

SOME ECONOMIC ASPECTS OF CONFERENCE AND
NON-CONFERENCE WOOL SHIPPING

by

P.D. Chudleigh

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SUMMARY

It is suggested that the freight rate that an alternative wool shipping service could offer will influence the Conference rate for wool shipped from New Zealand to Europe. Data are presented showing that wool freight rate increases over the past five years have been less than freight rate increases for dairy products and meat; the possibility that wool freight rates may have been held back due to the threat of an alternative service in the form of bulk carriers is suggested.

Freight rates for a hypothetical specialised wool service are estimated and compared with Conference rates. These comparisons show that the Conference rates in 1972 and 1976 were very close to the estimated rates for the specialised service. It is also shown that the estimated rates are sensitive to a number of assumptions regarding the specialised service. It is concluded that alternative systems of shipping wool warrant closer investigation in order for the wool industry to move towards the most efficient system for shipping wool to Europe.

Whilst it appears quite feasible for wool to be carried by an alternative service within the context of the current wool marketing system, it is likely that the economics of an alternative service would benefit substantially from changes in various aspects of the wool marketing system. In addition, it is probable that a specialised wool service could be geared closely to the wool industry and would permit change and improvements to be effected more easily than the present liner service where wool is viewed as a general cargo.

The proposition that the withdrawal of wool from the current liner service would create higher freight rates for other export cargoes may be true in the short term. It is quite probable that the liner service would adjust in the longer term to the new cargo mix so offsetting the need for higher rates of freight; this is especially so since a withdrawal of wool would reduce the high imbalance, by weight and by volume, of the northbound/southbound trades.

Apart from detailed investigations into alternative shipping systems, other fruitful areas for study suggested are:

(i) Cross-subsidy effects between products of freight rates set by the Conference should be identified so that Government policies on protection/subsidisation can be formulated more rationally.

(ii) The requirements of wool importers in Europe should be researched more fully, especially with respect to frequency of service and order delivery times.

(iii) Further research and investigations are required into how the withdrawal of wool would affect the overall efficiency of the Conference service. Whether cargoes other than wool are best serviced by a shipping service that includes or excludes wool should be investigated in the national interest.

1. INTRODUCTION

Concern over the rapid escalation of marketing costs for New Zealand's primary export products has been expressed recently in a seminar at Lincoln College [1]. For example, one speaker estimated that the cost of marketing wool (farm gate to overseas mill) for the 1975/76 wool selling season would be around 33.6 N.Z. cents per kg, compared with 22.13 cents/kg in 1973/74 [2].

A considerable portion of total wool marketing costs is associated with shipping. Over 60 per cent of New Zealand's export wool is currently shipped to Europe¹ under an agreement between the New Zealand Wool Marketing Corporation (representing licensed wool exporters) and a group of shipping companies (mostly European owned), commonly referred to as the Conference lines. The current agreement is for wool to be carried by these companies up to 30th September 1978; however, actual freight rates for wool are subject to review each year. Excluding a loyalty rebate (10%) and a currency adjustment surcharge (4.2%), the freight rates as of January 1976 for the carriage of wool to Europe were £88.80 per 1,000 kg (greasy) and £112.70 per 1,000 kg (scoured); these rates were equivalent to 16 to 20 New Zealand cents per kg so that the total shipping cost would therefore approach 50 per cent of the total farm gate to mill marketing cost estimated for 1975/76.

The grouping together of a number of shipping companies performing liner services to form what is commonly called a 'Shipping Conference' has been a controversial issue in world shipping for some years. The two major arguments upon which the Conference system rests are:

¹ Europe refers here to both United Kingdom and Continental countries.

(i) The fixing of freight rates for each commodity injects security into both shipping and shipowning operations. Shipowners are able to plan ahead with respect to ship construction and the development of specialised tonnage. Shippers are not faced with the vagaries of ship supply and fluctuating freight rates as can be the situation when operating in a charter market; this security enables exporters and importers to manage their operations more efficiently.

(ii) The organised pooling of ships from different companies allows orderly and frequent sailings from a range of New Zealand ports to ports overseas and vice-versa.

