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THE CONTROL OF SHIPPING IN CANADIAN  
SEABORNE BULK TRADES

by

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## Abstract

As part of the negotiation of a trade contract, commercial buyers and sellers of goods in domestic and international trade must agree on shipment terms. Shipment terms fix the responsibility for the costs and risks of carriage between the two parties.

The basic objective of this thesis is to describe the factors which influence the decision of Canadian trading firms to exercise responsibility over the ocean shipping arrangements in their trades. There are two secondary objectives. The first is to describe some of the advantages and disadvantages associated with the control of shipping by Canadian trading firms. The second is to provide some indication regarding the extent of Canadian participation in the control of shipping in Canadian ocean borne trade.

The scope of the thesis is restricted to dry bulk commodity trades utilizing deep-sea shipping. These commodities account for nearly 90 per cent of Canadian exports and together with crude petroleum account for nearly the same percentage of imports.

Many factors influence the control of shipping in Canadian deep sea trades. The very first factor which must be analyzed is whether the Canadian trading firm has the option to do so. In a free market situation, trade negotiations between two parties are conducted on a commercial basis with a minimum of interference from government authorities. This applies to the control of shipping as well as to other aspects of trade. However, Canadians trade with many countries where governments do exercise a considerable deal of influence in trading and shipping matters. Trade may be conducted with foreign government

trading agencies who insist on controlling shipment. In addition, foreign governments may have imposed direct legislation, commonly referred to as flag discrimination, which reserves a certain proportion of trade or type of cargo for national carriers. These can favour control by the foreign trading counterpart.

Canadian trading firms may also not have the option to participate in the control of shipping in trade with firms which is conducted on a commercial basis. The relative size and bargaining power of the other party may be such that the Canadian trader has no chance of pursuing the issue.

If the control of shipping is a viable option for a Canadian trader, the intensity with which the opportunity is pursued is basically the tradeoff between benefits and risks. A trading firm can benefit in several ways through the control of shipment. If cost savings can be achieved through Canadian control, the net back to the trader can be improved or the commodity may be more competitively priced. Cost savings may be achieved through chartering policies, through economies of scale in shipment size, by reducing port time and costs and by better coordinating the shore-ship interface.

The trading firm may also realize marketing advantages by controlling shipment. These relate principally to the service aspect. The Canadian trader may make life easier for the foreign party by assuming responsibility for the shipping arrangements.

Risk is a vital consideration which strongly influences the policy of a firm with respect to the control of shipping. Involvement in ocean shipping entails some risks a firm must deal with. Common risks associated with shipping include rate fluctuations, availability of shipping

and demurrage.

The negotiation of the terms of shipment is a vital part of every trade contract. The individual trading firm must weigh in the balance the benefits and risks of controlling shipment. Evidence gathered in the course of this thesis indicates that the position of most Canadian trading companies is well thought out in regard to the control of shipping. When the option to control shipping is available, Canadian firms act in their own best interests.

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Finally, my thanks to Shesh for seeing this thesis through with me.

## Chapter 1

### INTRODUCTION

As part of the negotiation of a trade contract, commercial buyers and sellers of goods in domestic and international trade must agree on shipment terms. Shipment terms fix the responsibility for the costs and risks of carriage between the two parties. In international seaborne trade, the negotiation over shipment terms is usually the means by which the parties will allocate responsibility for the arrangement and cost of ocean shipping. The buyer and seller are normally responsible for the arrangement of carriage in their respective countries. However, ocean shipping is the middle step of the international physical distribution process and both parties to the trade have the possibility of assuming responsibility over it.

Many firms are engaged in trading. These companies are involved in a variety of commercial environments. Yet all must deal with the question of fixing responsibility for the carriage of their traded goods. In trades which utilize ocean shipping, this requires determining whether or not they will arrange and control the ocean shipping.

### OBJECTIVE OF THE THESIS

The basic objective of this thesis is to describe the factors which influence the decision of Canadian trading firms to exercise responsibility over the ocean shipping arrangements in their trades. From this analysis, general principles will be developed which are applicable over the wide range of commercial environments which apply to Canadian trading firms.

