ton miles (c)	
			carried -		performed ('000)-	
			To Tas.	From Tas.	To Tas.	From Tas.
Ro-Ro SHIP						
Princess(78.2)	DV-ML	147	92,875	68,462	24,705	18,211
Empress(80.7)	HB-SY	20	13,040	27,560	9,454	19,981
	BU-SY	42	18,558	41,430	12,100	24,609
	LT-SY					
Total		62	67,655	107,298	42,395	68,954
Australian Trader(80.5)	BU-ML	39	56,496	67,414	13,559	16,179
	DV-ML	41	63,492	62,162	16,889	16,535
	LT-ML	40	70,736	68,299	19,169	18,509
	HB-SY	5	4,050	7,533	2,936	5,461
	BU-SY	9	3,231	9,201	2,107	5,465
	LT-SY					
Total		134	203,903	221,545	58,069	66,560
Bass Trader (67.4)	BU-ML	(d) 52	48,017	56,685	11,524	13,604
	DV-ML	46	57,997	56,330	15,427	14,984
	LT-ML	(d) 34	51,597	35,826	13,983	9,709
Total		131	157,611	148,841	40,934	38,297
Searoader(e) (69.5)	HB-ML	18	22,641	31,509	12,249	17,046
	BU-ML	(d) 21 (d26)	30,771	43,802	7,385	10,512
	BU-SY	2 (d6)	498	6,077	296	3,610
	BU-AD	7 (0)	1,719	..	1,110	..
	BU-BN	2 (0)	(f)	..	(f)	..
	DV-ML	(d) 26 (11)	38,094	19,723	10,133	5,246
	DV-SY	0 (d15)	..	15,193	..	8,918
	LT-ML	(d) 16 (d14)	32,950	28,367	8,929	7,687
	LT-SY	0 (d3)	..	2,107	..	1,218
LT-AD	1 (0)	650	..	440	..	
Total		90	127,323	146,778	40,542	54,237
Seaway Queen (89.1)	HB-ML	49 (50)	79,628	78,862	43,079	42,664
	HB-SY	25 (24)	23,290	39,777	16,885	28,838
Total		74	102,918	118,639	59,964	71,502
Seaway King (90.4)	HB-ML	50	83,241	78,615	45,033	42,531
	HB-SY	25	31,236	44,798	22,646	32,479
Total		75	114,477	123,413	67,679	75,010
Mary Holyman (50.5)	HB-AD	17	21,881	21,811	19,168	19,106
	BU-AD	16	18,767	13,961	12,123	9,019
Total		33	40,648	35,772	31,291	28,125
TOTAL Ro-Ro SHIPS(606.2)		746	907,410	970,748	365,579	420,896

For explanation of footnotes, see following page.

TABLE 2 - TASMANIAN INTERSTATE NON-BULK CARGO MOVEMENTS BY SEA,
1971-72 (Continued)

Ship and thousand miles sailed	Route (a)	Crossings (b)	Cargo tons (c) carried -		Cargo ton miles (c) performed ('000)-	
			To Tas.	From Tas.	To Tas.	From Tas.
OTHER THAN Ro-Ro SHIPS						
Echuca (14.5)	DV-ML	(d) 45	8,202	5,455	2,182	1,451
(g)	LT-ML	(d) 9	1,432	..	388	..
Total		51	9,634	5,455	2,570	1,451
Jeparit (2.2)	HB-BN	(h) (3)	..	7,980	..	10,486
Poolta (39.2)	HB-SY	27	25,049	49,716	18,161	36,044
William Holyman(40.9)	LT-ML	67	60,879	54,827	18,568	16,722
TOTAL OTHER SHIPS (96.7)		145(148)	95,562	117,978	39,299	64,703
ALL SHIPS						
TOTAL (702.9)		891(894)	1,002,972	1,088,726	404,878	485,599

(a) Link with first, or last, port of call on mainland. (b) Number of crossings in each direction. Where number in each direction differs, the figure in brackets relates to northbound sailings. (c) Excludes tourist cars and caravans. (d) Includes sailings which called at more than one Tasmanian port on a single voyage. (e) Sydney Trader, Brisbane Trader or Townsville Trader. These identical vessels operate a regular Tasmanian service as part of their Australian coastal schedules. (f) Arrived in ballast. (g) This ship also carried overseas cargo tonnages, as follows: ML to DV, 16,800; ML to LT, 4,760; DV to ML, 58,221; and LT to ML, 5,038. (h) This vessel brought bulk goods only to Tasmania.

TABLE 3 - MOVEMENTS OF INTERSTATE NON-BULK SHIPS AT TASMANIAN
PORTS, 1971-72

Ship	Arrivals from -				Departures to -			
	ML	SY	AD	Total	ML	SY	AD	Total
HOBART								
Empress	..	20	..	20	..	20	..	20
Aust. Trader	..	5	..	5	..	5	..	5
Searoader (d)	18	..	..	18	18	..	..	18
Seaway Queen	49	25	..	74	50	24	..	74
Seaway King	50	25	..	75	50	25	..	75
Mary Holyman	..	..	17	17	..	..	17	17
Jeparit	..	..	..	..	..	..	..	(a)3
Poolta	..	27	..	27	..	27	..	27
Total	117	102	17	236	118	101	17	(a)239
BURNIE								
Empress	..	42	..	42	..	42	..	42
Aust. Trader	39	9	..	48	39	9	..	48
Bass Trader	52	..	..	52	52	..	..	52
Searoader (d)	21	2	9	32	26	6	..	32
Mary Holyman	..	..	16	16	..	..	16	16
Total	112	53	25	190	117	57	16	190
DEVONPORT								
Princess	147	..	..	147	147	..	..	147
Aust. Trader	41	..	..	41	41	..	..	41
Bass Trader	46	..	..	46	46	..	..	46
Searoader (d)	26	..	..	26	11	15	..	26
Echuca	45	..	..	45	45	..	..	45
Total	305	..	..	305	290	15	..	305
LAUNCESTON								
Empress	..	42	..	42	..	42	..	42
Aust. Trader	40	9	..	49	40	9	..	49
Bass Trader	34	..	..	34	34	..	..	34
Searoader (d)	16	..	1	17	14	3	..	17
Echuca	9	..	..	9	9	..	..	9
Wm. Holyman	67	..	..	67	67	..	..	67
Total	166	51	1	218	164	54	..	218
ALL FOUR PORTS								
TOTAL	(b)700	(b)206	43	(b)949	(c)689	(c)227	33	(ac)952

(a) Includes 3 departures to Brisbane. (b) Includes arrivals via another Tasmanian port, as follows: from ML, 7; from SY, 51; Total, 58. (c) Includes departures calling at another Tasmanian port en route, as follows: to ML, 5; to SY, 53; Total, 58. (d) Sydney Trader, Brisbane Trader or Townsville Trader.

TABLE 4 - SOUTHBOUND LOADINGS TO TASMANIA ON INTERSTATE NON-BULK SHIPS, 1971-72

Ship	Arrivals (Number)	Passengers (Number)	Tourist vehicles (Number)	Freight (cargo tons)
HOBART				
Empress (from SY)	20	4,083	769	13,040
Aust. Trader (from SY)	5	493	97	4,050
Searoader (a)	18	..	..	22,641
Seaway Queen	74	..	..	102,918
Seaway King	75	..	..	114,477
Mary Holyman	17	..	..	21,881
Poolta	27	..	..	25,049
Total	236	4,576	866	304,056
BURNIE				
Empress (from SY)	42	755	124	18,558
Aust. Trader (from SY)	9	41	30	3,231
Aust. Trader (from ML)	39	6,127	2,207	56,496
Bass Trader	52	61	..	48,017
Searoader (a)	32	..	..	32,988
Mary Holyman	16	..	..	18,767
Total	190	6,984	2,361	178,057
DEVONPORT				
Princess	147	37,289	9,336	92,875
Aust. Trader	41	5,024	1,570	63,492
Bass Trader	46	55	..	57,997
Searoader (a)	26	..	..	38,094
Echuca	45	..	..	8,202
Total	305	42,368	10,906	260,660
LAUNCESTON				
Empress (from SY)	42	5,242	1,010	36,057
Aust. Trader (from SY)	9	393	86	5,898
Aust. Trader (from ML)	40	5,129	1,996	70,736
Bass Trader	34	63	..	51,597
Searoader (a)	17	..	..	33,600
Echuca	9	..	..	1,432
Wm Holyman	67	..	..	60,879
Total	218	10,827	3,092	260,199

(a) Sydney Trader, Brisbane Trader or Townsville Trader.

TABLE 5 - NORTHBOUND LOADINGS FROM TASMANIA ON INTERSTATE
NON-BULK SHIPS, 1971-72

Ship	Departures No.	Passengers No.	Tourist vehicles No.	Freight (Cargo tons)
HOBART				
Empress of Aust.	20	3,502	565	27,560
Aust. Trader	5	553	133	7,533
Searoader(a)	18	..	..	31,509
Seaway Queen	74	..	..	118,639
Seaway King	75	..	..	123,413
Mary Holyman	17	..	..	21,811
Jeparit	3	..	..	7,980
Poolta	27	..	..	49,716
Total	239	4,055	698	388,161
BURNIE				
Empress of Aust.	42	4,933	771	41,430
Aust. Trader (to SY)	9	449	85	9,201
Aust. Trader (to ML)	39	5,282	1,600	67,414
Bass Trader	52	75	..	56,685
Searoader(a)	32	..	..	49,879
Mary Holyman	16	..	..	13,961
Total	190	10,739	2,456	238,570
DEVONPORT				
Princess	147	36,518	9,661	68,462
Aust. Trader	41	6,195	2,294	62,162
Bass Trader	46	77	..	56,330
Searoader(a)	26	..	..	34,916
Echuca	45	..	..	5,455
Total	305	42,790	11,955	227,325
LAUNCESTON				
Empress of Aust.	42	1,143	319	38,308
Aust. Trader (to SY)	9	171	52	6,936
Aust. Trader (to ML)	40	5,116	1,833	68,299
Bass Trader	34	55	..	35,826
Searoader(a)	17	..	..	30,474
Echuca	9	..	..	..
Wm. Holyman	67	..	..	54,827
Total	218	6,485	2,204	234,670

(a) Sydney Trader, Brisbane Trader or Townsville Trader

TABLE 6 - TASMANIAN INTERSTATE SEA FREIGHT MOVEMENTS BY COMPANY AND ROUTE, 1971-72

Route	To Tasmania		From Tasmania		Total freight (a) (Cargo tons)
	Arrivals No.	Freight(a) (Cargo tons)	Departures No.	Freight(a) (Cargo tons)	
AUSTRALIAN NATIONAL LINE					
Hobart-Melbourne	18	22,641	18	31,509	54,150
-Sydney	25	17,090	25	35,093	52,183
-Brisbane	..	..	3	7,980	7,980
Burnie-Melbourne	112	135,284	117	167,901	303,185
-Sydney	53	22,287	57	56,708	78,995
-Adelaide	7	1,719	..	..	1,719
-Brisbane	2	..	..	..	..
Devonport-Melbourne	305	260,660	290	212,132	472,792
-Sydney	..	..	15	15,193	15,193
Launceston-Melbourne	99	156,715	97	132,492	289,207
-Sydney	51	41,955	54	47,351	89,306
-Adelaide	1	650	..	..	650
Total	673	659,001	676	706,359	1,365,360
UNION STEAMSHIPS					
Hobart-Melbourne	99	162,869	100	157,477	320,346
-Sydney	77	79,575	76	131,291	213,866
Total	176	242,444	176	288,768	534,212
HOLYMANS					
Hobart-Adelaide	17	21,881	17	21,811	43,692
Burnie-Adelaide	16	18,767	16	13,961	32,728
Launceston-Melbourne	67	60,879	67	54,827	115,706
Total	100	101,527	100	90,599	192,126
ALL COMPANIES					
TOTAL	949	1,002,972	952	1,088,726	2,091,698

(a) Excludes tourist vehicles

AIR TRANSPORT

This Annex considers aspects of Tasmanian interstate air transport operations in terms of services provided and the passengers and freight carried. An examination is also made of some features of airline economics.

AIR SERVICES PROVIDED

Tasmania has four principal airports located near the major centres of population at Hobart, Launceston, Devonport and Wynyard (serving Burnie). In recent years Hobart and Launceston airports have been developed to take jet aircraft currently operating on Australian interstate routes, namely McDonnell-Douglas DC9s and Boeing 727s. Devonport and Wynyard receive Fokker Friendship prop-jets.

All airline services to Tasmania are from Melbourne; no overseas air services yet call at Tasmanian ports. Both Ansett Airlines of Australia (AAA) and Trans-Australia Airlines (TAA) schedule passenger/cargo services to all four airports. DC9 jets operate only to Hobart and Launceston, while Friendships are used for all services to Devonport and Wynyard. In the timetable effective from 15 December 1972, 73 DC9 and 72 Friendship flights were scheduled weekly from Melbourne to Tasmania⁽¹⁾; details of the routes flown and the number of flights to the various ports are shown in Fig. 1.

Both AAA and TAA operate pure freighter services. AAA uses Electrafreighters and Carvairs to Hobart and Launceston while TAA serves all four ports with Quick-Change Friendship aircraft, which are readily converted between passenger and cargo operations.

All air charter passenger services between Tasmania and the mainland are operated by AAA and TAA but two charter operators carry express freight by night

(1) Excludes services scheduled to and through King Island.