The major criticism of the Conference system is that the lack of competition between members does not encourage maximum economic efficiency. Associated with this criticism is the nature of rate-setting that the Conference system encourages and the consequent 'one-sided' freight rate negotiations between the lines and shippers.

There is no doubt that the woolgrower ultimately bears a high proportion of the cost of shipping wool. Because of the lack of competition in the current wool shipping service, woolgrowers should be seeking answers to questions concerning the current efficiency of wool shipping methods, and the potential for stemming further increases, or in gaining reductions, in rates.

The main objective of this paper is to examine some aspects of the freight rate for wool in the New Zealand to Europe trade and to highlight a number of issues that warrant further investigation if a positive approach is to be taken in the future towards lowering wool shipping costs.

Section 2 of this paper suggests a likely Conference philosophy on wool freight rates and presents some data showing that wool freight rate increases have not been as large in recent times as rates for other major export products destined for Europe. A possible explanation for this is suggested.

Section 3 presents the possibility of wool being shipped as a specialised bulk cargo rather than as a general cargo as at present. Cost-derived freight rates for wool shipped in this manner are calculated and a number of critical assumptions in the calculation of these rates are discussed.

Some of the implications of a specialised shipping service are considered in Section 4; possible effects on the Conference rates for other cargoes are discussed and some potential interactions between the wool shipping system and the entire wool marketing system are analysed.

2. WOOL FREIGHT RATES WITHIN THE CONFERENCE SYSTEM

It is commonly accepted that the general philosophy behind rate setting adopted by Shipping Conferences is to set a rate for each commodity as high as the particular market for that commodity will accommodate. The maximum rate that will be charged will therefore be related to the possibility of trade in that commodity falling off because the freight rate is too high. A measure of the sensitivity of the quantity of a commodity traded to the sea freight rate is termed the price elasticity of demand for sea transport for that commodity. According to a formula suggested in (1969), the price elasticity of demand for sea transport of wool is a function of the price elasticity of export supply of wool, the price elasticity of mill demand for wool, and the relativity between the freight rate and the final mill price [3]. In an analysis in 1971, the price elasticity of demand for sea transport of Australian wool in the medium term was calculated as - 0.04 [4]; that is, a 100 per cent increase in the freight rate would cause only a 4 per cent fall in quantity shipped. It is likely that such an inelastic demand for wool transport would apply also to the New Zealand situation and would imply that the Conference lines have considerable scope for increasing wool freight rates in the New Zealand to Europe service.

A second factor affecting the upper limit to the wool freight rate is the possibility of non-Conference shipping offering a lower rate and enticing the wool trade away from the Conference. In fact, it is a major theme of this paper that it is the rate at which an alternative service can be provided that will determine the Conference rate for wool.

Because of a tendency within the Conference to push the freight rate for each cargo towards its upper limit, actual freight rates probably bear little relationship to the costs of carrying each particular cargo. Apart from handling costs associated with each cargo carried, it is difficult to apportion common costs, such as capital charges or fuel, between all cargoes carried in a particular sailing. The argument is that if such costs were apportioned to each cargo on the volume or weight contribution that each made on a round voyage, certain cargoes might never be carried. Thus, cross-subsidisation of rates is likely to occur to keep

the whole service viable. In the Australia to Europe trade the cross-subsidy effects appear to act as an export subsidy for manufactured items and an export tax on wool [5]. In the New Zealand context, subsidy effects between export and import items could be of particular interest. Identification of any such cross-subsidy effects should be carried out so that Government policies on tariffs, subsidies, etc. can be formulated more rationally.

The different ship types within the New Zealand - Europe Conference and the necessity for some cargoes to be refrigerated, preclude any simple partitioning of costs to different cargoes. However, it is of interest to look briefly at the weight, volume, and revenue contributions made by the three major liner cargoes carried from New Zealand to Europe (Table 1).

TABLE 1

Estimated Revenue, Weight and Volume
Contributions of the Three Major Cargoes
Carried from New Zealand to Europe

	Freight Rate (a) (£/tonne)	Weight Shipped (b)		Volume Occupied (c)		Revenue Generated	
		(tonnes)	(%)	(Million cu.ft)	(%)	(£)	(%)
WOOL	64	174,000	31	23	41	11,136,000	26
LAMB	97	244,000	44	26	46	23,668,000	56
BUTTER & CHEESE	56	137,000	25	7	13	7,672,000	18
TOTAL		555,000	100	56	100	42,476,000	100

(a) Freight rates refer to rates applying as of 1st January 1975; in the case of lamb the rate used is the carcass rate; in the case of wool, the rate used is the greasy wool rate.

