

TRANS-TASMAN SHIPPING SERVICES

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ABSTRACT: *This paper mainly describes likely developments in trans Tasman shipping services in the near future. Reference is made to the current downturn in cargo volumes, particularly ex New Zealand and the likelihood of only slow growth under the recently signed Australia New Zealand Closer Economic Relations Agreement.*

The Union Steam Ship Company is the principal shipping operator on the trade having experienced strong competition from Maritime Carriers Limited between 1977 and 1982. Competitive services are expected to be provided by the Australian and New Zealand Government owned lines in early/mid 1983 at a time when the Union Company is laying up numerous ships. Consequently the trade is about to become substantially overtonnaged.

Shipping services are expected to alter significantly in the near future in terms of available tonnage, ship types and ports of call. The latter will be affected by the expected relaxation of New Zealand road transport distance restrictions in 1984. When cargo growth does eventuate it is expected that economies of scale, particularly in terminal operations, will be reflected in the level of freight rates.

TRANS TASMAN SHIPPING SERVICES

D. J. BURTT

INTRODUCTION

This paper attempts to provide a perspective of trans Tasman shipping services by briefly discussing trade developments, noting the services currently offered, and finally discussing some of the shipping developments that could occur, including the affects of the Australia New Zealand Closer Economic Relations Agreement (C.E.R.).

I should add that the Company I am employed by, Union Shipping Group, has a vested interest in the trade but I will, nevertheless, attempt to be as objective as possible.

TRADE

Trade between Australia and New Zealand was given a stimulus in 1966 with the introduction of the New Zealand Australia Free Trade Agreement (N.A.F.T.A.). The reduction in tariff barriers was substantial in the early years but by the mid-1970's there were few commodities that could be added to the duty-free list without opposition from either Australian or New Zealand interests (see Burtt (1979, p.14)). In 1978 the first steps were taken towards a more comprehensive free trade arrangement culminating in the C.E.R. Agreement to be implemented on 1 January 1983. This involves the gradual phasing out of duty and quota controls on total trade between Australia and New Zealand with only a few commodity exceptions. The process is designed to be gradual to allow time for industries in both countries to take steps to expand or contract and for this reason and the fact that both economies are in a recessionary phase it is unlikely that there will be substantial growth in trade between the two countries over the next two or three years.

TABLE 1

TRANS TASMAN LINER CARGOES

(thousand freight tonnes)

<u>Year ended June</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u> (forecast)
<u>A. Liner Services</u>							
<u>Westbound (ex N.Z.)</u>							
USSCo	780	630	580	660	740	700	615
A.N.L.	5	4	3	2	5	5	5
Maritime Carriers	-	3	40	40	40	85	60
Total	785	637	623	702	785	790	680
<u>Eastbound (ex Aust.)</u>							
USSCo	435	420	550	510	510	525	440
A.N.L.	15	10	20	25	25	25	25
Maritime Carriers	-	1	25	30	30	55	40
Total	450	431	595	565	565	605	505
<u>Total</u>							
USSCo	1215	1050	1130	1170	1250	1225	1055
A.N.L.	20	14	23	27	30	30	30
Maritime Carriers	-	4	65	70	70	140	100
Total	1235	1068	1218	1267	1350	1395	1230
<u>B. Other Services</u>							
<u>Westbound (ex N.Z.)</u>							
Tasman Pulp and Paper	-	80	180	220	200 (est)	N/A	N/A
<u>Eastbound (ex Aust.)</u>							
B.H.P.	105	110	125	85	100 (est)	N/A	N/A
Grand Total	1340	1258	1523	1572	1650	1395	1230

Note: 1983 figures assume competition from national shipping lines will not occur before June 1983.

Source: "Trans Tasman Shipping", Union Steam Ship Company of New Zealand Limited.