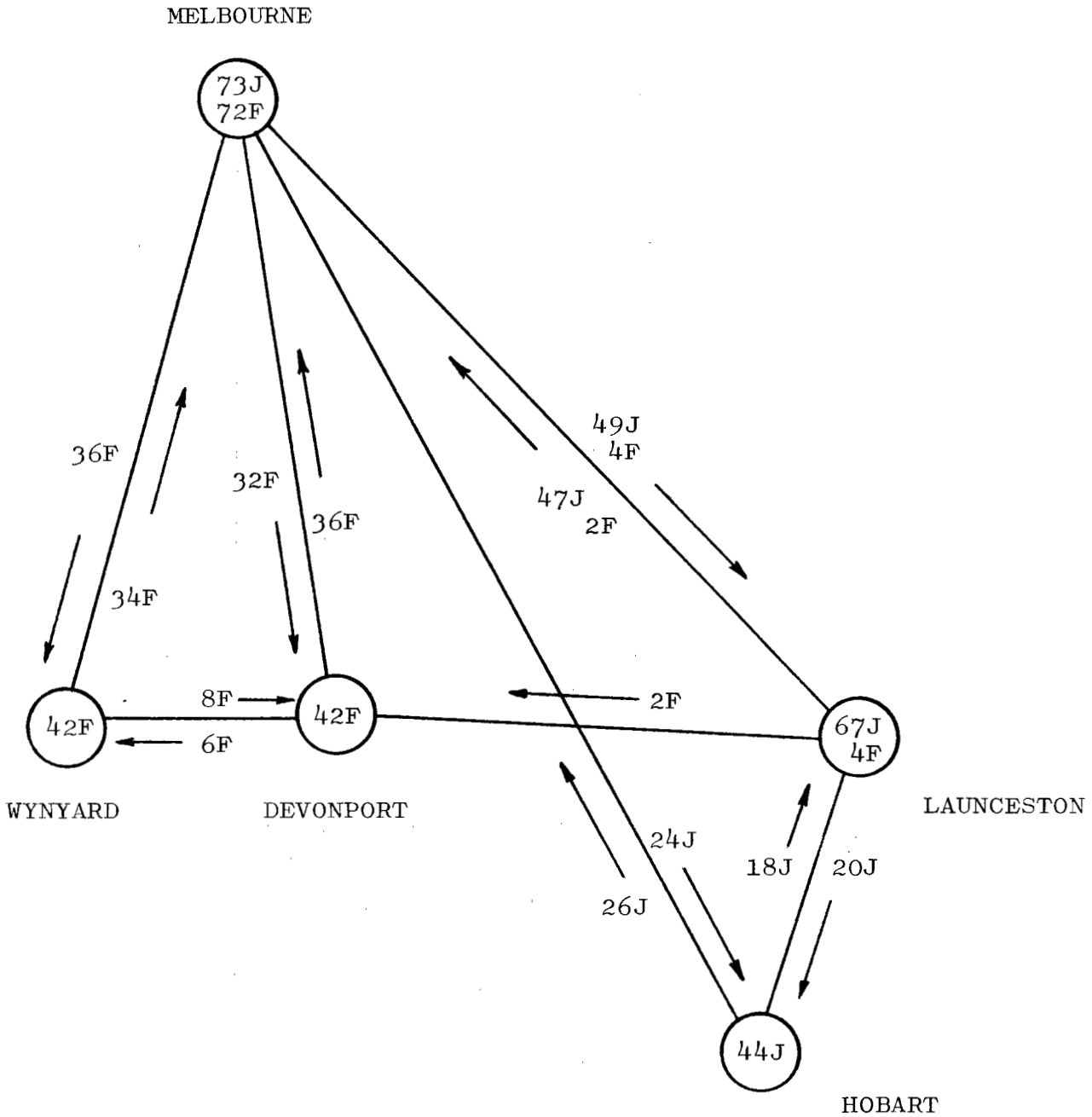


FIG.1 - SCHEDULED WEEKLY TASMANIAN INTERSTATE AIRLINE FLIGHTS
EFFECTIVE FROM 15 DECEMBER 1972

Note: The figures within the circles represent the number of aircraft arrivals scheduled each week at the airports concerned. The symbol 'J' indicates the DC9 jet; the symbol 'F' the Friendship prop-jet.

between Melbourne and Launceston for freight forwarders.

PASSENGER MOVEMENTS

It is estimated that airlines now carry 250,000 persons each year from the mainland to Tasmania, with a similar number in the northbound direction. Available statistics, shown in Table 1. cover all movements through the airports concerned and include small numbers of passengers travelling between Tasmanian airports. The total number of passengers moving through the four principal Tasmanian airports increased steadily from 308,000 in 1961-62 to 557,000 in 1970-71, but decreased by 10,000 to 547,000 in 1971-72.

Assuming that interstate passenger movements are a constant proportion of the total, the number of interstate air passenger movements in the decade to 1971-72 increased by 78 per cent. Movements through both Devonport and Wynyard more than doubled in this period while movements at Hobart increased 86 per cent. Traffic at Launceston increased by only 49 per cent.

Despite the growth that has occurred in air traffic across Bass Strait, it must be noted that it has not kept up with growth on all Australian routes. In terms of passenger movements through the four principal Tasmanian airports expressed as a proportion of movements through all Australian airports, the Tasmanian share dropped from six per cent in 1961-62 to four per cent in 1971-72.

TABLE 1 - AIRLINE PASSENGER MOVEMENTS (a) THROUGH PRINCIPAL
TASMANIAN AIRPORTS
('000)

Year	Present jet ports		Other ports		Total (b)
	Hobart	Launceston	Devonport	Wynyard	
1961-62	120	126	34	28	308
1961-63	128	131	36	30	325
1963-64	143	142	39	32	356
1964-65	158	152	45	35	390
1965-66	167	155	48	41	411
1966-67	178	159	55	52	444
1967-68	182	156	61	54	453
1968-69	196	172	68	57	493
1969-70	201	180	68	63	512
1970-71	222	198	71	66	557
1971-72	223	188	70	66	547

(a) Embarkations and disembarkations. (b) These totals exceed Tasmanian interstate passenger movements because of the inclusion of movements between Tasmanian airports. This overstatement could be of the order of 30,000 movements in 1971-72.

Source: Department of Civil Aviation.

Both first class and economy travel is available between Melbourne and all four Tasmanian airports. Greater use is made of economy travel on the Tasmanian routes than on Australian routes as a whole, with both airlines carrying more than 80 per cent of passengers economy class compared with 66 per cent for all routes. This is probably due in part to the large numbers of mainland tourists taking advantage of package deal tours of Tasmania.

The cheapest air fares are from Melbourne to Devonport and Wynyard (First class \$19.90, economy \$17). Fares from Melbourne to Launceston are \$22.70 first class and \$19.50 economy, and from Melbourne to Hobart \$29.90 first class and \$25.50 economy. Fares are the same in the return direction. The Melbourne-Devonport economy air fare is higher than the average sea fare (see Table 1 in Annex G).

Economy air fares between Melbourne and the four Tasmanian airports range from 6.7 to 7.4 cents per mile. Because of the relatively short distances involved, these rates are more

expensive than on the longer intercapital routes from Melbourne to Sydney and Adelaide (6.0 and 6.3 cents per mile respectively). However, they are less than the 7.7 cents per mile charged between Melbourne and Canberra. The distance between Melbourne and Canberra (315 miles) is further than between Melbourne and the north Tasmanian ports but not as far as from Melbourne to Hobart (381 miles).

AIR FREIGHT MOVEMENTS

Whereas passenger movements along most routes tend to be balanced in both directions, air freight traffic has certain imbalances. The greater part of the total air freight moved in Australia occurs in both directions between Sydney and Melbourne, outward from Sydney to Brisbane and North Queensland ports, and outward from Melbourne to Adelaide, Perth and Tasmania. These are considered to be the principal traffic flows and aircraft capacity is provided to meet these demands. All freight is carried in these flows at published rates and without any discounting.

On other routes, including inwards to Melbourne from Tasmanian ports, where the available aircraft capacity exceeds the volume of the freight offering, airlines offer special rates to generate additional traffic.

In the decade to 1971-72 there has been little growth in Tasmanian interstate air freight. In Table 2 total air freight through the four Tasmanian airports increased from only 15,900 short tons in 1961-62 to 17,700 short tons in 1971-72 (11 per cent). In this period increases occurred at both Hobart and Launceston but traffic at Devonport and Wynyard declined to insignificant levels. Air charter operators in 1971-72 carried a further 3,000 short tons from Melbourne to Launceston, and carried 2,000 short tons on return flights.

TABLE 2 - AIRLINE FREIGHT MOVEMENTS (a) THROUGH PRINCIPAL
TASMANIAN AIRPORTS

('000 short tons of 2,000 lb)

Year	Present jet ports		Other ports		Total (b)
	Hobart	Launceston	Devonport	Wynyard	
1961-62	5.6	8.8	0.8	0.7	15.9
1961-63	5.0	7.4	0.6	0.6	13.6
1963-64	5.0	7.9	0.5	0.5	13.9
1964-65	5.8	8.5	0.7	0.6	15.6
1965-66	5.7	8.7	0.8	0.7	15.9
1966-67	6.5	8.4	0.7	0.9	16.5
1967-68	6.7	8.4	0.8	0.9	16.8
1968-69	6.9	8.4	0.4	1.4	17.1
1969-70	7.3	9.4	0.3	1.1	18.1
1970-71	7.5	10.9	0.4	0.3	19.1
1971-72	7.0	10.1	0.3	0.3	17.7

(a) Freight loaded and unloaded. (b) These totals exceed Tasmanian interstate air freight movements because of the inclusion of freight moving between Tasmanian airports.

Source: Department of Civil Aviation.

The published air freight rate from Melbourne to all north Tasmanian ports is 9c lb, or \$201.60 per long ton. However, in the reverse direction between Tasmania and Melbourne contract rates of less than half this published rate are being offered. The airlines have endeavoured over the years to seek out additional air traffic from Tasmania and it is understood that any further developments are not likely to be significant.

SOME ASPECTS OF AIRLINE ECONOMICS

Any airline strives to develop a service pattern over the routes it serves which enables it to provide services at the least total cost. A fundamental decision affecting airline profitability is the choice of aircraft type because the larger the aircraft the cheaper is its seat mile cost to the airline. With the high capital cost of modern aircraft, the key to an airline's economic position lies in the utilisation of its aircraft. It is more profitable for an airline to fully utilise an aircraft which is too small for some of the routes flown than to have a larger aircraft just for the busier routes, which is idle for part of its time.

In planning its aircraft fleet an airline attempts to have as few different types as possible so that engineering, maintenance and crew costs can be minimised. The Australian interstate airlines have standardised for first line equipment on the Boeing 727 and the McDonnell-Douglas DC9 (which have similar engines) and for feeder routes on the Fokker Friendship. A smaller feederliner, the De Havilland Canada Twin Otter, is used by TAA on non-competitive routes in Queensland.

In providing air services to Tasmania, both airlines consider these routes as part of a national network and the costs of providing Tasmanian services would not differ from mainland routes of comparable length. As the length of the route flown decreases and a higher proportion of the aircraft's time is spent on the ground, the cost per mile of operating the aircraft increases. Routes from Melbourne to all Tasmanian ports would be considered short and, therefore, not the cheapest in Australia to operate.

With the present standardisation of aircraft types by both AAA and TAA, Tasmanian services are flown with both DC9 and Friendship aircraft. It may be possible that a cheaper overall cost solution might result if another aircraft intermediate in size between the DC9 and the Friendship were introduced for all flights to Devonport, and Wynyard, and off-peak flights to Launceston and Hobart. Before an airline introduces any new type it must be convinced that the savings in operating costs brought about by its introduction would more than offset the additional engineering and crewing costs that result from having an additional aircraft type in its fleet.

PORT DETAILS

This Annex sets out detailed information about Tasmanian ports and port operation which is not included in Chapter 6.

PHYSICAL LOCATIONS OF TASMANIAN PORTS

A brief description of the physical location of the principal ports and the facilities offered is as follows:

Hobart (see Fig. 1): The Marine Board of Hobart has jurisdiction over all port activities from Cape Portland (at the north-east of the island) around the eastern, southern and western coasts to a latitude of 41°30' south, which is to the north of Strahan. This coastline includes many wharves situated at Spring Bay, Hobart and a number of locations in the Derwent estuary (e.g. the Electrolytic Zinc Company of Australasia wharf at Risdon), and at Port Huon and Strahan.

With the exception of Hobart, these wharves principally handle the movement of specialised bulk commodities, e.g. wood chips from Spring Bay, and fruit from Port Huon. Hobart itself, centred on Sullivan's Cove on the River Derwent, currently provides three Ro-Ro berths, two of which are on Princes Wharf for interstate shipping. One of these berths is leased by ANL and the other by USS. The third Ro-Ro berth⁽¹⁾, in an area of Macquarie Point to be reclaimed, is used by Holymans. Princes Wharf also has two berths able to handle conventional shipping. Another eight berths are provided at Hobart for handling general and containerised cargo (King's Pier, Elizabeth Street Pier and the Macquarie Wharves). The berths in Sullivan's Cove provide for a depth of water ranging from 25 feet to 36 feet.