(b) Weight shipped refers to 1974/75 exports to Europe and have been assembled from Producer Board sources.

(c) Stowage factors assumed are: Wool 130 cu ft per tonne; lamb 105 cu ft per tonne; butter and cheese 50 cu ft per tonne.

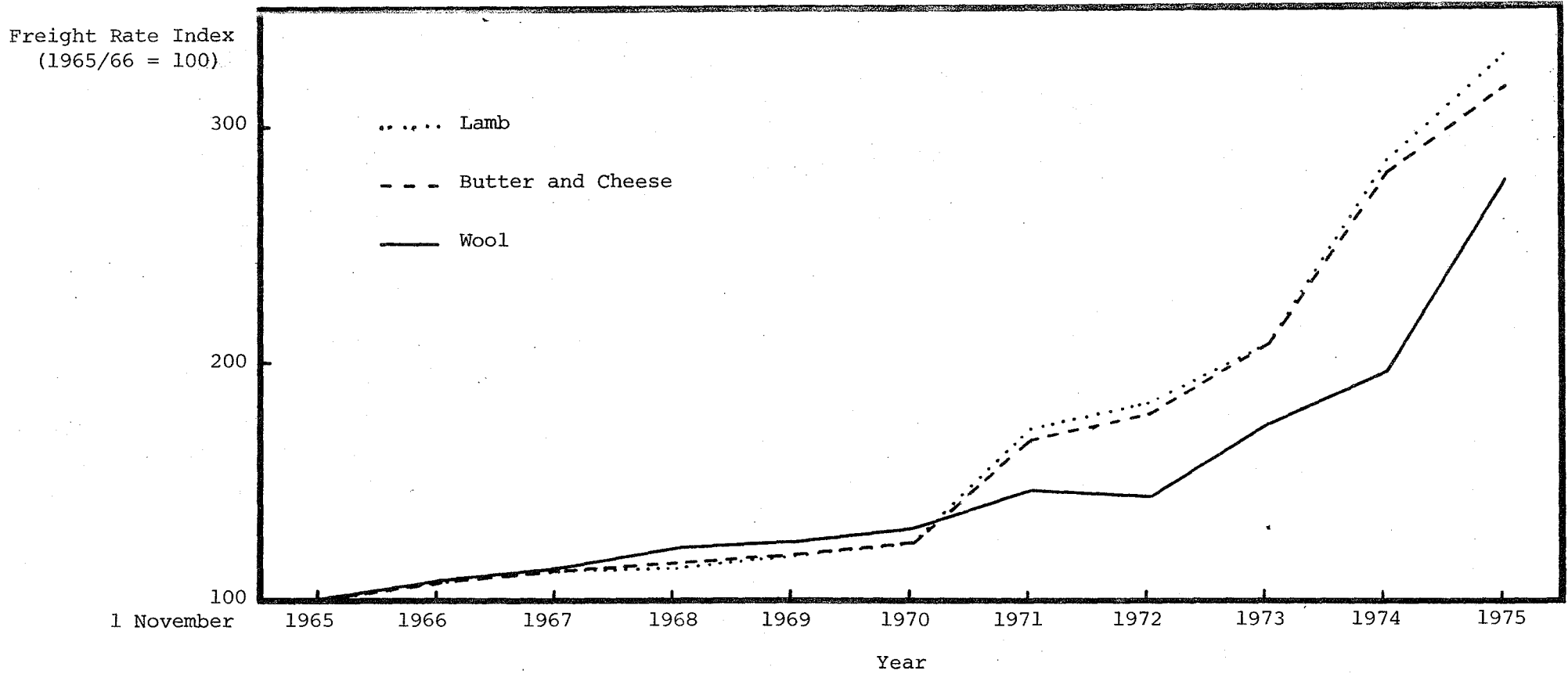
For the restricted number of cargoes considered it is seen that whilst the wool cargo accounted for roughly 31 per cent of weight shipped and 41 per cent of the space required, it generated only 26 per cent of the revenue. In this respect wool could be considered to incur a more than equitable freight rate in relation to the other two products. However, the issue is clouded in that both lamb and dairy products require refrigeration; also, freight rates include loading, discharging and other pre- and post-shipment operations that vary from cargo to cargo.