TRANS TASMAN SHIPPING SERVICES

As shown in Table 1 liner cargoes have fluctuated considerably between the year ended June 1977 and forecast for the year ended June 1983. There was a strong downturn in 1978 and a similarly strong downturn, of about 12% is forecast for 1983. In the interim years cargo growth averaged 7% per annum but between 1977 and forecast for 1983 there will have been almost nil growth.

The downturn in June 1983 cargoes began in the early part of that year with the main commodities involved being timber shipments ex New Zealand and motor vehicle shipments ex Australia.

Both the New Zealand and Australian economies are currently depressed and there are few signs that an upturn is likely before the end of the 1983 calendar year. Cargo movements are related to the state of the economies and as a consequence the relatively low level of trans Tasman cargoes is expected to continue through into the 1984 trading year.

SHIPPING SERVICES

The Union Steam Ship Company has, since the turn of the century, been the principal carrier on the trans Tasman trade, but, as shown in Bureau of Transport Economics, Australia, Ministry of Transport, New Zealand (1980) and in Table 1, its share of total liner cargo has been declining during the last 10 years. In the mid/late-1970's two of the major shippers, Tasman Pulp and Paper Company and Broken Hill Proprietary Company, decided to ship most of their cargo in their own vessels generally ballasting on the return leg. The value of independence, choice of ports served, quicker turnaround, etc. was apparently sufficient to warrant use of their own vessels.

An additional liner service was introduced to the trade in 1977 by Maritime Carriers Limited initially with one vessel but expanded to a three vessel operation, including the 300 container capacity vessel TOTARA, in 1981. The other two smaller vessels were conventional vessels designed to carry both containers and bulk cargoes. All three ships berthed at conventional wharfs employing casual labour, compared with Union Company ships which berth at roll-on/roll-off terminals where permanent labour is employed. In late 1982, due mainly to the downturn in trans Tasman cargoes, Maritime Carriers was forced to initially lay up one vessel and then withdraw its services completely, with the Union Company taking over the lease of TOTARA.

There are also two cross trading operators, the Australian National Line (A.N.L.) and the Shipping Corporation of New Zealand (S.C.N.Z.), providing a limited and less regular service, mainly from Australia to New Zealand, as part of their round-the-world service.

Additional competition is also provided by the airlines but they cater mostly for high value and perishable commodities which are able to bear the higher freight rates involved.

At the time of writing (late 1982) the Union Company was operating four roll-on/roll-off vessels plus two conventional vessels in the trade. One roll-on/roll-off vessel (MARAMA), one cellular vessel (TOTARA) and one conventional vessel (NGAKUTA) were laid up and furthermore the two smaller former Maritime Carriers vessels were also out of work. Current forecasts indicate that additional vessels are likely to be laid up in early 1983.

For the most recent year available, the year ended June 1982, market shares of liner cargo are estimated at 88% Union Company, 10% Maritime Carriers and 2% for cross trading (A.N.L.) vessels. Union Company's share is expected to increase slightly during the 1983 trading year due to the withdrawal of Maritime Carriers but this does not take into account the anticipated entry of the national shipping lines at some time during 1983.

With Tasman Pulp and Paper Company and B.H.P. cargoes included it is estimated that for the year ended June 1982 the Union Company share reduces to 72%, the Maritime Carriers share to 8% and A.N.L.'s share to 2%.

COST ASPECTS AND THE EFFECTS OF COMPETITION

The advent of Maritime Carriers competition and the expected entry of the national shipping lines has resulted in the stabilisation of some freight rates.

It is worth noting that even though freight rates across the Tasman are often referred to as comparatively high⁽¹⁾, Maritime Carriers were still unable to sustain a viable operation and incurred losses of many millions of dollars before they withdrew.

Some of the difficulties involved in making meaningful comparisons of freight rates by trade should be noted:

1. Differences in journey coverage (wharfgate to wharfgate, door to door, etc.).

¹ Bureau of Transport Economics, Australia, Ministry of Transport, New Zealand (1980), p.33.