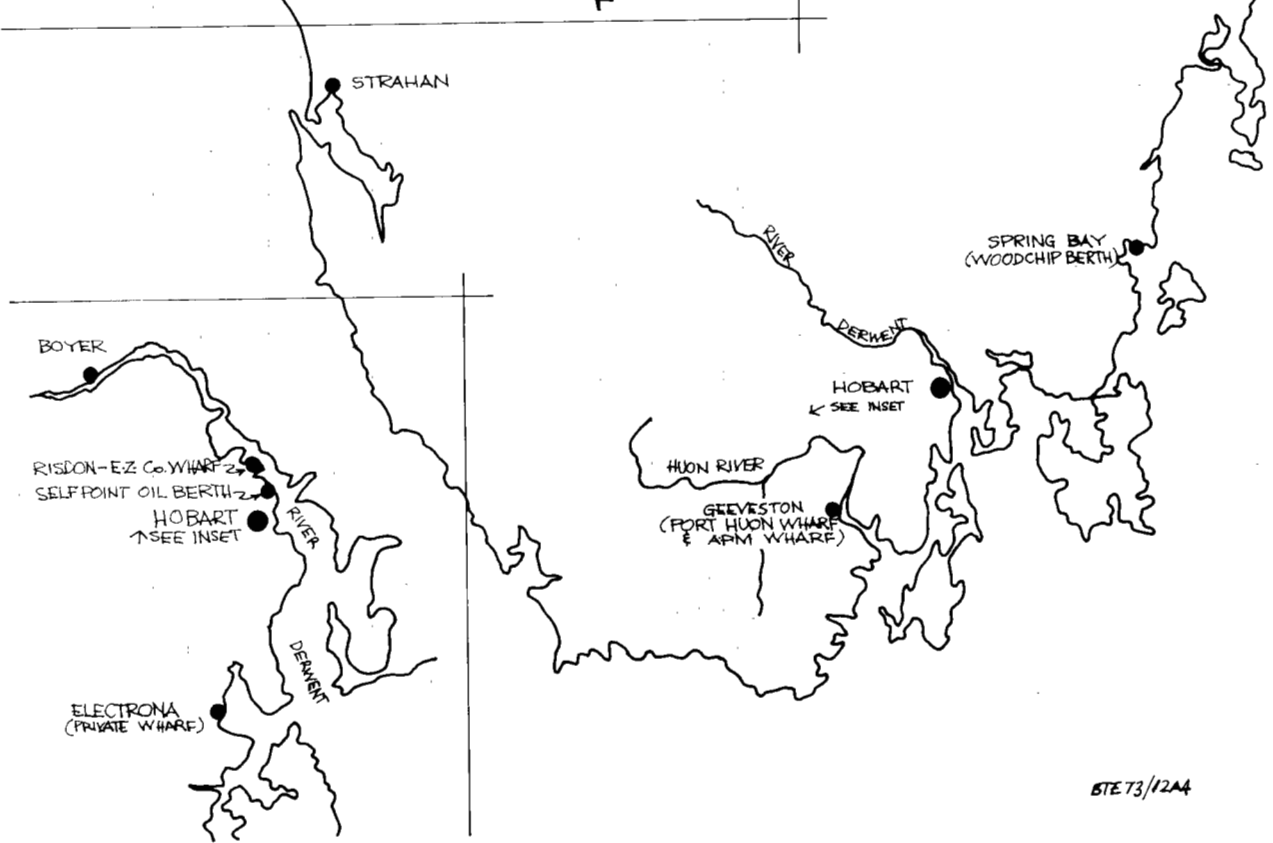
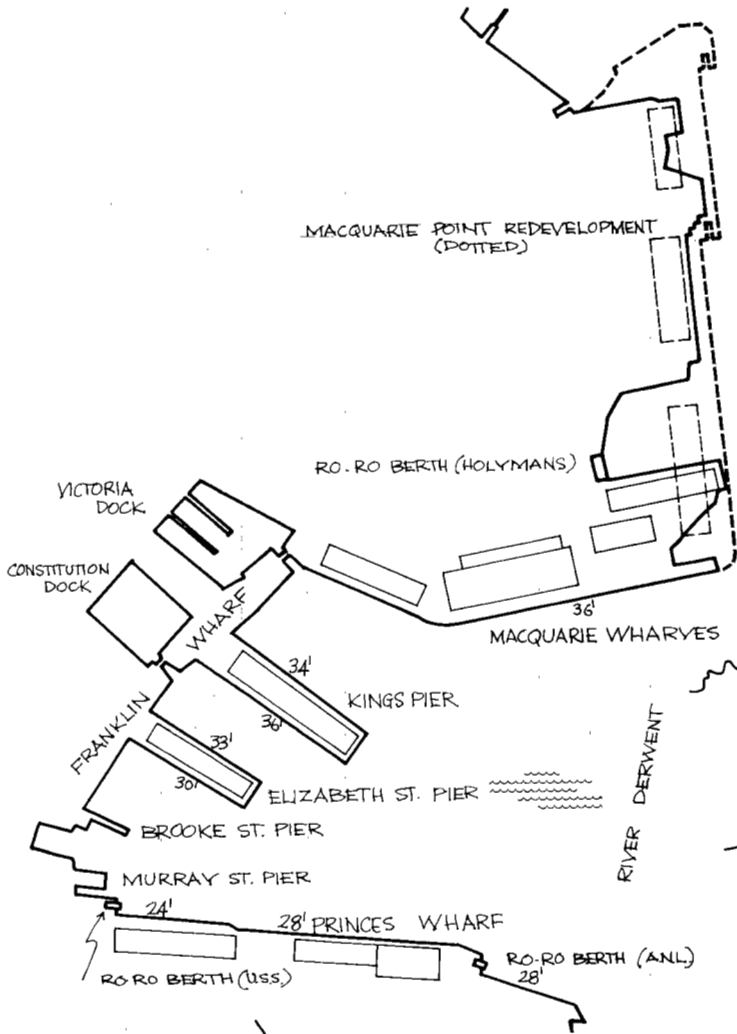
(1) This Ro-Ro berth has no drawgear. It consists of a concrete block onto which is lowered the stern loading ramp of the ship 'Mary Holyman'.

FIGURE 1



HOBART

CAPE PORTLAND



BTET3/12A4

Burnie (see Fig.2): The Port of Burnie is situated on Emu Bay in the lee of Blackman's Point. Its main protection from the seas of Bass Strait is an island breakwater 1,600 ft long which also serves as a tanker berth for oil and acid. The principal Ro-Ro berth located to the south of New Jones Pier is used by ANL. A second Ro-Ro berth located on the southern side of Ocean Wharf is used by Holymans. A bulk berth with associated conveyor loading facilities has been built on the northern side of New Jones Pier. Plans are in hand to complete wharf facilities on the southern side of New Jones Pier, to demolish Jones Pier and probably at some time in the future if the need arises to extend McGaw Pier (which has on its southern side an inward bulk cargo berth). Most wharves have at least 31 ft of water available at low tide.

Devonport (see Fig. 3): The Port of Devonport is situated within the entrance to the River Mersey and is sheltered by a natural bluff extending into Bass Strait. Extensive dredging has been done in the River Mersey to widen and deepen the channel and turning area to allow both interstate and overseas ships to berth at the wharves day or night. Two Ro-Ro berths are located on the eastern bank, one of which is leased to ANL. The western bank has four berths at present, capable of handling unitised general cargo and specialised bulk cargoes such as wheat, cement, mineral sands and oil. Large cold storage facilities are now situated on both sides of the Port. The port is at present catering for vessels of up to 600 ft and draughts of 28ft 6 in.

Launceston (see Fig. 4): The Port of Launceston Authority controls all wharves on the River Tamar from its mouth to Launceston, including some private wharves at Bell Bay and Long Reach. One Ro-Ro berth at Bell Bay is on lease to ANL and a second common-user berth which is under construction nearby will provide for conventional and cellular container vessels. Most tonnages through the Port of Launceston are handled at Bell Bay which has, besides the Ro-Ro berths, a general cargo berth and an oil berth. Beauty Point, near Bell Bay, has general cargo facilities as well as bulk storage and special loading facilities for bulk tallow. Inspection Head has two berths available to handle fruit, frozen meat, general cargo and tallow. Further upstream are a tanker berth serving the HEC power station, two specialised wood chip berths at Long Reach, and a timber explosives jetty at Hillwood. At the City of Launceston there are

FIGURE 2

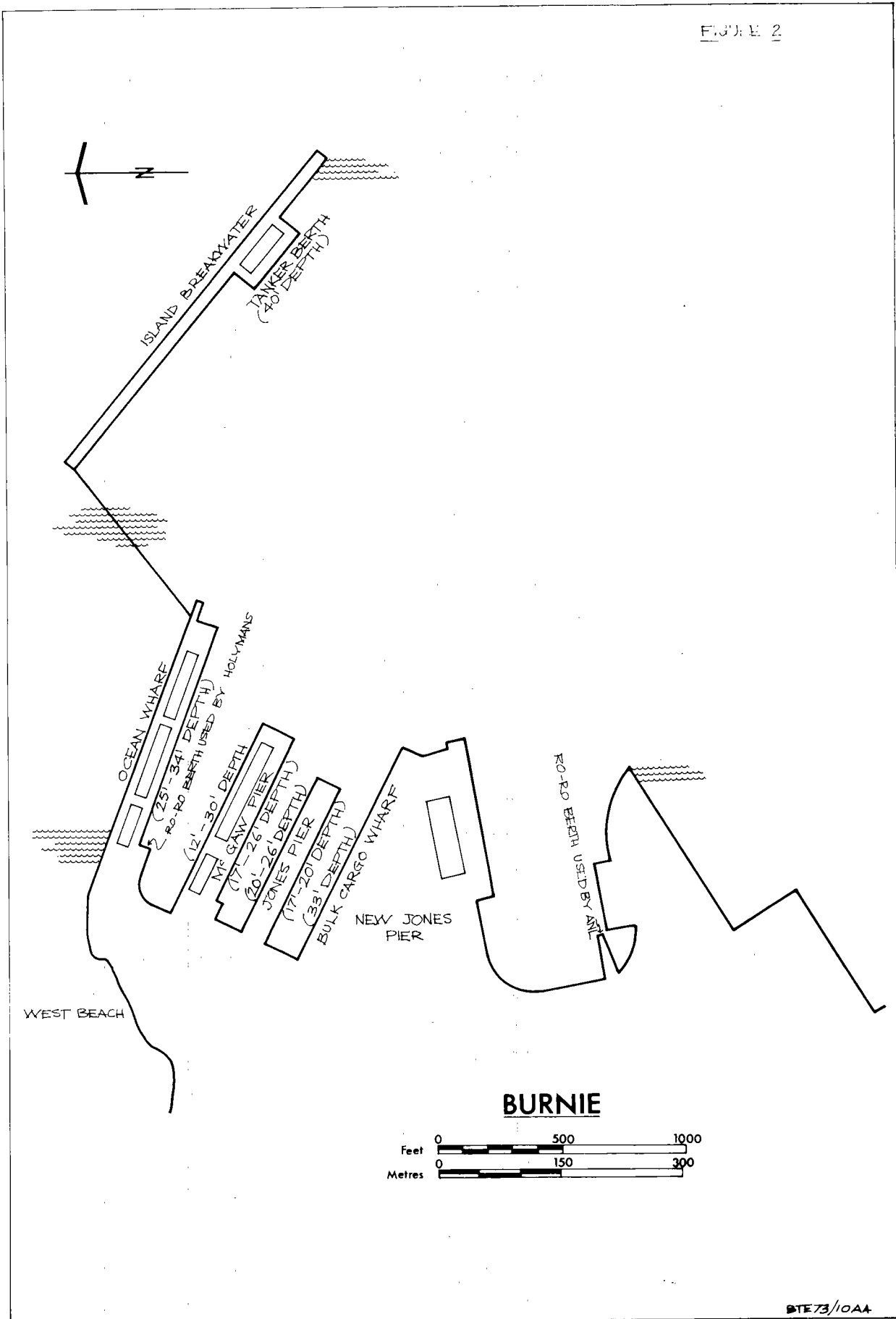


FIGURE 3

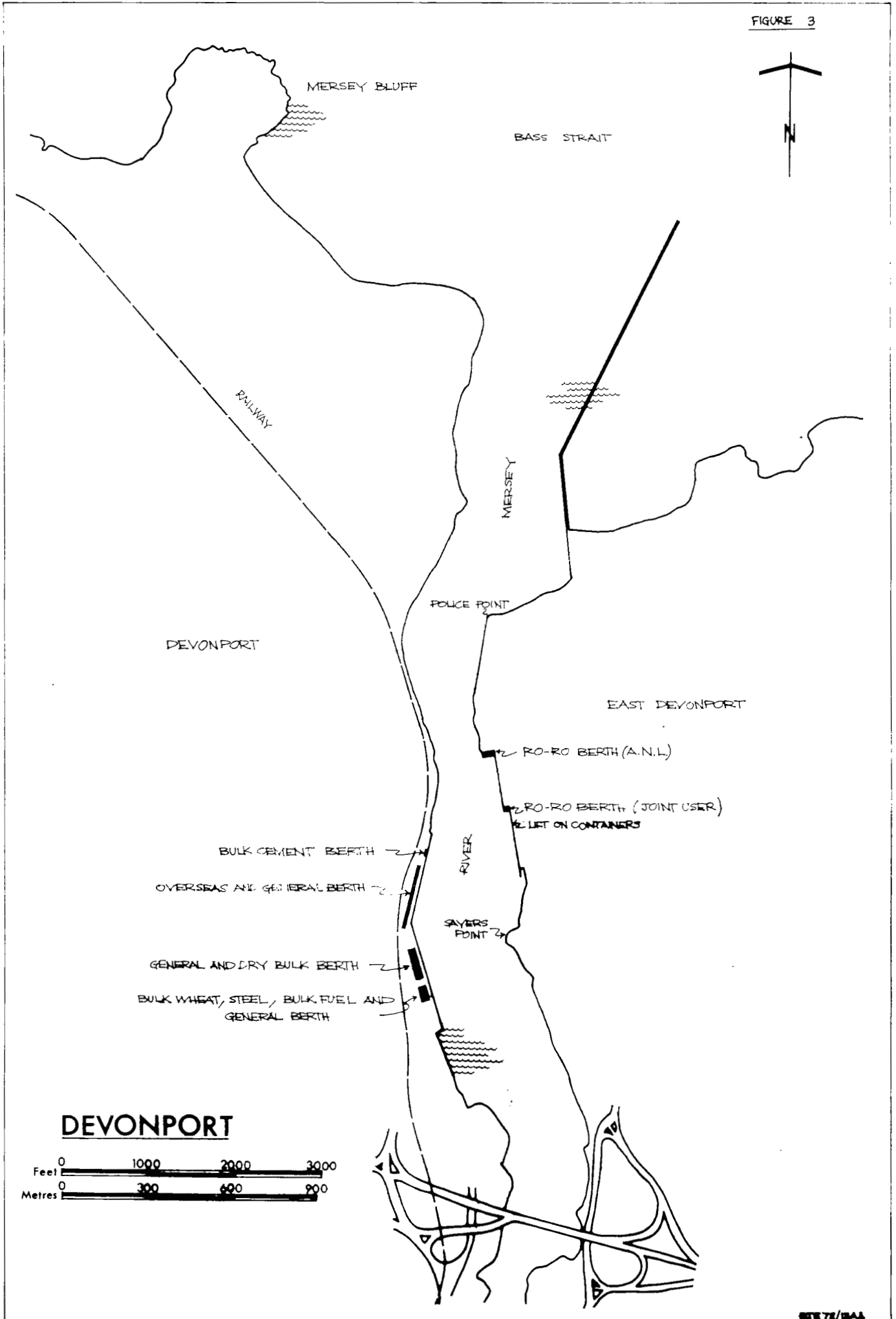
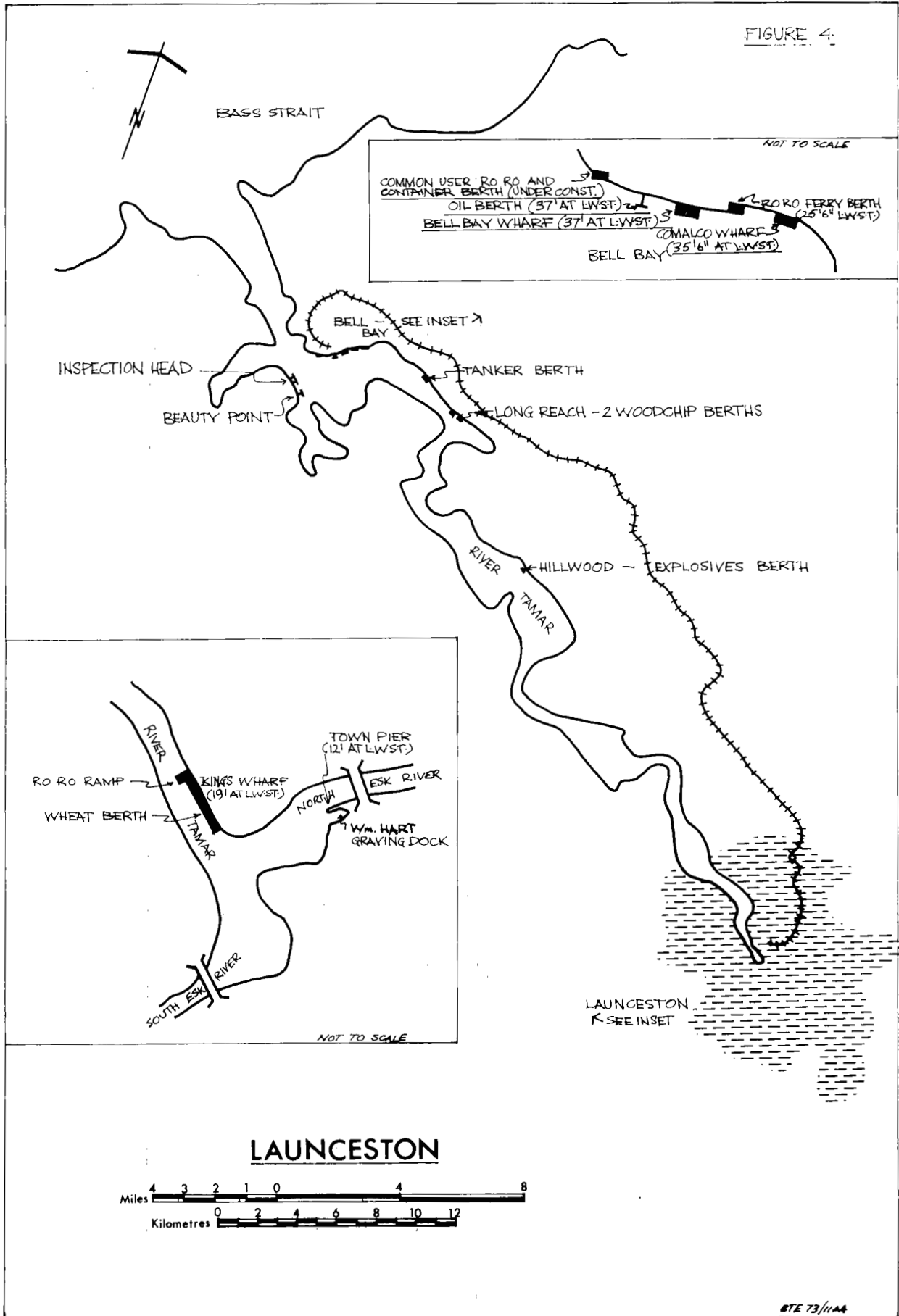