It is interesting to compare the freight rates from New Zealand to Europe for butter and cheese, lamb, and wool over the past 10 years. With 1965/66 as a base year the movements in freight rates² over the period are shown in Figure 1. Up until 1971 freight rates for wool remained in similar relativity to the other cargoes; from 1971 onwards wool freight rates have increased less than lamb, butter and cheese. Whilst such changes in relativity could be partly due to factors such as changing ship types, higher increases in costs for refrigerated space compared with dry cargo space or the larger number of shipping companies involved in shipping wool compared with lamb and dairy products, it is contended that a major influence has been the appearance of viable alternatives to the Conference for the carriage of wool. The timing of the change in rates certainly supports this hypothesis since the first serious threat from alternative shipping companies appeared during the 1971/72 season.

²The freight rate index presented here is based on rates expressed in pounds sterling; rates therefore need to reflect the devaluation of sterling against other currencies over the past 3-4 years; thus, they include currency adjustment surcharges. Lamb and dairy shipments are made mainly by British Shipping Lines with their main destination U.K., and the majority of wool shipments are made to other parts of Europe by both British and Continental Lines. Thus, it is likely that the currency adjustment surcharges included for wool will have been higher than for lamb and dairy products because only a small proportion of the Conference expenditure for the wool service would be in sterling. A higher proportion (perhaps 50%) of total expenditure on the transport of lamb and dairy products would be in sterling and therefore the effect of sterling devaluation on the shipping companies would be less.

FIGURE 1

Changes in Freight Rates for Wool, Lamb and Dairy Products over Past Ten Years



SOURCES: N.Z. DAIRY BOARD
N.Z. MEAT PRODUCERS BOARD
N.Z. WOOL MARKETING CORPORATION

3. ECONOMICS OF AN ALTERNATIVE SHIPPING SYSTEM FOR WOOL

With the forthcoming containerisation of the New Zealand - Europe trade by the Conference lines, 75 to 80 per cent of export wool is likely to be carried in containers within the next few years. However, the recommendation emanating from the New Zealand Royal Commission on Containers in 1972 [6] regarding the shipping of wool was:

"We recommend that having regard to the critical cost of production of wool arrangements be made urgently to organise a comprehensive examination of the relative costs that may be incurred by different methods of shipping wool".

This study has not been carried out to date. A Wool Board spokesman has recently admitted that containers may not be the best way of shipping wool [2]:

"In the past we concluded that unit packages were better with a much lower capital investment. However, the decision (to containerise) has been made for us by the Shipping Companies and the New Zealand Shippers - notably by the Meat Producers' Board".

It would appear, therefore, that wool growers have not been a particularly strong or active group with respect to wool shipping developments. However, some initiatives have appeared from non-Conference shipping companies. One alternative to the current Conference system that has arisen in the past is shipment of wool by bulk carriers [4], [7], [8]. Calculations based on the costs of operating a bulk carrier service for wool have shown that the bulk carrier does offer a real competitive threat to the Conference service [4], [8]. In fact, the possibility of wool being shipped in bulk carriers outside the Australia to Europe Conference resulted in an actual reduction of the Australia to Europe Conference wool freight rates for the 1972/73 and 1973/74 seasons. As a result of these rate reductions for Australian wool, and due to the interest of bulk carrier companies in shipping New Zealand wool, the net Conference rate for raw wool from New Zealand to Europe was reduced in 1972 by 5% to 10.81 U.S. cents/kg³; a 1972 study

³ Since different freight rates apply for different forms of wool, a 'raw' wool freight rate was calculated by weighting the greasy, scoured, and slipe rates according to past shipments.

on alternative shipping services estimated the corresponding freight rate for a 10 day shipment frequency (roughly equivalent to the effective Conference frequency) using bulk carriers at 10.48 U.S. cents/kg. [8]. The study concluded therefore that no large savings were likely from a bulk carrier service at that time unless backloadings or combination cargoes were contemplated. However, the coincidence of the actual Conference rate and the cost-derived rate in 1972 is of interest to the hypothesis that the cost-derived bulk carrier rate may set the upper limit to the Conference rate.