There are two secondary objectives. The first is to describe some of the advantages and disadvantages associated with the control of shipping

by Canadian trading firms. The second is to provide some indication regarding the extent of Canadian participation in the control of shipping in Canadian ocean borne trade.

### SCOPE OF THE THESIS

The research base for the thesis has been limited to a part of Canadian ocean borne trade. This thesis will analyze those commodities, other than petroleum, which trade in sufficient volume to utilize full vessels or a large part of cargo capacity on vessels other than regularly scheduled conference liner service. The shipping which is utilized for these commodities is usually chartered. These commodities largely fall into the classification of dry bulk commodities. These include iron ore, coal, grain, forest products, sulphur, potash, bauxite, phosphate rock, copper concentrates and other assorted non ferrous ore concentrates. Due to Canada's trade structure, most of these dry bulk commodities are exported. Only bauxite and phosphate rock are imported into Canada via ocean shipping.

These bulk exports are usually transported in vessels that are not engaged in a regularly scheduled common carrier service between two points. Rather, vessels which have been chartered off the world market under a variety of contract terms are the principal carriers of these commodities.

The main focus of this thesis is the deep sea trade. However, the topics covered in this thesis are applicable to coastal and lake shipping with the United States.

## MAGNITUDE OF CANADIAN DRY BULK COMMODITY TRADE

Canada ranks as the third largest exporter in the world of dry bulk commodities. Overall, the country is tenth in terms of world seaborne trade.<sup>1</sup> In 1976, Canadian international waterborne traffic exceeded 180 million tons.<sup>2</sup> In that same year, deep sea exports totalled nearly 80 million tons. Ninety per cent of these deep sea exports were accounted for by dry bulk commodities.<sup>3</sup> Crude oil is by far the largest single oceanborne import commodity for Canada.

Iron ore is the major Canadian dry bulk commodity exported. In 1978, 35 million tons were exported.<sup>4</sup> A large percentage of this, approaching 50 per cent, is shipped to the United States, mainly on the Great Lakes. The remaining amount is exported primarily to Western European countries. Iron ore is mined in Quebec and Labrador regions of eastern Canada. It is shipped from the ports of Sept-Iles and Port Cartier on the northern shore of the St. Lawrence River.

The second largest group of dry bulk commodities exported from Canada is grain and grain products. In the 1977-78 crop year, exports were 21,702,000 metric tonnes.<sup>5</sup> Seaborne trade in forest products is close behind grain. In the peak year of 1973, over 18 million metric tonnes were exported.<sup>6</sup> This peak level in 1973 was matched again in 1979. Whereas grain is exported from both coasts of Canada relatively evenly, the forest products trade is dominated by exports from the province of British Columbia.

Coal is another commodity exported in large volumes. Prior to 1970, the coal export trade in Canada was dormant. The 1970's saw rapid growth in coal exports from the West Coast primarily to Japan. In 1978, nearly 15 million metric tonnes were exported.<sup>7</sup> Growing offshore demand will con-

tinue to ensure that coal will be one of Canada's major commodity exports.

Sulphur and potash are two other dry bulk commodities exported in large volumes from Canada. These are also shipped primarily through the port of Vancouver. In 1978, they amounted to nearly 7 million metric tonnes.<sup>8</sup>

The port of Vancouver is the largest tonnage port in Canada and is second only to New York City in North America.<sup>9</sup> With the exception of iron ore, Vancouver handles a sizeable proportion of Canada's seaborne dry bulk commodity trade. In 1978, the port handled 45,210,000 metric tonnes of cargo. The seven principal commodities account for 33,197,000 metric tonnes.<sup>10</sup> Table 1.1 lists these commodities and their tonnages in 1978.