TRANS TASMAN SHIPPING SERVICES

2. Possible inclusion of other services (consolidation, documentation, etc.);
3. Possible sampling bias (since shippers experiencing favourable rates will be more reluctant to divulge details); and
4. Differences in the timing of increases.

Furthermore increases approved by national bodies, such as the New Zealand Department of Trade and Industry or the Australian Shippers Council exceed average effective rates actually applied. This is particularly so in the difficult economic climate that currently exists.

The most objective means would be to either:

1. Compare the total cost of a shipping service with the related cargo moved, or
2. Sample on a very large scale

Even if either of these methods were successful there are also quality of service features (frequency, reliability, etc.) to include which will vary by trade.

This is not to say that freight rate comparisons cannot and should not be made but simply that they must be treated with caution.

COST ASPECTS

Competitive pressures have caused the Union Company to re-examine in greater depth than usual, the overall cost structure of its operations. Only some of the knowledge gained can be repeated here because of its commercially sensitive nature. Most emphasis is placed on scheduling alternatives since this is an area of potentially substantial savings.

A comment sometimes made is that the Union Company should reduce the number of ports of call, particularly in New Zealand where seven ports are directly served (compared with two in Australia).

From a broad viewpoint the wider coverage of New Zealand ports is not surprising given the higher costs of internal, particularly rail, transport in New Zealand compared with Australia. From 1984 onwards, however, circumstances may be different since the distance restriction on road transport competition is likely to be lifted (see New Zealand

Ministry of Transport (1982)) and the end result should be an improvement in New Zealand's internal transport services.

On a more detailed basis the costs of calling at an additional port depend partly on the alternative use of the vessel(s) involved. That is, if there is no alternative use then fixed costs such as depreciation and interest charges can be ignored and the cost of making such calls becomes only the variable costs involved. If on the other hand there is an alternative use then the costs of making such calls should include these fixed costs.

The question of whether the vessel(s) have an alternative use is complex and requires recourse to some history. In the early 1970's trans Tasman vessels, including MAHENO and MARAMA, were on two-weekly cycles but they were smaller than the vessels currently on the trade and stevedoring could be completed in the time available. Since then, to achieve greater economies, larger ships were employed and it is not now possible to profitably schedule ships on two-weekly cycles. The critical question therefore becomes whether it is both possible and desirable to schedule ships on, say, 16- or 18-day cycles rather than three-weekly cycles.

The necessity to integrate coastal and trans Tasman operations at New Zealand and Australian terminals has made other than weekly incremental cycles impossible. Furthermore shippers generally prefer ship calls on the same day each week to assist in planning production and organising sales so that on both counts weekly incremental cycles become preferable. Therefore if not two-weekly then three-weekly cycles are necessary. Nevertheless this remains a key aspect of the efficiency of Union Company's operations, and is discussed again later in this paper.

For the purpose of analysing the economics of additional port calls the above comments indicate that the ships do not have an alternative use, except for New Zealand coastal services⁽¹⁾, and so fixed costs need not necessarily be covered.

This approach is consistent with that used in Bureau of Transport Economics (1982b)p.70) where it was noted that additional calls on a regular basis should include ship fixed costs. However the schedules involved, being "around the world", were continuous so any spare time could be profitably used by bringing forward the timing of the next voyage. This is the key difference with the shorter haul trans Tasman service where spare time cannot be as profitably used.

1 Australian maritime requirements do not allow trans Tasman vessels manned by New Zealanders to carry Australian coastal cargoes.

TRANS TASMAN SHIPPING SERVICES

Bureau of Transport Economics, Australia, Ministry of Transport, New Zealand (1980) examined the economics of trans Tasman calls at Brisbane and Adelaide concluding that as a general rule such calls were not viable. In the case of New Zealand port calls some up-to-date information can be used to draw specific conclusions.