To pursue this hypothesis further, bulk carrier costs applying to January 1976 were obtained from a European based shipping and shipbroking company. The same assumptions and methodology used in the previous study [8] were adopted, namely:

- (i) Wool would be carried in unitised form in motorised open-hatch bulk carriers, powered by a single-screw slow-speed diesel in the 100-125 R.P.M. range.
- (ii) The rate of loading would be 5,000 bales per day and rate of discharge 8,000 bales per day. Wool would be preassembled prior to loading at three ports in New Zealand.
- (iii) Wool would be the only cargo with bulk carriers returning from Europe in ballast.
- (iv) The ship speed would be 15.5 knots.
- (v) The number of bales carried per annum would be 1.27 million.
- (vi) The frequency of service would be 10 days between sailings throughout the year.
- (vii) Individual bale volume would be 18 cu ft.

The cost-derived rate for such a service was calculated by adding together capital charges (including depreciation and interest), ship running costs (including fuel), port charges and cargo handling costs. Further detail on the methodology used is given in the 1972 study [8].

The cost-derived freight rate for wool for a ten day frequency New Zealand - Europe service was calculated as 20.64 U.S. cents per kg. Allowance was not made in this estimate for extra capital charge on wool stocks due to the longer sea transit time of around 10 days compared to a container service; this could add up to 1 U.S. cent/kg to the total

bulk carrier rate. It should be noted that the 20.64 rate includes such operations as dumping, unitisation, centralisation, etc., so that in all other respects it can be considered equivalent to the Conference service existing in January 1976.

On 1st January 1976, the net Conference rate for raw wool was 18.58 U.S. cents/kg. The comparative cost-derived and Conference rates are summarised in Table 2. These figures would suggest that bulk carrier costs may have increased faster than wool freight rates over the three year period. At this stage it is of interest to note that if the earlier relativity between the wool freight rate and rates for other commodities had been maintained by the Conference lines the raw wool freight rate would have been around 21.5 U.S. cents/kg in January 1976. This could indicate that the Conference lines may have deliberately held down their rate for wool in order to reduce the potential competition from non-Conference operators.

TABLE 2

Comparison of Cost-Derived Bulk Carrier Rates
and Conference Rates for Shipping Raw Wool
from New Zealand to Europe

	Cost-Derived Bulk Carrier Rate for Raw Wool (U.S. cents/kg.)	Net Conference Rate for Raw Wool Wool (U.S. cents/kg.)
1 November 1972	10.48	10.81
1 January 1976	20.64	18.58

Whilst the relationship between Conference and cost-derived bulk carrier rates is of considerable interest, such direct comparison of cost-derived rates and Conference rates necessarily should be made with caution. The cost-derived rate can vary substantially according to the assumptions made regarding the bulk carrier service. One critical assumption is whether any regular backloading from Europe is possible or whether any northbound bottom cargo can be added to the service in order to take advantage of the high volume/weight ratio of wool cargoes. If such possibilities were feasible, the cost-derived rate for wool may be substantially reduced. These possibilities have not been accounted for in the cost-derived rates reported here.

Another critical assumption is the frequency of service required. As the frequency of service drops larger bulk carriers can be utilised so reducing the number of ships necessary to service the trade. Table 3 shows the potential reduction in total costs for reductions in service frequency; allowance has been made for the extra interest charges (approximately 1 per cent per month) incurred by lower frequency services but extra storage capacity requirements in New Zealand or in Europe have not been accounted for.

TABLE 3

Potential Reduction in Theoretical Movement Costs
for Wool Shipped in Bulk Carriers with
Reductions in Service Frequency

Frequency of Service (days between sailings)	Cost-derived Free in and out Rate (FIO) (U.S.c/kg)	Other Shipment Charges (a) (U.S.c/kg)	Total Shipping Charge (U.S.c/kg)	Extra Stockholding Charges (b) (U.S.c/kg)	Total Movements Costs (U.S.c/kg)
8	17.90	6.04	23.94	0	23.94
10	14.60	6.04	20.64	.07	20.71
12	13.35	6.04	19.39	.14	19.53
14	12.46	6.04	18.50	.21	18.71
16	11.80	6.04	17.84	.28	18.12
18	11.27	6.04	17.31	.35	17.66
20	10.85	6.04	16.89	.42	17.31

(a) Includes centralisation, dumping, unitisation, transport to wharf, loading, discharging, and sorting at discharge.