TABLE 1.1

PRINCIPAL DRY BULK COMMODITIES EXPORTED THROUGH VANCOUVER IN 1978

Coal	14,426	'000 metric tonnes
Grain	7,784	
Sulphur	3,967	
Potash	2,744	
Lumber	2,280	
Pulp	1,226	
Copper Ores	770	

Source: National Harbours Board, Port of Vancouver Statistics 1978.  
Vancouver: National Harbours Board, 1979.

Definition of Terms of Shipment

The terms of shipment fix the responsibility for the costs and risks of carriage between the two parties to a trade transaction. Table 1.2 presents a summary of the four major terms of shipment in seaborne trades.

The terms of shipment which are used in a trade transaction place the responsibility for arranging, controlling and paying for the various stages of carriage on both buyer and seller.

TABLE 1.2

MAJOR TERMS OF SHIPMENT IN SEABORNE TRADE

	<u>Cost of Carriage Paid by</u>	<u>Insurance arranged by</u>	<u>Where Delivery Takes Place</u>	<u>Property and Risk Passes From Seller</u>
FAS Free along side	Buyer	Buyer	Under ships hooks	When vessel is able and ready to load
FOB Free on board	Buyer	Buyer	When safely loaded	Over ships rail at port of loading
C&F Cost & freight	Seller	Buyer	On tendering the Bill of Lading to the buyer	
CIF Cost, insurance & freight	Seller	Seller		

Source: Alastair Watson, The Finance of International Trade.  
London: The Institute of Banking, 1976

The terms of shipment which are used in a trade transaction place the responsibility for arranging, controlling and paying for the various stages of carriage on both buyer and seller.

The two most common terms of shipment are f.o.b. and c.i.f. In short, the buyer arranges and pays the cost of ocean shipping under f.o.b. terms while the seller assumes this responsibility under c.i.f. terms. In the following paragraphs, a partial description of the responsibilities of buyer and seller under these terms in respect to the ocean shipping aspect is presented. This detailed description is taken from Incoterms 1953, a book published by the International Chamber of Commerce in Paris which is the standard universal text on trade terms.

Under f.o.b. terms, the seller assumes responsibility to:

Deliver the goods on board the vessel named by the buyer, at the named port of shipment, in the manner customary at the port, at the date or within the period stipulated, and notify the buyer, without delay, that the goods have been delivered on board the vessel. 11

Under f.o.b. terms, the buyer must:

At his own expense, charter a vessel or reserve the necessary space on board a vessel and give the seller due notice of the name, loading birth of and delivery dates to the vessel.

Bear all costs and risks of the goods from the time when they shall have effectively passed the ship's rail at the named port of shipment, and pay the price as provided in the contract.<sup>12</sup>

When a seller trades on c.i.f. terms, his responsibilities with respect to the shipping aspect is to:

Contract on usual terms at his own expense for the carriage of the goods to the agreed port of destination by the usual route in a seagoing vessel (not being a sailing vessel) of the type normally used for the transport of goods and any charges unloading at the port of discharge which may be levied by regular shipping lines at the time and port of shipment.

Load the goods at his own expense on board the vessel at the port of shipment and at the date or within the period of time fixed or, if neither date nor time have been stipulated, within a reasonable time, and notify the buyer, without delay, that the goods have been loaded on board the vessel.<sup>13</sup>

Under c.i.f. terms, the buyer must:

Receive the goods at the agreed port of destination and bear, with the exception of the freight and marine insurance, all costs and charges incurred in respect of the goods in the course of their transit by sea until their arrival at the port of destination, as well as unloading costs, including lighterage and wharfage charges, unless such costs and charges shall have been included in the freight or collected by the steamship company at the time freight was paid.

Bear all risks of the goods from the time when they shall have effectively passed the ship's rail at the port of shipment.<sup>14</sup>

#### METHODOLOGY OF THE THESIS

One objective of this thesis is to identify the factors which influence Canadian traders of dry bulk commodities to control the shipping arrangements of their trades. In spite of the potential importance for Canadians of control over shipping arrangements, little general information is avail-

able on the subject.