If trans Tasman vessels were calling at Wellington and Lyttelton (near Christchurch) then to add regular calls at, say, Dunedin and Nelson involves mainly additional fuel and stevedore⁽¹⁾ costs. From Lyttelton to Dunedin and return involves about NZ\$11,000 of additional fuel plus extra stevedore costs of about NZ\$300 per ISO⁽²⁾ compared with inland transport costs of NZ\$600 to NZ\$800⁽³⁾ per ISO. The breakeven cargo volume is therefore between 22 and 37 ISO's per call which, when compared with current Dunedin cargo movements averaging 60 ISO's per three-weekly call (by two vessels), indicates that direct calls are viable.

Similarly in the case of calls at Nelson the additional fuel cost is about NZ\$1,200⁽⁴⁾ per call compared with inland transport costs (from Lyttelton) of NZ\$1,000 to NZ\$1,100 per ISO indicating that only two or three ISO's are necessary for calls to be viable. There are, of course, other minor costs which when spread over a small cargo volume become more significant raising the breakeven cargo volume. Nevertheless current cargo movements through Nelson far exceed these breakeven figures indicating that direct calls are viable.

These comments are based on the use of marginal cost pricing which although appropriate raises the problem of ensuring that there is sufficient revenue to cover total costs. This is of course necessary in the long run if a private enterprise company is to remain viable. Fortunately in the case of including extra New Zealand port calls there is the prospect of shipping extra New Zealand coastal cargoes resulting in additional revenue being obtained and helping to ensure that total revenue is sufficient to cover total costs.

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- 1 There is a net increase in stevedore costs since the savings at Lyttelton would be minimal compared with the extra costs at Dunedin.
 - 2 International Standards Organisation, being the standard container used in international trades.
 - 3 The variation is due to the inclusion or otherwise of the return movement of the empty ISO in the rate charged.
 - 4 Being much less than for Dunedin calls since vessels otherwise sail past the Nelson port entrance.

LONGER TERM SCHEDULING OPTIONS

The preceding comments on scheduling options relate to prevailing, that is short term, conditions. In the longer term the options widen as the conditions become less restrictive. I should add, at this stage, that the comments I am about to make on longer term scheduling options are basically my own and may not represent those of the Union Company.

These views are likely to have wider interest as they reflect some of the trends that could occur in trans Tasman shipping services in the longer term by operators generally, rather than the Union Company in particular.

The discussion is based on ensuring that ships' time is most profitably used by minimising both idle time and poorer quality revenue cargo.

The least radical Union Company change would be to reduce the number of New Zealand ports of call, that is to centralise some cargoes, so that two-weekly schedules are possible. From earlier comments it is clear that shippers in smaller ports would, without direct calls, be faced with greater transport costs and this may become reality as a result of competitive pressures. These higher transport costs could be due to the extra inland transport costs or the extra costs of a coastal feeder service depending on the relative economics. However these additional costs may not be so substantial as initially thought if the anticipated relaxation of the 150 kilometre road transport restriction occurs in 1984.

A more radical change would be for Union Company ships to instead berth at common user terminals. The main advantages are:

- the possibility of obtaining lower stevedoring costs due to better economies of scale,
- avoidance of current scheduling constraints requiring vessels to be worked on three-weekly cycles⁽¹⁾,

whereas the main disadvantages are:

- that to obtain higher productivity at container terminals requires specialist container ships thereby limiting the types of cargo that can be carried,

¹ Thereby also taking advantage of the three shift per day operations at New Zealand container terminals compared with two shift per day operations at most Union Company New Zealand terminals.

TRANS TASMAN SHIPPING SERVICES

- remaining coastal cargoes through Union Company terminals would experience higher unit operating costs,
- that Union Company would no longer have control over terminal operations and in particular ships would experience some queuing delays.