(b) 0.035 per cent per day on wool value of 200 U.S. cents/kg.

Table 3 shows that if the frequency of a bulk carrier service were reduced to below the current effective frequency of the Conference of say, 10 days, significant economies could be gained. For example, if it were acceptable to wool importers to reduce service frequency to, say, 16 days between sailings, as well it might [9], savings of the order of 12% could accrue; however, the efficient utilisation of the large bulk carriers needed would require more streamlined practices than currently exist for the assembling, loading and discharging of large shiploads of wool.

A further assumption of importance is that of bale volume. The effect on the cost-derived freight rate of reducing bale volume is substantial (see Table 4) and takes on added significance since technology for reducing bale volumes by means of higher density dumping is already available.

TABLE 4

Reduction in Freight Rate for Wool Shipped
in Bulk Carriers at a 16 day Service Frequency
with Reductions in Bale Volume

Bale Volume (cu.ft.)	Cost-derived FIO Freight Rate (U.S. c/kg.)	Other Shipment Charges (U.S.c/kg)	Total Shipping Charge (U.S.c/kg)
20	12.40	6.04	18.44
18	11.80	6.04	17.84
16	11.18	6.04	17.22
14	10.54	6.04	16.58
12	9.89	6.04	15.93
10	9.66	6.04	15.70

Other assumptions that could bear on the cost-derived rates are the annual quantity of wool to be shipped, the distribution of wool shipments during the season, loading and discharging rates, and the degree of centralisation of loading and discharging ports.

In summary, the economics of specialised wool shipping services appear quite favourable and could be considered a viable threat to the Conference service. It would appear that current Conference rates for shipping wool to Europe could be constrained by the possibility of bulk carriers, or other alternative shipping systems for wool, entering the trade. Such alternative systems warrant further and continuing investigations in order for the wool industry to move towards the most efficient and least cost system for shipping wool to Europe. These investigations should be undertaken bearing in mind the interaction between the wool shipping system and the wider issues of wool marketing. Implications of a specialised wool service for other cargoes shipped to and from New Zealand also need to be considered in the national interest.

4. WIDER IMPLICATIONS OF AN ALTERNATIVE SHIPPING SYSTEM

It is important to consider the shipping service in relation to the entire wool marketing system. Apart from the cost of shipping, wool exporters and importers are concerned about the reliability and frequency of service, and the time taken for wool, once purchased, to move to the mill in Europe.

Whilst the Conference lines have been proven to be reliable over the years, this does not preclude other shipping companies or groups of companies from being responsible and dependable. Undoubtedly, there would be some risk attached to a new and untested service that would need to be traded off against any potential savings involved.

Frequency of service affects storage requirements for wool at the mills and, depending on the timing of wool auctions in relation to sailings, the time taken for wool to reach the mill from the auction floor. In addition, a bulk carrier service would be slower in transit than container ships which the Conference lines intend to use in the future. Some information on importers' attitudes towards these service attributes is given in a 1973 study [9] but a greater effort should be made to research this area more thoroughly. For example, it could be found that whilst for some wool movements transit time is an important factor, other wool movements may be very much less sensitive to transit time due to the reason for which an order for raw wool has been placed. If this were so, a dual shipping service could be optimal - a faster and more expensive service (by container) and a slower low cost service (by bulk carrier); such a combination could readily be provided by the Conference lines themselves.