FIGURE 4:



five berths at King's Wharf and three at Town Pier. Vessels of 35ft draft currently work the port from the entrance to the Bell Bay and Long Reach berths and work is in progress to extend this to 38ft. Vessels of 18ft draught work the port to Launceston.

Details of the interstate passengers, tourist vehicles and non-bulk freight moving through each of the four ports in 1971-72, by type of ship and by origin and destination on the mainland, are shown in Table 1. Similar information but combined for all four ports appears in Chapter 2, Table 2.3, page 11 and Table 2.4, page 13.

TABLE 1 INTERSTATE TRAFFIC CARRIED BY NON-BULK CARGO SHIPS
THROUGH PRINCIPAL TASMANIAN PORTS , 1971-72

Ro-Ro ships				Freight carried by support ships	Total freight carried by all ships	
Passenger/cargo types-			Freight carried by cargo only type ships			
Passen- gers(a)	Tourist vehicles	Freight (b)	Cargo only type ships	Cargo tons	Cargo tons	
Number	Number	Cargo tons	Cargo tons	Cargo tons	Cargo tons	
HOBART INTERSTATE IMPORTS						
From ML	..	..	..	185,510	..	185,510
From SY	4,576	866	17,090	54,526	25,049	96,665
From AD	..	..	..	21,881	..	21,881
Total	4,576	866	17,090	261,917	25,049	304,056
HOBART INTERSTATE EXPORTS						
To ML	..	..	..	188,986	..	188,986
To SY	4,055	698	35,093	84,575	49,716	169,384
To AD	..	..	..	21,811	..	21,811
To BN	..	..	..	..	7,980	7,980
Total	4,055	698	35,093	295,372	57,696	388,161
BURNIE INTERSTATE IMPORTS						
From ML	6,188	2,207	56,496	78,788	..	135,284
From SY	796	154	21,789	498	..	22,287
From AD	..	..	..	20,486	..	20,486
Total	6,984	2,361	78,285	99,772	..	178,057
BURNIE INTERSTATE EXPORTS						
To ML	5,357	1,600	67,414	100,487	..	167,901
To SY	5,382	856	50,631	6,077	..	56,708
To AD	..	..	..	13,961	..	13,961
Total	10,739	2,456	118,045	120,525	..	238,570

(a) Includes the following passengers carried on the 'Bass Trader' which in this study is considered as a cargo only type Ro-Ro ship: ML to BU, 61; BU to ML, 75; ML to DV, 55; DV to ML 77; ML to LT, 63; LT to ML, 55.

(b) Excludes tourist vehicles.

TABLE 1 INTERSTATE TRAFFIC CARRIED BY NON-BULK CARGO SHIPS
THROUGH PRINCIPAL TASMANIAN PORTS, 1971-72 (Continued)

Ro-Ro ships		Freight carried by support ships		Total freight carried by all ships		
Passenger/cargo types-		Freight carried by cargo only type ships				
Passengers(a)	Tourist vehicles	Freight (b) Cargo tons	Cargo tons	Cargo tons		
DEVONPORT INTERSTATE IMPORTS						
From ML	42,368	10,906	156,367	96,091	8,202	260,660
From SY	..	..	..	..	..	..
From AD	..	..	..	..	..	..
Total	42,368	10,906	156,367	96,091	8,202	260,660
DEVONPORT INTERSTATE EXPORTS						
To ML	42,790	11,955	130,624	76,053	5,455	212,132
To SY	..	..	..	15,193	..	15,193
To AD	..	..	..	..	..	..
Total	42,790	11,955	130,624	91,246	5,455	227,325
LAUNCESTON INTERSTATE IMPORTS						
From ML	5,192	1,996	70,736	84,547	62,311	217,594
From SY	5,635	1,096	41,955	..	..	41,955
From AD	..	..	..	650	..	650
Total	10,827	3,092	112,691	85,197	62,311	260,199
LAUNCESTON INTERSTATE EXPORTS						
To ML	5,171	1,833	68,299	64,193	54,827	187,319
To SY	1,314	371	45,244	2,107	..	47,351
To AD	..	..	..	..	..	..
Total	6,485	2,204	113,543	66,300	54,827	234,670

(a) and (b) - See footnotes (a), (b), page C8 ..

SUMMARY OF DEVELOPMENT AT TASMANIAN PORTS

The following is a summary of the development works being carried out at the four Tasmanian ports at the end of 1972, those works approved but not commenced at that date, and other works that have been proposed.

Hobart:

(i) Current works in progress

Two Ro-Ro berths are currently under construction on Macquarie Point. These berths will accommodate the new vessels being built for the trans-Tasman and interstate trades, and are due to enter service late in 1974. The adjacent area together with the reclamation works necessary to accommodate these berths will provide a cargo marshalling area of nearly 11 acres. Two large cargo transit sheds are to be provided in the marshalling area adjacent to these berths. It is estimated that the costs of this development will be \$4m. Monies expended to the end of 1972 totalled \$860,000.

The dredging of four berths by the Electrolytic Zinc Company at its private wharf at Risdon to a depth of 36ft is estimated to cost \$175,000. By the end of 1972 \$140,000 had been expended on this task.

(ii) Works approved but not commenced

The proposed re-surfacing of a berth at Risdon owned by the Electrolytic Zinc Company is estimated to cost \$12,500.

(iii) Proposed development

The Macquarie Point Ro-Ro berths will be extended southward to join with the seaward end of the existing Macquarie Wharves. This extension will provide 800 ft of wharf space. With a minimum depth of 42ft at the wharf face it will be suitable for the large overseas quarter-ramp, cellular and conventional type vessels. A 500ft transit shed and 9 acres of marshalling area are incorporated in this stage. The estimated cost is \$2.5m.

Burnie:

(i) Current works in progress

Provision is being made for a shed, cool store and associated facilities at New Jones Pier South. The estimated cost of this project is \$250,000 and is expected to be completed early in 1973.

(ii) Works approved but not commenced

The construction of a bund dor retaining dredged material is expected to commence early in 1973 and to cost \$150,000. At the same time the demolition of Jones Pier will commence and this work, together with the dredging of the space occupied by the pier, will cost \$350,000.

(iii) Proposed development

If the demand arose, to cater for any further major expansion of traffic through the port created by the setting up of a large industry, plans exist to extend the island breakwater and to link it to the mainland, and to reclaim harbour foreshores to the south of the existing port. If these plans were introduced as a firm proposal for port development their likely cost at current price levels would be in excess of \$10m. At this point of time the Board does not have any intention of proceeding with the work.

Devonport:

(i) Current works in progress

The work of extending the southern Ro-Ro berth to a length of 700ft will be completed in March 1973. The total cost of this work will be \$88,000 and expenditure on this project to the end of 1972 was \$41,000.

During 1972, the Board purchased a going concern Cold Store at East Devonport with a capacity of 200,000 cu.ft.

The reclamation of approximately 4 acres of future marshalling area by dredge fill for a future berth is in progress and is expected to be completed by the end of March 1973. Dredging has also continued on widening the entrance channel from 240ft to

300ft and deepening the entrance and swinging basins to 25ft at low water. These works are estimated to cost \$160,000 and \$171,000 respectively.

(ii) Works approved but not commenced

Nil.

(iii) Proposed development

To improve navigable waters within the swinging basin to a minimum diameter of 1,000ft, it is proposed to remove rock and over-burden from Sayers Point to 28ft at low water. This project is estimated to cost \$850,000 undertaken in stages.

The second stage of channel widening at Police Point will increase channel width on this bend to 400ft and is estimated to cost \$485,000.

A Ro-Ro berth on the western side adjacent to existing rail marshalling operations is proposed for future development.

An ultimate plan prepared in 1964 for developing an outer harbour scheme of five marginal berths or 3,250 ft of berthage backed by 120 acres of reclaimed land and protected by two breakwater arms is envisaged for the mouth of the river. The estimated cost of this plan lies between \$10m and \$15m, depending on shipping requirements, etc. At present this development is not contemplated.

Launceston:

(i) Current works in progress

Two wood chip export berths at Long Reach were completed by the end of 1972 at a cost of \$1.8m. By the end of 1972, work of channel widening and deepening to 35ft 6 in at low water which involves the part removal of Garden Island had also been virtually completed. This work cost approximately \$4m. Work is currently continuing on the construction of a second Ro-Ro berth at Bell Bay and on the improvement and extension of associated marshalling areas. Of a total estimated cost of \$1.8m, some \$177,000 is estimated to have been spent by the end of 1972.

(ii) Works approved but not commenced

Nil.

(iii) Proposed development

A feasibility study has been undertaken for a graving dock capable of accommodating ships of between 60,000 and 100,000 tons dwt.

INCOME AND EXPENDITURE OF THE PRINCIPAL TASMANIAN PORTS

Details of the income and expenditure accounts of the four principal Tasmanian ports, together with records of surpluses or deficits, are set out in Tables 2 to 5 for the years 1967-68 to 1971-72.

TABLE 2 - MARINE BOARD OF HOBART: INCOME AND EXPENDITURE

	(\$'000)				
	1967-68	1968-69	1969-70	1970-71	1971-72
INCOME					
Wharfage	898	938	978	994	1,073
Tonnage rates	129	139	153	174	209
Rents and hiring charges (a)	268	303	302	348	379
Other operating income (b)	103	68	98	173	165
Non-operating revenue	25	40	54	44	10
TOTAL	1,424	1,488	1,584	1,734	1,836
EXPENDITURE					
Administration	158	162	179	239	183
Port operation	179	214	221	273	357
Maintenance (c)	271	199	344	356	422
Other operating expenditure (d)	101	62	86	147	148
Loan charges	359	305	330	361	398
Other non-operating expenditure (e)	334	256	157	148	127
TOTAL	1,402	1,196	1,317	1,524	1,635
NET SURPLUS					
TOTAL	22	292	267	209	201

(a) Berth charges, launch and tug charges and plant and machinery charges. (b) Pilotage, administrative charges and miscellaneous charges. (c) Item described as 'Repairs and renewals'. (d) Plant operation expenses, sundry recoverable expenditure, miscellaneous expenses and expenses under Section 75(e) of the Marine Act. (e) Depreciation, insurance and contributions to various reserve accounts.

NOTE: Figures may not add to totals due to rounding.

Source: Tasmanian Auditor-General's Reports.

TABLE 3 - MARINE BOARD OF BURNIE: INCOME AND EXPENDITURE

	(\$'000)				
	1967-68	1968-69	1969-70	1970-71	1971-72
INCOME					
Wharfage	716	739	875	898	955
Charges on ships	193	189	212	196	227
Rents	57	79	87	103	106
Other operating income (a)	39	49	52	56	76
Non-operating revenue (b)	114	93	50	71	91
TOTAL	1,120	1,148	1,275	1,323	1,455
EXPENDITURE					
Administration	106	117	144	199	229
Port operation	92	96	81	87	93
Maintenance	92	88	87	109	124
Other operating expenditure (c)	14	19	19	15	13
Loan charges	748	791	851	921	1,014
Other non-operating expenditure	41	17	19	21	44
TOTAL	1,094	1,128	1,201	1,353	1,517
NET SURPLUS (+) OR DEFICIT (-)					
TOTAL	(+)26	(+)20	(+)74	(-)30	(-)62

(a) General revenue including refunds and recoverables. (b) Interest on investments and mechanical equipment transfers. (c) Refunds.