Furthermore schedules may no longer be in weekly incremental cycles but whether shippers consider this to be an adverse feature balanced against possible freight rate savings is difficult to assess. An attempt to quantify a similar relationship between frequency of service and levels of freight rates was undertaken in the 1980 survey of trans Tasman exporters resulting in shippers generally preferring a less frequent service if associated with lower freight rates (see Bureau of Transport Economics, Australia, Ministry of Transport, New Zealand (1980) p.41).

The longer term shipping situation could therefore reflect a mixture of ship types and terminal operations since, for example, forestry products are likely to remain suited to a roll-on/roll-off type operation whereas, at the other extreme, manufactured products moving between the main centres could be best suited to a lift-on/lift-off type operation using a common user terminal.

OTHER COST FACTORS

Individual cost components of Union Company's operations were examined in Bureau of Transport Economics, Australia, Ministry of Transport, New Zealand (1980) and although some aspects have changed additional comments are not warranted. It should be mentioned however that the Union Company is continually attempting to make cost savings and success has been possible in areas such as:

- equipment control, hire and repair,
- manning arrangements at terminals,
- management costs,
- transshipment costs,
- fuel costs.

Furthermore the economics of re-engining the gas turbine vessels is being re-assessed in the light of anticipated lower re-engining costs (reflecting the more competitive approach of shipyards in the present economic climate).

SHIP UTILISATION

Utilisation of Union Company vessels can be viewed according to cargo being stowed in all available cargo areas (nominal utilisation) or according to the maximum amount of cargo that can be effectively stowed given differences in cargo equipment sizes (effective utilisation). Each approach has merit with the former indicating the maximum payload achievable under ideal conditions and the latter the maximum payload that can be realistically expected. Nevertheless the two sets of figures differ significantly, as shown in Table 2, by an average 20% and warrant further comment.

In the case of purely cellular container vessels, capacity is measured in terms of TEU's (twenty foot equivalent units) which are capable of occupying almost the entire cargo space available. Utilisation reflects the number of revenue earning TEU's even though some TEU's may not be completely full. That is, there is always likely to be some unoccupied cargo space regardless of the ship type and cargo equipment being used.

Roll-on/roll-off vessels have the added advantage of being able to stow a wide range of cargo types including cargoes too large for TEU's and individual shipments suited to the smaller equipment types used on roll-on/roll-off vessels (rather than requiring expensive consolidation with other cargoes to satisfactorily fill a TEU).

Consequently ship utilisation figures should be treated with caution and put into perspective regarding the purpose of the figures and the ship types involved.

FUTURE COMPETITION

At the time of writing (late 1982) both the Australian National Line (A.N.L.) and the Shipping Corporation of New Zealand (S.C.N.Z.) have indicated they expect to enter the trans Tasman trade in early/mid-1983. With the current downturn in trade the Union Company has been forced to lay up four vessels and a further two vessels are likely to be laid up in 1983 leaving from four to six vessels to cater for trans Tasman cargoes. Short term forecasts suggest no immediate cargo upturn, even allowing for possible growth under C.E.R. so that the trade is clearly about to become substantially overtonnaged. The cost of idle ship capacity reflects the wasteful use of resources, particularly since the depressed state of world trade allows little alternative use for these vessels.

TRANS TASMAN SHIPPING SERVICES

TABLE 2

UTILISATION OF UNION COMPANY VESSELS

<u>Year ended June</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
<u>Westbound</u>					
Nominal utilisation	57%	69%	73%		
Effective utilisation	74%	84%	89%	91%	88%
<u>Eastbound</u>					
Nominal utilisation	38%	65%	57%		
Effective utilisation	56%	84%	81%	80%	78%
<u>Total</u>					
Nominal utilisation	47%	67%	65%		
Effective utilisation	66%	84%	86%	86%	83%

Source: "Trans Tasman Shipping", Union Steam Ship Company of New Zealand Limited.