Whilst a shipping service should take account of the requirements of importers, other aspects of the wool marketing system could have a marked influence on the most appropriate shipping service for the wool industry. Of considerable significance in this regard is the possibility of the New Zealand Wool Marketing Corporation holding permanent stocks of wool in Europe for direct sale to mills. Such a policy would enable the wool industry to take advantage of lower sailing frequencies. Obviously the adoption of such a stockholding policy would depend on other factors as well as the potential cost savings in shipping. The holding of stocks of raw wool in major consuming countries has a number of potential advantages including a reduction

of capital outlay by processors, reducing order to delivery time, and lessening the risk of supply holdups [10] . The advantages of such a policy were demonstrated in 1976 during the closure of auction sales in Australia due to industrial disputes. During this period there was a strong demand for Australian Wool Corporation stocks held overseas. Thus the effects of closure of auction sales or waterfront disputes could be buffered by overseas stockholding so conferring greater stability to the supply pipeline. If Corporation stocks were held in both Europe and United States, a specialised wool service could serve both areas in a round the world wool service. The economics of such a shipping venture have been analysed and appear favourable [8] .

A second area of the marketing system that could interact significantly with wool shipping is that of package size. If in the interests of the total handling and transport system for raw wool, higher density dumping and/or denser bales (resulting in lower stowage factors) become well established then cost savings in the shipping sector must be expected. Because of the manner in which Conference rates are set, and possibly the types of ships currently serving the trade, wool shippers are currently finding it very difficult to obtain any reduction in the freight rate per kilogram for high-density bales [11] . A shipping service based on volume as the major constraint on how much wool can be loaded into a ship should be more receptive to such logical improvements in wool packaging.

Other aspects of wool marketing that interact with the shipping system are:

- (i) bale marking; bale marks are used for sorting into bill of lading lots, for stowage purposes, and for sorting at port of destination.
- (ii) type specification; the specification of raw wool affects bill of lading lot size, delivery lot sizes etc.
- (iii) wool flow; wool flow to ships affects storage requirements, speed of loading, etc.

For efficient future shipping of wool it is important that improvements in any of these other areas take account of the shipping system and that any beneficial effects on shipping accrue to the industry via the freight rate. It is more likely that such gains could be more fully realised within a

specialised wool shipping service than within the Conference system. This is the undoubted strength of moving towards an alternative service; specialised wool shipping could allow greater freedom for handling and shipping methods to be structured for the wool industry in comparison with the constraints placed upon change and improvement when wool is viewed as a general cargo.

A principal objection to the wool industry withdrawing from the Conference and developing a specialised service is that, since the Conference lines need to generate a certain revenue to cover costs and profits, withdrawal of wool would mean that rates for other commodities would have to be raised to make up the lost revenue. This is to assume that:

- (i) Profits above those required to maintain the existing Conference service are not being generated currently by the Conference lines.
- or (ii) Other commodities currently are not subsidising the freight rate for wool.
- or (iii) The shipping companies in the Conference cannot adjust their ship numbers and types in the medium and long term.
- or (iv) The current Conference service that includes wool is the optimal service from the point of view of the national interest.

The changes in freight rates over the past decade could imply that meat and dairy products may be subsidising the freight rate for wool. However, the reality of such a situation would depend on the equity of the base rates assumed in the 1965 year. If such cross-subsidisation of rates is occurring due to the threat of alternative shipping services, then the removal of wool from the Conference could result in the long term in lower freight rates for the other cargoes.

Even if cross-subsidisation of rates is not occurring in favour of wool, the need to generate extra revenue from other commodities given a withdrawal of wool from the Conference may only be true in the short term. As the Conference service adjusted to its new balance of products, such a need could diminish. In fact, in the long term, if wool could be carried more efficiently and at lower cost by an alternative service, and the Conference adjusted its service to meet the ensuing lowered demand for northbound space, the national interest may well be served best. The main consideration here is the balance of trade between New Zealand and Europe.

The much larger liner space requirement on northbound than on southbound voyages is illustrated in a previous study which reported that in 1965 unutilised southbound space totalled 35 million cubic feet, some 35 per cent of the total southbound space [12]. As a result of this it was reported that about 30 per cent of all ships servicing the northbound liner trade arrived in New Zealand empty.

It is difficult to extract statistics on the space imbalance from currently published statistics in New Zealand. This is because most New Zealand import/export transport statistics are derived from ships' manifests, where tonnages can be reported in either weight or measurement tonnes⁴.