NOTE: Figures may not add to totals due to rounding.

Source: Tasmanian Auditor-General's Reports.

TABLE 4 - MARINE BOARD OF DEVONPORT: INCOME AND EXPENDITURE

(£'000)

	1967-68	1968-69	1969-70	1970-71	1971-72
INCOME					
Harbour revenue	656	663	757	773	897
Charges on ships	107	123	101	127	243
Cold store income	40	156	103	71	69
Other operating income	191	87	166	148	163
TOTAL	994	1,029	1,127	1,119	1,372
EXPENDITURE					
Administration	81	84	93	113	139
Port operation	71	68	72	97	128
Maintenance	158	196	170	182	247
Finance expenses	507	537	628	677	760
Other non-operating expenditure	32	33	43	36	44
TOTAL	849	918	1,007	1,105	1,318
NET SURPLUS					
TOTAL	145	111	120	14	54

NOTE: Figures may not add to totals due to rounding.

Source: Tasmanian Auditor-General's Reports.

TABLE 5 - PORT OF LAUNCESTON AUTHORITY: INCOME AND EXPENDITURE
(\$'000)

	1967-68	1968-69	1969-70	1970-71	1971-72
INCOME					
Wharfage and harbour rates	681	712	814	905	873
Charges on ships (a)	80	106	116	147	154
Rents (b)	351	361	340	424	494
Other Income (c)	465	677	679	630	752
TOTAL	1,576	1,857	1,949	2,106	2,273
EXPENDITURE					
Administration	183	213	215	252	303
Port operation	211	238	250	262	289
Maintenance (d)	352	321	341	359	393
Other operating expenditure (e)	377	581	552	482	583
Loan charges	280	343	447	516	626
Other non-operating expenditure (f)	94	100	99	115	114
TOTAL	1,497	1,795	1,903	1,986	2,308
NET SURPLUS (+) OR DEFICIT (-)					
TOTAL	(+)80	(+)61	(+)45	(+)120	(-)35

(a) Tonnage rates and pilotage. (b) Charges for services of plant and rental of property. (c) Other service charges, income for sundry services rendered and miscellaneous income. (d) Operation and maintenance of plant and equipment, and repair and maintenance of fixed assets. (e) Expenditure under Section 75(e) of Marine Act, general services expenditure, miscellaneous expenditure, and recoverable expenditure. (f) Superannuation contributions and depreciation.

NOTE: Figures may not add to totals due to rounding.

Source: Tasmanian Auditor-General's Reports.

LOAN BORROWINGS AND LOAN DEBTS OF THE PRINCIPAL TASMANIAN PORTS

Table 6 shows for the four principal Tasmanian ports the loan borrowings made during the four-year period from 1 July 1968 to 30 June 1972 together with details of the increase in loan indebtedness recorded during the same period.

TABLE 6 - PRINCIPAL TASMANIAN PORTS: LOAN BORROWINGS AND LOAN DEBTS
(\$'000)

	Hobart	Burnie	Devon- port	Laun- ceston	Total
Loan borrowings during the four years ended 30 June 1972	4,010	3,251	2,800	4,766	14,827
Loan debt outstanding at-					
30 June 1968	2,747	10,443	5,258	3,341	21,789
30 June 1972	5,908	12,950	7,118	7,441	33,417
Increase in loan debt during the four years ended 30 June 1972	3,161	2,507	1,860	4,100	11,628

Source: Tasmanian Auditor-General's Reports.

OPERATIONS OF TASMANIAN PORTS

The control of ports in Tasmania has always been in the hands of local authorities, which now number seven.⁽¹⁾ The functions of these Marine Boards are defined in the Marine Act 1921. They are semi-autonomous bodies, governmental control being limited to the approval of borrowing programmes. All authorities are administered by Wardens appointed by municipal electors with the exception of Hobart and Circular Head Marine Boards.⁽²⁾

Each Tasmanian port authority not only provides the usual port facilities but also undertakes a number of services extending beyond the port areas, namely -

- . the provision of harbour lights and navigation aids not only in the vicinity of the port but also along a defined stretch of coastline
- . responsibility for the safety of navigation along the coastline under its jurisdiction and out to the three-mile limit
- . supervision and control of locally-based small boats and pleasure craft
- . joint participation in the State Navigation and Survey Authority which is concerned with the safety of life and property at sea.

(1) Marine Boards of Burnie, Circular Head, Devonport, Flinders Island, Hobart, and King Island; and the Port of Launceston Authority. The previously constituted Smithton Harbour Trust is currently in process of being amalgamated with the Marine Board of Circular Head.

(2) Hobart has a special electorate of shipowners, exporters and importers. With the amalgamation of the authorities for Circular Head and Smithton the nine wardens will include four government nominees.

BASIS ON WHICH WHARFAGE IS LEVIED AT TASMANIAN PORTS

Wharfage charges are levied on all goods passing over the wharves controlled by the various port authorities. These charges do not cover handling charges nor do they cover storage in cargo sheds although goods may be left for a certain length of time on the wharves. The rates are charged either on tons weight or tons measurement where a ton measure represents a capacity of 40 cubic feet. Rates are charged on whichever of tons weight or tons measure will yield the greatest amount of revenue, and are calculated on the weight or measure taken to the next unit, i.e. fractions of a unit count as one unit.

The various port authorities have schedules of wharfage rates with different amounts being charged on various items of cargo ranging from specialised bulk cargo items, tourist vehicles, commercial and trade vehicles, animals and general cargo. The three northern ports of Burnie, Devonport and Launceston all charge an export rate of 84 cents per ton on general cargo items not elsewhere included in their wharfage schedule with the import rate being \$1.68. The export rate at Hobart is 63 cents with the import rate being \$1.26 per ton of general cargo. Tourist vehicles, caravans and trailers are charged \$2.50 import wharfage at all Tasmanian ports with the same rate applying to exports at all ports except Hobart where it is \$2.00. Animals are a special category with rates varying according to whether the animals are crated or on the hoof.

Wharfage charges at Tasmanian ports are collected by the shipping companies as part of the shipping freight rates as a matter of expediency. In return for performing this service the shipping company receives a commission from the port authorities.

Certain exemptions apply to the payment of wharfage. Vehicles and cargo carrying accessories used to move cargo on and off container and Ro-Ro vessels are not subject to any wharfage. Even when filled with cargo only the volume of the cargo, or its weight, incurs wharfage.

The following items are partially exempt from the payment of wharfage:

- . where goods are carried in cargo containers, wharfage is calculated according to the internal measurement of the container less 8 per cent where the container does not exceed 120 cu.ft and less 5 per cent where the container exceeds 120 cu.ft. This applies, however, only if the wharfage calculated on the weight of the cargo is less than wharfage calculated on the volume measure

- . where goods are carried in cargo carrying units and unless actual weights and cubic measurements are manifested, the gross cubic measurement shall be taken as the basis on which wharfage is calculated. There are various allowances for trailers, ferry freighters, rail roaders, trays, furniture vans and refrigerated units and once again this is subject to wharfage calculated on a weight basis being less than wharfage calculated on this measure of volume.

FREIGHT RATES ON SELECTED INTERSTATE ROUTES

This Annex sets out representative door-to-door book rates quoted by a representative freight forwarder over selected interstate routes as from 18 December 1972. Table 1 shows rates per ton for two sizes of consignments using sea transport for the line haul. Tables 2 and 3 show door-to-door rates using rail and road respectively for the line haul; the rates shown are applicable to freight of all densities.

TABLE 1 - CURRENT DOOR-TO-DOOR BOOK RATES FOR DENSE CARGO (a)
ON SELECTED ROUTES USING SEA FOR THE LINE HAUL
(\$ per ton)

From-	To -					
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
2 - TON CONSIGNMENT						
Sydney	-	27.68	30.76	ns	77.34	41.64
Melbourne	27.04	-	46.92	ns	64.53	37.92
Brisbane	30.05	44.58	-	ns	100.16	ns
Adelaide	ns	ns	ns	-	ns	30.98
Perth	13.97	12.29	14.80	ns	-	ns
Hobart	37.88	34.58	68.64	30.98	ns	-
7 - TON CONSIGNMENT						
Sydney	-	22.84	25.05	ns	58.93	37.96
Melbourne	22.31	-	31.47	ns	51.26	32.09
Brisbane	24.47	27.34	-	ns	62.87	59.43
Adelaide	ns	ns	ns	-	ns	29.56
Perth	23.14	20.27	24.19	ns	-	ns
Hobart	31.63	29.26	56.68	29.56	ns	-

(a) Cargo occupying less than 40 cubic feet per ton.

NOTE: 'ns' = not shown separately in rate schedules.

Source: Representative freight forwarder's rates effective from 18 December 1972. Small variations may occur between forwarders.

TABLE 2 - CURRENT DOOR-TO-DOOR BOOK RATES FOR A TWO-TON
CONSIGNMENT ON SELECTED ROUTES USING RAIL FOR
THE LINE HAUL
(\$ per ton)

From -	To -					
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Canberra
Sydney	-	36.62	44.21	52.25	123.57	37.23
Melbourne	36.62	-	66.60	32.08	101.30	38.23
Brisbane	33.11	56.97	-	75.20	152.04	ns
Adelaide	46.82	31.11	74.96	-	75.53	ns
Perth	91.30	75.46	120.10	47.10	-	91.30
Canberra	38.72	37.84	83.89	70.29	158.94	-

NOTE: 'ns' = not shown separately in rate schedules.

Source: Representative freight forwarders rates effective from 18 December 1972. Small variations may occur between forwarders.

TABLE 3 - CURRENT DOOR-TO-DOOR BOOK RATES FOR A TWO-TON
CONSIGNMENT ON SELECTED ROUTES USING ROAD FOR
THE LINE HAUL
(\$ per ton)

From -	To					
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Canberra
Sydney	-	36.99	40.18	52.50	164.54	38.72
Melbourne	36.99	-	67.46	27.46	121.11	37.84
Brisbane	34.23	56.98	-	74.34	167.91	ns
Adelaide	46.82	31.74	76.21	-	102.68	ns
Perth	91.30	75.46	120.10	47.10	-	91.30
Canberra	38.72	37.84	83.89	70.29	158.94	-

NOTE: 'ns' = not shown separately in rate schedules.

Source: Representative freight forwarders rates effective from 18 December 1972. Small variations may occur between forwarders.

STUDY OF DOOR TO DOOR COSTS
FOR SELECTED ROUTES AND MODES

This Annex deals with the structure of freight forwarding costs for consignments of cargo in the Melbourne - Devonport trade and the Sydney-Hobart trade. These costs are then compared with those estimated to be incurred if there were a road and rail link.

MELBOURNE - DEVONPORT ROUTE

Sea Line Haul

Table 1 outlines the BTE estimate of the unit cost breakdown for the door to door movement of a consignment of density 40 cu ft per ton in the Melbourne-Devonport trade. The cost structure for a consignment of lightweight goods may vary considerably from this and a later section outlines some of these differences.

The data used in this study are based on generalised cost structures for both national and local freight forwarders in the Tasmania trade. There are many problems with such an exercise. Individual contracts and particular consignments may have a cost structure differing widely from that examined below. For instance, pick up costs in Melbourne, taken to be about \$1.20 per ton on the average, will vary with the distance of the particular shipper from the wharf or from the freight forwarder's depot. Other influences are the loading facilities available and whether or not the particular consignment comprises a full load. Similarly, distribution costs will vary, depending upon whether a particular consignment is for delivery to one customer or to a number of fairly widely dispersed customers.

The total cost shown in Table 1 differs from the published schedule rate for a 40cu ft ton of cargo which, from December 1972, was about \$20.95 southbound and \$19.65 northbound. The major reasons for this are: first, the profit margin has been excluded and, second, a scheduled rate is the maximum which is generally only payable on a one-off or

TABLE 1 - FREIGHT FORWARDERS' DOOR-TO-DOOR COST ACROSS BASS STRAIT
 USING SEA LINKS, SEPTEMBER 1972
 (Cargo density: 40 cubic feet per ton)

Item	Cost per ton \$	Proportion of total cost %
MELBOURNE TO DEVONPORT		
Pick-up costs	1.20	7.0
Depot costs (Origin)	2.50	14.0
Delivery to ferry terminal	0.90	5.0
Sea freight costs (a)	8.50	48.0
Pick-up from ferry terminal	0.70	4.0
Depot costs (Destination)	1.80	10.0
Delivery	0.90	5.0
Equipment costs	1.20	7.0
TOTAL	17.70	100.0
DEVONPORT TO MELBOURNE		
Pick-up costs	1.00	6.5
Depot costs (Origin)	1.50	9.5
Delivery to ferry terminal	0.70	4.5
Sea freight costs (a)	7.80	49.5
Pick-up from ferry terminal	0.90	5.5
Depot costs (Destination)	1.60	10.0
Delivery	1.10	7.0
Equipment costs	1.20	7.5
TOTAL	15.80	100.0

(a) Based on the book rate with loading for loss of stowage. Certain major northbound cargoes move at special commodity rates. The discount offered is generally from the dense cargo rate (which is higher than the general cargo rate on a ton weight basis) and tends to bring the net freight rate for such commodities close to the general cargo rate used in this example.

Source: BTE estimates

unattractive consignment. The actual rates paid, particularly for large contracts are in most cases considerably lower than the published schedule rates.