There is little specific information relating to the policies of Canadian dry bulk commodity trading firms with respect to terms of shipment in published material. In order to acquire sufficient information on the subject, an extensive interview program was undertaken with over sixty companies involved in dry bulk commodity seaborne trades. The information gathered centered on the nature of trades and on the terms of shipment used by the individual companies and the underlying reasons for using those terms. The interview program canvassed the major firms involved in the major Canadian dry bulk commodity trades as well as shipping companies and agents.

Additional information on shipping and the Canadian and worldwide trading pattern of the major commodities was gathered from a wide range of sources. This information was used to supplement and further develop the ideas gathered during the interview process.

As the subject matter was developed, separate categories of factors which influenced the control of shipping became evident. Within each category, an attempt was then made to identify the general principles that apply to the control of shipping for a wide range of trading firms and commodity trades.

#### OUTLINE OF THE THESIS

What factors influence Canadian traders to participate in the shipping of their trades? If given the opportunity to do so, the actions of all firms will be guided by commercial principles. The principal aim of firms is to maximize their return. The principles used to achieve this goal in international trading are cost reduction, marketing strategies and risk analysis. These principles are all applicable to the subject matter of this thesis.

Chapter 2 develops the principle of cost reduction opportunities in shipping and inland distribution as a factor influencing Canadian control of shipping arrangements. The transportation costs of bulk commodities usually comprise a large percentage of the final delivery cost. Since transportation costs account for such a large percentage of delivery costs, there is potential for sizeable cost reduction in this area. Shipping may not only be a significant percentage of the total transportation cost but it may also impact significantly on other transportation and distribution costs. Because ocean shipping can be arranged by either party to a trade, one party may be able to secure shipping at a lower cost than the other party. Chapter 2 analyses the opportunities and means for doing so. The primary focus is on shipping costs although the opportunities for cost reduction in inland distribution as a result of the control of shipping is discussed.

Chapter 3 concerns the marketing factors which influence the control of shipping. There may be opportunities for trading firms to gain advantages into particular markets by selling on a delivered basis.

There are many trades in which Canadian firms are unable to assume any responsibility for shipping. This is usually the result of government policies in foreign countries which protect their national shipping interests. These are referred to as flag discrimination policies. This topic is covered in Chapter 4.

Two case studies of major firms involved in Canadian dry bulk commodity trade are analyzed in Chapter 5. These case studies concern the institutional policies regarding the control of shipping by the Canadian Wheat Board and the Japanese steel industry. These case studies describe the factors which influence these institutions with regard to their policy

on the control of shipping.

Chapter 6 is the summary and conclusion of the thesis. The decision of individual firms to participate in shipping is influenced by many factors. The objective of this chapter is to summarize these factors and give some indication as to their relative importance.

#### LIMITATIONS OF THIS THESIS

The research into the extent of control over shipping by Canadian traders is merely a by-product of the research done in order to analyse the primary objective of the thesis. The same reasoning applies to the discussion of the advantages and disadvantages of the control of shipping. The analysis of these topics is perhaps brief but serves to evaluate the factors which influence the control of shipping.

Since dry bulk commodities are Canada's major oceanborne cargoes, only they have been analyzed in the context of this thesis. This does not preclude the application of several of the principles developed to the general merchandise trade which is usually shipped on regularly scheduled conference vessels. However, liner trades have not been studied.

Cost data has been used only to illustrate principles which apply to the subject matter. This treatment of the subject matter is not meant to be an analytical exercise.

Finally, the author assumes responsibility for all the interpretation of the subject matter and principles which are developed. At the request of several parties, not all specific details gathered in the interview process are footnoted in order to protect the confidentiality of the parties involved.