However, in an attempt to assess the container traffic that New Zealand ports can expect to handle by 1980 and 1990, the New Zealand Ports Authority reports projections that can be used to gain further insight into the northbound/southbound shipping space imbalance for all containerisable cargoes moved in or out of New Zealand [13]. These projections assume such commodities as oil, timber, fertilisers, cement etc. will continue to be shipped in bulk and exclude certain machinery and construction material. The projected flow of other commodities was estimated on the basis of transport statistics of imports and exports during the 1950 to 1971 period. These projections were then revised in the light of comments from producer boards, manufacturers' federation etc. The Ports Authority's revised projections of all New Zealand exports and imports that could be shipped in containers are shown in Table 5. It should be remembered that these figures presented by the Authority are estimates only. An important aspect of the data in Table 5 is that imports of manufactured goods and some raw materials are expected to decline. This projection may be open to question. Nevertheless, the projections used appear to be the most authoritative currently available.

⁴ A measurement tonne is usually regarded equivalent to 40 cu.ft. of cargo.

TABLE 5

Estimates of Imports and Exports of
Containerisable Products, 1980 and 1990

Exports	1980 (tons)	1990 (tons)
Dairy Produce	660,000	827,300
Meat and Meat Products	1,062,000	1,201,000
Wool	399,000	474,000
Timber Products	873,000	1,550,000
Fruit and Crops	241,600	317,000
Manufactures etc.	650,000	750,000
<hr/> Total <hr/>	<hr/> 3,885,600 <hr/>	<hr/> 5,119,300 <hr/>
Imports		
Merchandise	65,000	65,000
Timber Products	40,000	40,000
Fruit and Crops	147,000	166,000
Materials, Manufactures	1,079,000	916,000
<hr/> Total <hr/>	<hr/> 1,331,000 <hr/>	<hr/> 1,187,000 <hr/>
Export tons per ton of imports	2.92	4.31

Source: New Zealand Ports Authority [13] , P9.

Some items reported in Table 5 were only considered moderately suitable for containerisation (e.g. tallow, timber products, and fruit and crops). If these cargoes are excluded the export/import weight imbalance falls to 2.38 for 1980 and 3.26 in 1990.

But what of the smaller New Zealand - Europe trade?

Estimates of tonnages of cargoes suitable to be shipped in containers in the New Zealand - Europe trade were extracted from the Ports Authority Study and are shown in Table 6. Also shown in Table 6 are the number of containers required for the movement of each cargo.

TABLE 6

Projected Tonnages of Cargoes Suitable for Container
Shipment in New Zealand - Europe Trade

Exports	1980		1990	
	tons	no.of containers	tons	no.of containers
Dairy Produce	122,000	6,971	105,800	6,046
Meat and Meat Products	494,700	51,000	557,400	57,464
Wool	283,500	31,500	336,800	37,422
Fruit and Crops (peas, beans & seeds only)	37,400	2,089	45,400	2,536
Total	937,600	91,560	1,045,400	103,468
Imports				
Materials, Manufactures Merchandise	539,500 30,800	41,500 1,760	393,900 30,800	30,300 1,760
Total	570,300	43,260	424,700	32,060
Export tons per ton of imports	1.64	2.12	2.46	3.23
Export tons per ton of imports (excluding wool)	1.15	1.40	1.67	2.06

Source: Adapted from New Zealand Ports Authority [13] .

Table 6 shows that the export/import imbalance in container movements between New Zealand and Europe is expected to widen between 1980 and 1990 from 2.12 to 3.23. If wool were removed from these projections these figures would fall to 1.40 and 2.06; but the trade would still be imbalanced by container numbers and by weight. Some reduction in this imbalance may be

achieved with the further integration of container services from Australia and New Zealand to Europe. This would be due to an opposing imbalance in the Australia to Europe service where 1 in 4 containers travel empty on the northbound leg. Nevertheless, it is not likely that a totally integrated service could be developed for both Australia and New Zealand without considerable cost.

In summary, withdrawal of wool from the Conference could result in higher freight rates for other cargoes in the short term; in the longer term it is likely that adjustments in the service would take place, so offsetting the need for higher rates. What the above suggests is that the benefit to New Zealand of a Conference service with or without wool should be fully investigated.

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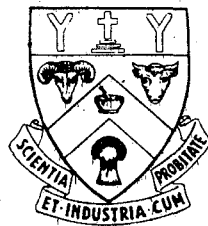
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