The following points are made about the data in Table 1 -

- . The sea freight cost is higher on the southbound journey than on the northbound, due to the higher wharfage into Tasmania than into Melbourne. (See Chapter 7).
- . Wharfage is a charge peculiar to shipping and has no directly comparable counterpart in other modes. Wharfage is a charge on the shipper of the goods and is levied to help meet the capital and operating costs incurred in providing the wharf facilities.
- . The sea freight rate charged by the freight forwarder to the customer includes a loading of 15 per cent for loss of stowage. The freight forwarder pays sea freight based on the external dimensions of the container. The volume of goods within the container is on the average about 15 per cent less than the volume (including container) on which sea freight is paid.
- . Handling costs account for a considerable proportion of the total door to door costs. When shipping terminal costs (averaging about \$1.30 per cargo ton in the Tasmania trade) are considered, the total handling costs in the complete door to door operations in the Tasmania-mainland trade make up approximately 25 to 35 per cent of the total door to door cost. This estimate applies not only to this route study but to the majority of the Tasmania interstate trade. Handling operations for each consignment include some or all of the following:
 - . loading at shipper's factory
 - . unloading at depot prior to consolidation
 - . consolidation
 - . loading and unloading of ship

- . unloading at terminal
- . loading vehicle at destination terminal
- . unloading vehicle at depot for deconsolidation
- . deconsolidation
- . reloading vehicle at depot for delivery to consignee
- . unloading vehicle at consignee's warehouse.

The large number of handlings is a feature of sea transport. A door to door movement by road may entail as few as two handlings, loading at the consignor's depot and unloading at the consignee's store, if the cargo is already consolidated.⁽¹⁾ If the cargo requires consolidation, more handling would be involved, but the loading of the road vehicle is generally far less expensive than terminal costs associated with loading a ship. Similarly, a door to door movement involving rail as the line haul mode may involve the same number of handlings as movement by sea.⁽²⁾

However, the loading and unloading costs for rail are approximately 70 cents to \$1.10 per ton⁽³⁾ compared to the \$1.30 per ton for sea terminal costs. Hence, handling costs are far more significant in the case of sea transport than on mainland routes using road or rail.

In the Melbourne-north Tasmania trade, origin depot costs are significantly higher in Melbourne than in Tasmania. This is due to the higher proportion of southbound cargo requiring consolidation. Similarly, destination depot costs are shown as being higher in Tasmania, due to the greater degree of deconsolidation required for the southbound cargo. However, the costs per unit for consolidation and deconsolidation were found generally to be higher on the mainland than in Tasmanian depots. (See Chapter 8).

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- (1) This type of movement is common in mainland trade.
- (2) The trend for freight forwarders to locate terminals at a rail siding reduces the number of handlings involved in using the rail mode.
- (3) The amount commonly charged by State Railways to load a rail wagon is 50-60 cents per ton with a similar amount for unloading. The costs are lower if the forwarder uses his own labour to load the wagon.

- . The southbound door to door rate is higher, due mainly to the higher line haul costs and the nature of the southbound cargo which in most cases requires more consolidation and deconsolidation.

The door to door movement of a consignment of light weight cargo (e.g. 140 cubic feet per ton) will have a cost structure which varies greatly from that for goods of density 40 cu.ft per ton. Because shipping is charged on a volume basis, the sea freight cost per ton weight can increase by up to a factor of 3.5. However, in practice, the actual increase may be smaller than this, depending upon the skill of the freight forwarder in exploiting opportunities to blend cargo to obtain the most efficient mix of volume and weight. Most of the other costs are unlikely to rise to the same extent as sea freight. Pick-up and delivery costs could easily remain around one dollar per ton weight if the consignment fully utilises the pick-up vehicles. Depot costs may rise, but less than proportionally with the increase in volume of cargo. Equipment costs, as with sea freight costs, will depend on the opportunities for efficient blending of cargo, but will generally be higher for light weight consignments.

In summary, sea freight costs will increase in proportion to volume but this may be offset to some extent by efficient blending of low and high density cargoes. The other items in the door to door cost structure would not increase in proportion to volume.

Comparison of Modes

The most significant difference between costs of freight forwarding on the mainland and in Tasmania arise from differences in the modes of transport available and their line haul and associated handling costs.

The following comparison of freight forwarding line haul costs for varying densities of cargo for each mode over a distance of 266 miles⁽¹⁾ has been undertaken to show the differences that arise. It cannot be interpreted as a general measure of the so called transport disability since the cases shown here are selected examples and cargo movements may vary widely from these examples. In addition, the data obtained for road and rail has been derived from mainland interstate trade. These data would imply a volume of trade and a level of development of the transport network such as that found in the Melbourne-Sydney corridor. Consequently, a comparison with sea may be misleading since such economies of scale and development would not be available in the Tasmania trade. (See Chapter 3).

The line haul and associated handling costs for the various modes over an equivalent distance to that from Melbourne to Devonport are shown in Table 2.

(1) Statute mileage by sea from Melbourne to Devonport.

TABLE 2 - LINE HAUL COSTS BETWEEN MELBOURNE AND DEVONPORT: COMPARISON OF SEA WITH HYPOTHETICAL RAIL AND ROAD LINKS, SEPTEMBER 1972 (\$)

	Sea		Rail (a)(b)	Road
	North-bound	South-bound		
ONE TON OF 40 CUBIC FEET				
Line haul	5.00	5.20	Line haul	5.50 (c) 7.50
Wharfage(d)	1.51	2.00	Loading/unloading (e)	0.70 0.70
Terminal costs (f)	1.30	1.30		
TOTAL	7.81	8.50	6.20	8.20
ONE TON OF 140 CUBIC FEET				
Line haul	16.00	17.25	Line haul	8.00 (c) 8.00
Wharfage(d)	5.25	7.00	Loading/unloading (e)	0.70 0.70
Terminal costs(f)	4.55	4.55		
TOTAL	25.80	28.80	8.70	8.70

(a) Based on mainland data for the movement of similar goods over a distance of 266 miles. (b) Estimates based on rates for large regular consignments on mainland railways. Book rates will be considerably higher e.g. \$12.30 for a 40 cu ft ton, \$16.70 for a 140 cu ft ton including a charge of \$1.10 for loading/unloading. (c) This figure may understate the full costs associated with road transport. (d) Wharfage is considered in this study as part of line haul costs because it is a charge made for provision of wharf facilities essential for line haul operations. It is calculated on the basis of \$2.00 for 40 cu ft cargo ton southbound and \$1.51 per 40 cu ft ton northbound. (e) Loading and unloading is carried out by the freight forwarder. (f) Estimated to be \$1.30 per 40 cu ft ton (See Chapter 6).

Source: BTE estimates

The significant points revealed by Table 2 are -

- . The absolute difference in line haul and associated handling costs per ton weight between the modes is largest for the lightweight cargo.
- . For lightweight commodities, sea line haul costs are far more expensive than with any other mode. This major difference in cost per ton arises simply because Ro-Ro sea freight rates are charged on a volume basis (except for dense cargo) whereas for rail and road, where volume is generally not such an important factor, the rates are on a weight basis. On sea transport, cargo with a density of 140 cubic feet per ton is charged at a rate 3.5 times greater than for cargo of density 40 cubic feet per ton. On road or rail the charge may only be of the order of five to twenty per cent above the rate for the denser cargo.
- . Wharfage is a most significant cause of the difference in line haul costs between sea and other modes.

The total door to door rate is made up of the line haul costs and the freight forwarders' charges and margin. These freight forwarders' charges generally will not vary significantly with the mode used for line haul. The major differences between the charges associated with sea as the line haul mode and those associated with road or rail arise from the extra handlings associated with sea transport. The additional cost of transfer movements between the ferry terminal and the forwarder's terminal and the additional equipment costs associated with sea transport are discussed in Chapter 8. With road transport, there is no cost equivalent to that of delivery from the freight forwarder's terminal to the ship. With rail transport, it is now common for the freight forwarder to have a depot located at a rail siding, in which case the additional movement is also avoided.⁽¹⁾ In total, these factors may result in the freight forwarder's charges (excluding line haul and associated handling costs) being about \$2 to \$3 higher when sea transport is used as the line haul mode than when road or rail is used to move similar commodities over comparable routes.

(1) Freight forwarders' terminals handling sea freight are generally not located at the wharves, due to scarcity of appropriate sites and possible complications in industrial relations.

Table 3 shows estimates of approximate door to door costs that freight forwarders would incur using hypothetical road or rail links for the Melbourne-Devonport distance.

TABLE 3 - FREIGHT FORWARDERS' DOOR-TO-DOOR COSTS BETWEEN MELBOURNE AND DEVONPORT USING HYPOTHETICAL RAIL AND ROAD LINKS, SEPTEMBER 1972
(one ton of 40 cubic feet)

	Cost per ton \$	Proportion of total cost %
RAIL		
Pick-up costs	1.20	9.5
All depot costs (Origin)	2.50	20.0
Line haul and assoc. cost	6.20	49.0
All depot costs (Destination)	1.80	14.5
Delivery	0.90	7.0
TOTAL	12.60	100.0
ROAD		
Pick-up cost	1.20	8.5
All depot costs (Origin)	2.50	17.0
Line haul and assoc. costs	8.20	56.0
All depot costs (Destination)	1.80	12.5
Delivery	0.90	6.0
TOTAL	14.60	100.0

Source: BTE estimates

It has been assumed that depot costs and pick up and delivery costs are the same for similar consignments regardless of the line haul mode. There may be slight variations for specific commodities but these have been ignored.

Under these conditions, the door to door costs over the Melbourne-Devonport distance using the three modes for line haul would be

	<u>\$ per ton</u>
. sea - southbound	17.70
. - northbound	15.80 ⁽¹⁾
. road	14.60
. rail	12.60

These figures suggest that, under the circumstances specified previously, the door to door costs over this distance would be from \$1 to \$3 greater by sea northbound than by road or rail. The difference would be from about \$3 to \$5, based on the southbound sea freight rate.

These figures refer only to the movement of a cargo of density 40 cu ft per ton. The difference in the door to door cost for cargo of lower density can be shown to be much higher. As outlined in Table 2, the line haul cost for a cargo of density 140 cu ft per ton is much greater by sea than by road or rail. However, efficient blending of cargoes of varying densities could be used to modify to some extent the increase in line haul costs of sea transport.

(1) The northbound door to door cost would be lower for certain commodities covered by special contracts.

Density of cargo generally only slightly effects the line haul costs for road and rail. Other costs of freight forwarders would increase slightly due to the lower density but the change would be similar for all modes. The costs associated with the additional handlings peculiar to sea transport would probably be in the range \$2.50 to \$3.50 per 140 cubic foot ton.⁽¹⁾ This would mean that the difference in door to door costs between the modes for a 140 cubic foot consignment would be in the range \$20 to \$25 per ton.

A medium density cargo of say 60 cubic feet per ton would cost about \$6 to \$9 per ton more for the door to door movement using sea for line haul. The line haul and associated handling costs which are about \$12.80 southbound and \$11.50 northbound by sea compared to about \$7.40 by rail and about \$8.20 by road are the major sources of the difference in door to door costs.

SYDNEY - HOBART ROUTE

The line haul distance in the Sydney-Hobart route is 630 nautical miles, equivalent to 725 statute miles. Over this distance, sea transport is a relatively more economic proposition than over the short haul, Melbourne to Devonport.

Table 4 sets out the details of line haul and associated handling costs for sea and for road and rail over a comparable distance for consignments of density 40 cu ft per ton and 140cu ft per ton. For the denser cargo, sea transport is cheaper than road but more expensive than rail over the same distance. However, with lower density cargo this cost advantage over road vanishes and for the 140 cu ft per ton cargo the cost by sea is about \$34 higher than by rail and \$29 higher than by road. Even with a cargo of density 60 cu ft per ton, sea is slightly more expensive than road and about \$6 more than rail.

(1) Pick up and delivery to and from the ferry terminal, associated handling costs and additional equipment costs.

TABLE 4 - LINE HAUL COSTS BETWEEN HOBART AND SYDNEY: COMPARISON OF SEA WITH HYPOTHETICAL RAIL AND ROAD LINKS, SEPTEMBER 1972

(\$)

	Sea		Rail	Road
ONE TON OF 40 CUBIC FEET				
Line haul	11.98	Line haul	13.00	19.70
Wharfage	1.72	Loading/ Unloading	0.70	0.70
Terminal charges	1.30			
Total	15.00		13.70	20.40
ONE TON OF 140 CUBIC FEET				
Line haul	38.90	Line haul	15.60	21.00
Wharfage	7.00	Loading/ unloading	0.70	0.70
Terminal charges	4.50			
Total	50.40		16.30	21.70

Source: BTE estimates

Table 5 outlines the comparative door to door costs for the movement of a ton of 40 cu ft from Sydney to Hobart by sea and by hypothetical road and rail links. Due to the lower line haul cost, the sea movement is about \$2.50 cheaper than road but about \$4.00 dearer than rail.

A similar study for a cargo of density 60 cu ft per ton showed that door to door costs where sea is the line haul mode are from \$4 to \$10 higher than by road or rail. For a cargo of 140cu ft per ton sea freight would be between \$30 and \$40 dearer.

TABLE 5 - FREIGHT FORWARDERS' DOOR TO DOOR COSTS SYDNEY-HOBART
USING SEA LINE HAUL AND HYPOTHETICAL RAIL AND
ROAD LINK, SEPTEMBER 1972
(one ton of 40 cubic feet)

Item	Cost per ton		
	Sea \$	Rail \$	Road \$
Pick up cost	1.50	1.50	1.50
Depot costs (Origin)	2.80	2.80	2.80
Delivery to ferry terminal	0.90	-	-
Line haul and assoc. costs	15.00	13.70	20.40
Pick up from ferry terminal	0.80	-	-
Depot costs (Destination)	1.80	1.80	1.80
Delivery	.90	0.90	0.90
Equipment costs	1.20	-	-
Total	24.90	20.70	27.40

Source: BTE estimates

THE EFFECT OF SOUTHBOUND FREIGHT RATES
ON PRICES IN TASMANIA

The great majority of evidence at the Senate Committee Inquiry was concentrated on the effect of freight rates on the export of goods from Tasmania to the mainland. The claim made by many of the shippers was that, because freight rates from Tasmania to the mainland were relatively higher than the costs of interstate transport on the mainland, their products were at a disadvantage compared to those of mainland producers. These claims have been discussed elsewhere in this report.

However, very little attention has been paid to the effect of the southbound freight rates on the prices of goods in Tasmania. It could be expected that if freight rates to and from Tasmania were relatively higher than those on the mainland, then because of the resulting relatively higher distribution costs to Tasmania the prices of imported goods would be higher in Tasmania than in other mainland centres at similar distances from the point of manufacture.