The scope of variations in pricing policies during the depressed period although academically appealing is however limited. It could be argued that prices should be reduced to cover only variable costs but with the downturn in cargo it becomes a matter of ensuring that there is adequate total revenue to at least cover total variable costs. That is revenue declines not because prices are lowered, which in most cases would not stimulate additional cargo flows⁽¹⁾, but because cargo volumes are reduced. Furthermore freight rates already reflect, to some extent, the ability of different shippers to contribute towards fixed costs so this structure further limits the scope for price reductions.

It is worth noting that in 1974 both A.N.L. and S.C.N.Z. expressed similar intentions to enter the trans Tasman trade but at that time cargo was booming and the Union Company was having difficulty providing sufficient capacity. However in early 1975 cargo volumes dramatically declined resulting in the trade becoming overtonnaged and A.N.L. and S.C.N.Z. then reversed their intentions.

The Union Company is attempting to provide the most efficient possible shipping service at the least possible costs, at no expense to the taxpayer. A.N.L. and S.C.N.Z. are instead Government owned shipping lines having the ability to at least absorb losses over a longer period in order to maintain a competitive service. It is questionable whether the intentions of these lines represents a wise investment of taxpayers' money.

Additional competition could be provided by cross over vessels, that is vessels sailing between Australia and New Zealand as part of wider trading routes. The Australian and New Zealand Seamen's Unions support only those cross over vessels manned by their own members thereby restricting cross over involvement to A.N.L. and S.C.N.Z. vessels. As mentioned in R. and A. Burnett (1981, p.99) most cross over vessels sail from Australia to New Zealand so to open up competition in this way would provide more benefits to Australian exporters than New Zealand exporters who would probably experience the higher costs of supporting a dedicated trans Tasman service moving cargoes mostly from New Zealand to Australia. This is not to say that New Zealand importers (and therefore New Zealand consumers) would not benefit from lower freight rates, but the balance of benefits would decidedly favour Australian producers. Furthermore the end result may be a net increase in the total trans Tasman freight bill with shippers getting a less regular service.

¹ By omitting fixed costs, prices could theoretically be reduced by about 15% but the overall effect would be to reduce export commodity prices by about 3% which would do little to stimulate demand in the present depressed economic climate.

TRANS TASMAN SHIPPING SERVICES

This aspect is discussed in more detail in Findlay (1980) concluding that completely open competition is warranted but this view is based more on the conventional economic arguments associated with regulation and deregulation than the specific features of the trans Tasman trade.

SUMMARY AND CONCLUSIONS

There is currently a significant downturn in trans Tasman cargoes and no improvement is expected before 1984. The recently signed C.E.R. Agreement will help stimulate trade but only in the long term.

The Union Company is the principal cargo carrier on the trans Tasman trade having met strong competition from Maritime Carriers Limited between 1977 and 1982. At present the Union Company has four ships laid up and a further two ships could be laid up in early 1983. Nevertheless A.N.L. and S.C.N.Z. have indicated they will enter the trade in early/mid 1983 so substantial overtonnaging will result.

The most appropriate shipping services in future are likely to reflect a mixture of lift-on/lift-off and roll-on/roll-off vessels given the suitability of these vessels to different cargo types. In addition it is generally accepted that roll-on/roll-off vessels are better suited to short haul trades and cellular container vessels to long haul trades, such as between Australia/New Zealand and the United Kingdom/Europe, and since the trans Tasman route falls between these extremes it indicates again the complexity of the appropriate ship type.

In line with longer term cargo growth, there should be benefits arising from economies of scale in both ship and terminal operations (see Burt (1978) and Bureau of Transport Economics (1982a)). Economies are however less likely to be experienced in ship operations since larger ships require a trade-off with regularity and frequency of service which is not so critical in the case of terminal operations.

The economic arguments in favour of deregulation could be applied to trans Tasman shipping services to justify completely open competition but a closer examination of the features of the trade and available shipping services indicates that the likely benefits could be more imaginary than real.

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