Probably the major reason that the effect of southbound freight rates on the prices of commodities imported into Tasmania has been largely ignored is the widespread belief that prices of many commodities are identical with prices at major mainland centres. For example ANL, in their evidence to the Senate Committee of Inquiry suggested that Tasmanians were not 'disadvantaged in their southbound cargoes' due principally to the presence of price equalisation schemes⁽¹⁾.

(1) Senate Standing Committee on Primary and Secondary Industry and Trade (Reference: Tasmanian Shipping Freights) 1970-71, p. 634 (27 May 1971).

This Annex briefly examines the pricing policies affecting various commodities in Tasmania and the mainland in order to determine the extent and the effect of the various pricing policies.

THE DISTRIBUTION OF COMMODITIES

The process by which commodities are moved from place of manufacture to point of consumption (in the case of finished consumer goods) involves various stages of handling, storage and transportation. The distribution costs that must eventually be recovered in the final price of any commodity will include:

- . costs of storage at all stages of distribution
- . costs of handling at all stages of distribution
- . line-haul costs of transportation by various modes
- . other costs including insurance, wharfage etc.

There are two major alternatives pricing policies that can operate to recover these distribution costs:

- . The price to the consumer at each selling centre includes the total costs of distributing the particular good to that centre.
- . Prices are equalised at all selling centres regardless of the costs of distribution and local demand conditions. Prices at each centre include an average cost of distribution to all areas. This type of pricing policy involves an indirect subsidisation of some areas to which distribution costs are high, by areas to which distribution costs are low. This type of policy is commonly used to give equalised prices in all mainland capital cities.

Other pricing policies will generally lie somewhere between these two extremes.

THE INCIDENCE OF PRICE EQUALISATION SCHEMES IN TASMANIA

Information obtained by the BTE indicates that for goods imported from the mainland, elements of three different pricing policies are evident. These are:

- . Hobart price (cif or fis) the same as at other capital cities. In this case prices at places away from the capital cities usually reflect the additional costs of distribution from the nearest capital city both in Tasmania and on the mainland.
- . The price at any centre reflects the costs of distributing goods to that centre. The Hobart price would include the costs of distributing from the place of manufacture to Hobart. Also where goods are manufactured in Melbourne, the prices at northern ports of Tasmania would be lower than the Hobart price.
- . Uniform prices prevail in Hobart and the other major centres in Tasmania i.e. Burnie, Devonport and Launceston. In this way the major Tasmanian centres are treated as one selling area. Where this policy applies goods may be either price equalised with capital cities, or the Tasmanian price reflects an average cost of distribution to Tasmanian centres.

Discussion with various firms and examination of other sources of information indicate that the above mentioned pricing policies apply to various commodities as discussed below.

Price Equalisation between Hobart and other capital cities generally applies to the following products:

- major national brand food and grocery items

- steel products
- some brands of motor vehicles and spare parts
(dealer prices)
- some footwear and clothing items.

Prices Reflecting Distribution Costs from the mainland to Tasmania apply to the following products:

- minor brand food and grocery items distributed by manufacturers
- food and grocery items distributed via mainland wholesalers
- building materials
- furniture
- electrical goods with the exception of smaller items such as radios and cassette players where the freight cost is fairly small.

In addition to the products coming under the above two classifications of pricing policies, the following products are generally sold at uniform prices at the major Tasmanian centres.

- most food and grocery items
- motor vehicles
- electrical goods.

The BTE investigations of the pricing policies of the major manufacturers of the most important consumer goods indicates that price equalisation schemes of one sort or another are very common and this would suggest that in fact Tasmanian consumers are not disadvantaged relative to consumers in other States by freight rates on imports.

Probably the only comprehensive method of measuring the effects of price equalisation policies would be a comparison of prices of a wide range of goods at a number of Tasmanian centres with a similar survey in other States. Attempts were made to assess price variations but the time and resources required for a conclusive survey were not available.

EXPERIMENTAL INDEX NUMBERS

The only data available on comparative prices in the various States is the Experimental Food Price Index computed by the Commonwealth Statistician.

The experimental index numbers shown in Table 1 compare the price of food and groceries in various localities at each point of time. The most recent figures show Hobart with an index of 102 compares favourably with Brisbane (index 103) and Sydney (index 101) although it is about 3 per cent higher than Melbourne (index 99). In addition the Devonport and Launceston indexes of 102 and 100 compare very favourably with non capital city centres in other States.

**TABLE 1 - EXPERIMENTAL INDEX NUMBERS OF RELATIVE RETAIL PRICES
OF FOOD AND GROCERIES**

(Base : weighted average of six State capital
cities at each point of time = 100) (a)

City or Town	Index numbers at 15 March (a)				
	1967	1968	1969	1970	1971
Melbourne	100	101	102	99	99
Ballarat	104	104	105	102	100
Geelong	100	100	100	98	96
Sale	106	107	107	102	101
Shepparton	103	105	105	102	99
Sydney	100	99	99	101	101
Coffs Harbour	104	102	103	103	106
Goulburn	102	102	101	101	102
Parkes	106	104	106	103	105
Wollongong	100	101	99	99	101
Brisbane	100	98	98	100	103
Longreach	113	110	113	114	114
Rockhampton	101	100	101	102	104
Townsville	106	103	103	104	105
Hobart	103	103	102	101	102
Devonport	101	103	103	103	102
Launceston	103	102	101	99	100
Queenstown	112	111	110	110	112
Scottsdale	101	101	101	100	100

(a) These index numbers compare retail prices of food and groceries in the various localities at each point of time. They do not show movement over time in each locality.

FEASIBILITY OF CARRYING PASSENGERS ACROSS BASS STRAIT BY AIR

For passengers crossing Bass Strait air transport offers much shorter journey times than travel by sea⁽¹⁾ as well as providing a much greater frequency of services along direct connections between Melbourne and all major population centres. The use that is made of air travel results from the passengers' assessments of the advantages of air travel over sea including, particularly, any additional costs that are involved.

Air fares between Melbourne and Devonport are not more expensive than some sea fares. In fact, the passage from Melbourne to Devonport in a single berth cabin on the 'Empress of Australia' is 40 cents more than the first class air fare between those centres (Table 1). Nevertheless, most of the accommodation on the 'Empress of Australia' is provided for lounge passengers in reclining chairs (43 per cent of total) and the current fare for these is \$13. This is \$4 less than the current air economy fare of \$17. Air fares are set at a level assessed to cover airline costs while it is understood that sea fares are linked to prevailing air fares.

TABLE 1 - SINGLE ADULT PASSENGER FARES, MELBOURNE - DEVONPORT

Sea (Number of berths on 'Empress of Australia' shown in brackets)	Fare \$	Air
Lounge passengers in reclining chairs (190)	13.00	
Passenger in -		
Four-berth cabin (60)	15.50	
	17.00	Economy air fare
Two-berth cabin (162)	19.50	
	19.90	First class air fare
Single-berth cabin (16)	21.00	
Single-berth cabin with private facilities (4)	26.50	
Two-bed cabin-de-luxe (8)	29.00	

(1) The air travel times of 1hr 15min by Friendship from Melbourne to Devonport and of 55min by DC9 jet from Melbourne to Launceston compare with the 14hr sea passage from Melbourne to Devonport.

From a management viewpoint air transport has an inherent advantage over sea transport in being able to cope with seasonal fluctuations by providing additional flights at short notice. The normal high utilisation of passenger/cargo Ro-Ro ships across Bass Strait, with 150 scheduled return crossings per annum, makes it impossible for additional frequencies to be provided to handle extra loadings. There are no suitable 'stand-by' ships which can be put into service to cope with seasonal loadings.

Table 2 shows the number of passengers travelling to and from Tasmania by air and sea in each month of 1971-72. These figures reveal that in the months June to August there is a net outflow of persons from Tasmania to the mainland but that in the other months this flow is reversed. In 1971-72, the greatest net monthly inflow was recorded in December (14,500). Besides the main movements recorded in the summer, figures in Table 2 also show minor travel peaks at Easter and during the September school holidays.

Airline services to and from Tasmania were operated in 1970-71 with a passenger load factor of 62 per cent. While this indicates that some additional passengers could be carried without having to provide additional capacity, present excess capacity would occur mainly at off-peak times and the numbers of additional passengers that could be carried on existing services would be minimal. Any significant increase in numbers of passengers carried by air would require extra services.

For the reasons outlined in Annex B, the interstate airlines operating to Tasmania, Ansett Airlines of Australia and Trans-Australia Airlines, would provide additional services with the most economical aircraft type available. In the case of Tasmania this would be the McDonnell-Douglas DC9.

TABLE 2 - TASMANIAN INTERSTATE PASSENGER MOVEMENTS, 1971-72

('000)

Month	To Tasmania			From Tasmania		
	By air (a)	By sea	Total	By air (a)	By sea	Total
July	14.9	2.2	17.2	15.6	2.6	18.2
August	18.5	5.0	23.6	18.9	4.7	23.5
September	27.0	6.0	33.0	25.2	5.2	30.4
October	19.2	5.8	25.0	17.3	5.4	22.7
November	24.2	6.0	30.2	20.0	5.1	25.1
December	29.1	6.6	35.7	23.9	6.4	30.3
January	31.6	7.3	38.9	39.6	7.7	47.3
February	19.6	7.2	26.9	20.1	6.5	26.5
March	26.8	7.0	33.8	25.3	7.5	32.7
April	19.3	4.8	24.1	24.4	5.2	29.7
May	25.2	4.3	29.5	26.3	4.8	31.1
June	17.2	2.6	19.7	18.2	3.0	21.2
1971-72	272.7	64.8	337.5	274.7	64.1	338.8

(a) These totals exceed Tasmanian interstate passenger movements because of the inclusion of movements between Tasmanian airports. This overstatement could be of the order of 30,000 movements for the year 1971-72

NOTE: Figures may not add to totals due to rounding.

Source: Department of Civil Aviation
Australian National Line

It is understood that at the present time there are no surplus Fokker Friendship aircraft available to provide additional services to Tasmania even if it were decided to use that aircraft type⁽¹⁾.

An implication of having to carry on DC9 aircraft passengers who would previously have travelled by sea is that these passengers instead of arriving at Devonport (the principal sea passenger terminal) would now arrive at Launceston. This is necessary because the DC9 is not able to land at Devonport or Wynyard because the airports at these places have not been sufficiently developed to handle them. Neither Ansett Airlines nor Trans-Australia Airlines is considering at present the introduction of any smaller jet.

(1) Friendships are the largest airliners now capable of operating into Devonport and Wynyard. (See Annex B)

The main effect of carrying present sea passengers by air is that those tourists bringing their own vehicles would be inconvenienced by having to travel some distance from the air terminals to link up with their vehicles, particularly in Tasmania. Launceston airport is some 40 miles from Bell Bay and over 60 miles from Devonport. There seems no reason to doubt that adequate ground transport services to link passengers with their cars could be arranged and that these costs could be made part of a 'package deal' that includes air transport for passengers, sea transport for vehicles and the necessary ground transport connections.

If the 128,000 passengers carried by sea in 1971-72 had been carried by air the airline revenue would have been \$2.2m⁽¹⁾. This amount would have more than offset costs⁽²⁾. The cost of actually providing for sea passenger services is estimated to have exceeded the revenue received by a figure of the order of \$2m using the ships that were operating in 1971-72.

Air transport has the flexibility to carry all passengers to and from Tasmania. From information obtained it appears that the current fare levels would cover airline costs. Taking into account the extra costs to passengers and the savings to ANL, the saving overall would seem to be in excess of \$1m per annum.

Before a definite statement can be made that sea passenger services be discontinued a detailed investigation would need to be made. This investigation would have to examine the costs and benefits involved such as whether any of the socio-economic groups that travel by sea would be inequitably disadvantaged and means to overcome this factor; service requirements at different airports; the co-ordination of sea transport of tourist vehicles with tourist arrival; and effect on tourist industry. On the knowledge gained so far it appears to be a strong possibility that the results of the investigation would be favourable to all passengers travelling by air.

-
- (1) Calculated on \$19.50 Melbourne-Launceston economy air fare allowing for one quarter of passengers being children travelling at half fare.
 - (2) It is understood that the \$17 fare charged for economy air travel between Melbourne and Devonport/Wynyard is barely profitable. These services are flown with Friendship aircraft but if the traffic and facilities could support DC9 operations at these airports the costs would be lowered. On this basis it is assumed that the \$19.50 Melbourne to Launceston economy air fare would more than cover costs on the slightly longer Melbourne-Launceston stage.

AN ILLUSTRATIVE STUDY OF SOME ALTERNATIVE SHIPPING STRATEGIES FOR THE NORTH TASMANIA - MELBOURNE TRADE

This Annex outlines the cost of operating shipping services between Melbourne and north Tasmania and demonstrates how these costs could be affected by:

- . the use of larger vessels
- . variations to the frequency of service and/or the level of utilisation of vessels
- . possible variations in the number of Tasmanian ports used for general cargo Ro-Ro services.

No attempt has been made to determine the optimum pattern of shipping movements to and from Tasmania, as this was beyond the scope of the report. One problem would be that the 'optimum' pattern would vary according to the assessment of frequency of service required.

The approach is to outline in general form the economies available from efficient utilisation of larger vessels in the north Tasmania to Melbourne trade. Terminal costs and wharfage are regarded as constant; the possibility of reducing these costs is dealt with elsewhere in the report.

FREQUENCY OF SERVICE, UTILISATION OF CAPACITY AND SHIP COSTS

The basic assumption of this analysis has been that, under the conditions currently existing in the Tasmania trade, the majority of ship costs (excluding terminals and wharfage) can be treated as fixed. If the amount of cargo increases then utilisation at a given frequency of service will increase

and the unit cost of moving the cargo decreases. For instance, in the case of a 2,500 cargo ton capacity vessel⁽¹⁾ with estimated annual operating costs of \$2,073,000, working 150 round trips per year, the cost per ton of moving cargo varies from \$5.52 when the vessel is 50 per cent utilised to \$2.76 when it is 100 per cent utilised. The relationship between frequency and cost for vessels of different cargo capacities operating at 70 per cent capacity is shown graphically in Fig. 1.

During 1971-72 it is believed that vessels operated in the Tasmania trade at about 65 per cent capacity. Any growth in trade under these circumstances would increase utilisation and lead to a reduction in the cost per ton. However, it is estimated that the Tasmanian non-bulk cargo trade will only grow at around three to five per cent per annum in future years, which does not give great scope for reductions in the cost per ton through increased utilisation of existing cargo capacity.

Table 1 outlines the unit costs of moving a given volume of cargo for a range of possible shipping strategies. The most significant feature of these data is the trade-off between frequency (and hence utilisation) and unit costs.

(1) See footnote (1), p. 78.

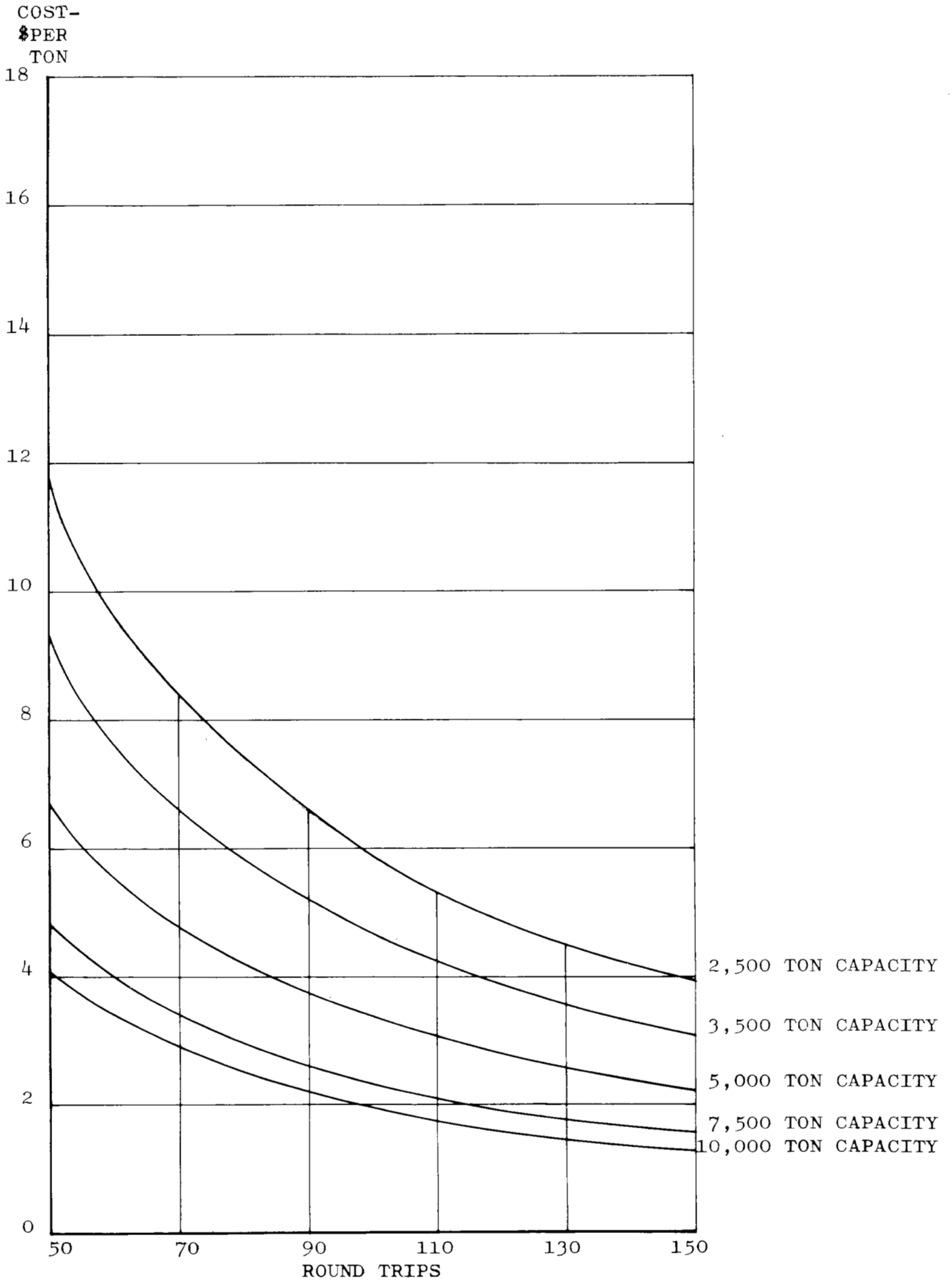


FIGURE 1. RELATIONSHIP BETWEEN FREQUENCY OF SERVICE AND COST PER TON OF CARGO MOVED ASSUMING A 70 PER CENT UTILISATION ON SELECTED VESSELS.

TABLE 1 - COST OF MOVING A GIVEN VOLUME OF CARGO

Cargo to be shifted (tons)	Vessels used (cargo tons capacity)	Frequency provided(a)	Sea-leg cost (\$/ton)
1,000,000	2 x 2,500	200-300	4.14
	1 x 3,500	150-150	2.29
	1 x 5,000	100-150	2.37
	1 x 7,500	67-100	2.51
	1 x 10,000	50-100	2.88
1,300,000	2 x 2,500	260-300	3.19
	2 x 3,500	185-300	3.52
	1 x 5,000	130-150	1.83
	1 x 7,500	87-100	1.93
	1 x 10,000	65-100	2.22
1,500,000	2 x 2,500	300-300	2.76
	2 x 3,500	107-150	3.05
	1 x 5,000	150-150	1.58
	1 x 7,500	100-100	1.67
	1 x 10,000	75-100	1.92
2,000,000	2 x 3,500	286-300	2.29
	2 x 5,000	200-300	2.37
	1 x 10,000	100-100	1.44

(a) The lower figure represents the minimum number of trips when vessels are 100 per cent utilised and the upper figure represents the maximum feasible number of trips.

TOTAL COSTS OF ALTERNATIVE SHIPPING ARRANGEMENTS

This section examines the total costs of various alternative strategies for the movement of cargo between north Tasmania and Melbourne. In addition to the sea leg costs, wharfage and terminal charges are considered, together with the land transport costs associated with the estimated intrastate cargo movements.

In 1971-72, some 635,000 tons of non-bulk freight (both interstate and overseas) were carried from Melbourne to the northern Tasmanian ports, while some 631,000 tons moved from the northern Tasmanian ports to Melbourne. The tonnages moving through each of the northern ports are shown in Fig. 9.1 of Chapter 9. This figure gives estimates of the base cargoes originating in, or destined for the northern ports and Hobart.

These internal flows are broad estimates based on the following assumptions :

- . 100,000 tons of Hobart interstate freight moving both to and from Melbourne passes through Devonport (50,000 tons), Burnie (30,000 tons) and Bell Bay (20,000 tons)

- . 50,000 tons of Launceston interstate freight moving both to and from Melbourne passes through Devonport (40,000 tons) and Burnie (10,000 tons)

- . 5,000 tons of overseas freight received at Bell Bay is assumed to have been destined for Launceston while 17,000 tons received at Devonport is assumed destined for Devonport (7,000 tons), Burnie (5,000 tons) and Hobart (5,000 tons)

- . 58,000 tons of overseas freight shipped from Devonport is assumed to have originated at Devonport (18,000 tons), Burnie (15,000 tons), Hobart (15,000 tons) and Launceston (10,000 tons). All 5,000 tons of overseas freight shipped from Bell Bay is assumed to have originated at Launceston.

The Shipping Strategies

A A single 7,500 cargo ton capacity vessel operating between Melbourne and one northern Tasmanian port.

B A single 10,000 cargo ton capacity vessel operating between Melbourne and one northern Tasmanian port.

C-1 Two vessels, one of 3,500 cargo tons and another of 2,500 tons capacity, providing each northern port with two visits per week from Melbourne.

C-2 As in C-1 except that Bell Bay receives three visits per week, Burnie two and Devonport one.

C-3 As in C-1 except that Devonport receives three visits per week, Bell Bay two and Burnie one.

D Two vessels, one 3,500 cargo ton and two 2,500 cargo ton capacity vessels providing each northern port with three visits a week from Melbourne.

The following assumptions underlie the analysis:

. In calculating land transport costs, a figure of three cents per ton mile has been assumed to cover the cost of moving cargo between ports in Tasmania.

. Tonnages carried by land transport between Tasmanian ports under the different strategies are calculated by assuming that cargo is held about two days on the average before being moved. This assumption seems consistent with estimated 1971-72 cargo movements.

. Estimated 1971-72 cargo movements between Hobart and northern ports are expected to continue in all of the strategies. The break-up between the northern ports, however, will vary according to shipping frequencies provided to each port.

Calculated cargo movements through northern ports for the mixed strategies (C and D) are shown in Table 2 together with the estimated cargo capacities available and the resultant utilisation rates. Strategy A would result in an 84 percent utilisation⁽¹⁾ and strategy B in a 63 percent utilisation.

TABLE 2 - CARGO CAPACITY AND UTILISATION BY PORTS IN THE MIXED STRATEGIES

Port	Strategy			
	C-1	C-2	C-3	D
<u>Burnie</u>				
- Capacity ('000 tons)	500	500	250	750
- Estimated cargo ('000 tons)	268	374	81	243
- Utilisation (%)	54	75	32	32
<u>Devonport</u>				
- Capacity ('000 tons)	600	250	1,050	750
- Estimated cargo ('000 tons)	528	187	715	318
- Utilisation (%)	88	75	68	42
<u>Bell Bay</u>				
- Capacity ('000 tons)	700	1,050	500	1,050
- Estimated cargo ('000 tons)	470	705	470	705
- Utilisation (%)	67	67	94	67
<u>Total</u>				
- Capacity ('000 tons)	1,800	1,800	1,800	2,550
- Estimated cargo ('000 tons)	1,266	1,266	1,266	1,266
- Utilisation (%)	70	70	70	50

Source: BTE estimates

(1) An average utilisation rate as high as 84 per cent would be very difficult to achieve in the Tasmania trade due to seasonal fluctuations in cargo. This strategy also does not allow sufficient margin for growth.

This table shows that in strategies C and D the utilisation rates vary between ports. In strategy C-1, for example, although the overall utilisation rate is 70 per cent it varies from 54 per cent at Burnie to 67 per cent at Bell Bay and 88 per cent at Devonport. In strategy C-3, this variation may be important since the calculated utilisation rate of 94 per cent at Bell Bay would probably not occur. Utilisation may be lower because, in the seasonal peak, cargo may move to either Burnie or Devonport if cargo space is not available for some time.

Results

The total transport cost for each of the various strategies is shown in Table 3 (see also Table 9.2 in Chapter 9).

Although larger vessels result in lower sea leg costs, the lower frequencies necessarily result in more intrastate movements of cargo. Thus, the reduction in sea leg costs tends to be offset by increases in land transport costs.

TABLE 3 - COSTS OF VARIOUS ALTERNATIVE ARRANGEMENTS OF SHIPPING SERVICES BETWEEN MELBOURNE AND NORTHERN TASMANIAN PORTS : SHIP AND LAND TRANSPORT COSTS

(\$ per ton)

	Strategy			
	A	B	C	D
Sea-leg costs	1.98	2.27	3.45	5.08
Wharfage	1.76	1.76	1.76	1.76
Terminal charge	1.30	1.30	1.30	1.30
Shipping costs	5.04	5.33	6.51	8.14
Land transport costs	1.28-1.98	1.28-1.98	0.76-0.87	0.54
Total	6.32-7.02	6.61-7.31	7.27-7.38	8.68

Source: BTE estimates

CONCLUSIONS

Several of the suggested shipping strategies may result in reductions in costs in the north Tasmania-Melbourne trade. Such reductions in cost, however, would only be gained at the expense of reduced frequencies of service. It is apparent from the calculations that there are no simple solutions that would lead to immediate reductions in shipping costs. Because any change in shipping service must take some time to implement, the estimated lower costs resulting from some strategies would be more likely to offset future cost increases than result in immediate cost reductions.

THE INFLUENCE OF WHARFAGE ON FREIGHT RATES

The term 'freight rate' refers to a gross charge which has two components - a sea freight rate, and a charge to cover wharfage dues. Table 1 illustrates the importance of wharfage.

TABLE 1 - COMPONENTS OF FREIGHT RATES ON MELBOURNE-NORTH TASMANIA

Cargo having a deck area of 5ft x 8ft and height of less than -	ROUTE AS FROM AUGUST 1972			
	Sea freight	Wharfage	Gross freight	Wharfage as proportion of gross freight
	\$	\$	\$	%
5 ft	33.70	9.50	43.20	22
7 ft	39.50	13.30	52.80	25
12ft 6in	55.45	23.75	79.20	30

Because of the different ways in which shipping freight rates and wharfage charges are calculated on various types of cargo the percentage of the total shipping freight rate made up of wharfage varies. For general containerised cargo considered in Table 1 the percentage varies from 22 to 30 per cent. Table 2 shows the influence of wharfage charges on the net sea freight charged by ANL for a selected container size over various routes and indicates that the percentage of wharfage varies from 12 per cent on the Sydney-Hobart route to 25 per cent on cargo moving from Melbourne to northern Tasmania.

TABLE 2 - COMPONENTS OF FREIGHT RATES AS FROM AUGUST 1972
CONTAINER MEASURING 5ft x 8ft x 7ft

	Route							
	Melb/ Nth. Tas.	Nth Tas/ Melb.	Melb/ Hob.	Hob/ Melb.	Syd/ Hob.	Hob/ Syd.	Syd/ Nth Tas.	Nth Tas/ Syd.
Freight rate at 40 cu ft/ton	\$ 52.80	45.60	76.80	76.80	93.60	93.60	93.60	93.60
Wharfage	\$ 13.30	10.04	10.51	8.65	11.17	10.84	13.97	12.24
Net freight charged by ANL	\$ 39.50	35.56	66.29	68.15	82.43	82.76	79.63	81.36
Proportion of freight attributable to wharfage %	25	22	14	11	12	12	15	13

The inclusion of the wharfage charges in the Tasmanian shipping freight rates has resulted in the following:

- . the lower freight rate from northern Tasmanian ports to Melbourne compared to the Melbourne-northern Tasmania rate is almost entirely due to the difference in wharfage rates. This situation reflects the relatively high import wharfage in northern Tasmania ports
- . prior to uniform wharfage rates being charged at the three northern ports in 1972 the sea freight rates to and from these ports were the same. The gross freight rates set by ANL to cover the northern Tasmania - Melbourne route simply included an average of the wharfage rates from the northern Tasmania ports.