## Chapter 1 Footnotes:

1. "Canada Report," Seatrade, August 1979, p. 105.
2. Transport Canada, A Shipping Policy for Canada. Ottawa: Transport Canada, 1979, p. 4.
3. Ibid, p. 5.
4. Mining Association of Canada, Mining in Canada, Facts and Figures 1979, Montreal: Mining Association of Canada, 1979, p. 44.
5. Canadian Wheat Board, Annual Report 1977/78, Winnipeg: Canadian Wheat Board, 1978, p. 8.
6. H.P. Drewry (Shipping Consultants), Ocean Trade in Forest Products. An Economic Study #36, London: HPD Shipping Publications, August 1975, p. 8.
7. National Harbours Board, Port of Vancouver Statistics 1978. Vancouver: National Harbours Board, 1979.
8. Ibid.
9. "Canada Report", Seatrade, August 1979, p. 119.
10. National Harbours Board, Port of Vancouver Statistics 1978. Vancouver: National Harbours Board, 1979.
11. International Chamber of Commerce, Incoterms 1953, Paris: International Chamber of Commerce, 1965, p. 24.
12. Ibid, p. 25.
13. Ibid, p. 34.
14. Ibid, p. 38, 40.

## Chapter 2

THE INFLUENCE OF COST REDUCTION UPON  
THE CONTROL OF SHIPPING

Bulk commodities traded internationally are transported in three stages. These are:

- 1) inland distribution from sellers' point of production to port of shipment
- 2) ocean shipping to buyers' designated port of discharge
- 3) inland distribution to buyers' final destination

According to the individual trades, the physical requirements of distribution and costs of the three stages will vary. Each party is usually responsible for the distribution arrangements and charges within its respective country because of the familiarity each will have with local conditions. Either party may exercise responsibility over the middle link, the ocean shipping stage.

Several reasons related to cost may influence either the buyer or seller to assume responsibility for the shipping arrangements. One is the opportunity to secure shipping services at a lower cost than the other party could.

One party may also be in a position to reduce or better control the costs in their domestic distribution stage by exercising responsibility over shipping arrangements.

The motivation to reduce or control the costs of transport and distribution occurs in all three stages of the distribution process. Because of the interactive nature of the three stages of international distribution, the costs of all three stages may be influenced by the question of control over responsibility for the shipping stage.

This chapter evaluates the desire for cost reduction as the motiva-

tion for the control of shipping in Canadian dry bulk commodity trades. The first section will analyze how cost economies in shipping may influence a buyer or seller to control the shipping arrangements. The latter portion of the chapter is devoted to evaluating the effect that control over shipping arrangements has upon the cost of either party's inland distribution responsibilities and costs.

### COST REDUCTION IN SHIPPING

The trade of Canadian originated dry bulk commodities involves some very large shipment sizes. Iron ore and coal regularly move in vessels over 100,000 dwt and sulphur, potash and forest products in vessels up to 50,000 dwt. Grain shipments are commonly transported in vessels between 15,000 and 35,000 dwt. It is obvious that these major Canadian bulk commodity exports move in sizeable shipment lots - in many cases the entire vessel is transporting one consignment.

Shipping costs can be reduced in four ways.

- 1) through charter terms
- 2) by increasing the size of individual shipments
- 3) by reducing vessel time in port
- 4) by minimizing vessel ballast voyages.

### Chartering Terms and Their Effect on the Cost of Shipping

Different methods of chartering for shipping services are available and influence freight rates for identical vessels. The five major charter arrangements are bareboat charters, time charters, consecutive voyage charters, contracts of affreightment, and single voyage charters. In a time charter, a shipowner hires out his vessel for a specific length of time. For a consecutive voyage charter, an owner agrees with a charterer to provide a specific vessel to move a specific quantity of cargo on a repeat voyage basis. The contract of affreightment does not specify the

vessel but the owner guarantees to make a fixed amount of tonnage available to move a fixed quantity of cargo at a fixed rate.

In the single voyage charter, an owners agrees to use a specific vessel to transport a fixed amount of cargo from a specific loading port to a specific port of discharge. All fees in the movement are the shipowner's responsibility. The bareboat charter is nearly the opposite. Under a bareboat charter, the charterer effectively becomes the owner of the vessel, being responsible for crews, maintenance and all other costs. This is usually a longer term arrangement.

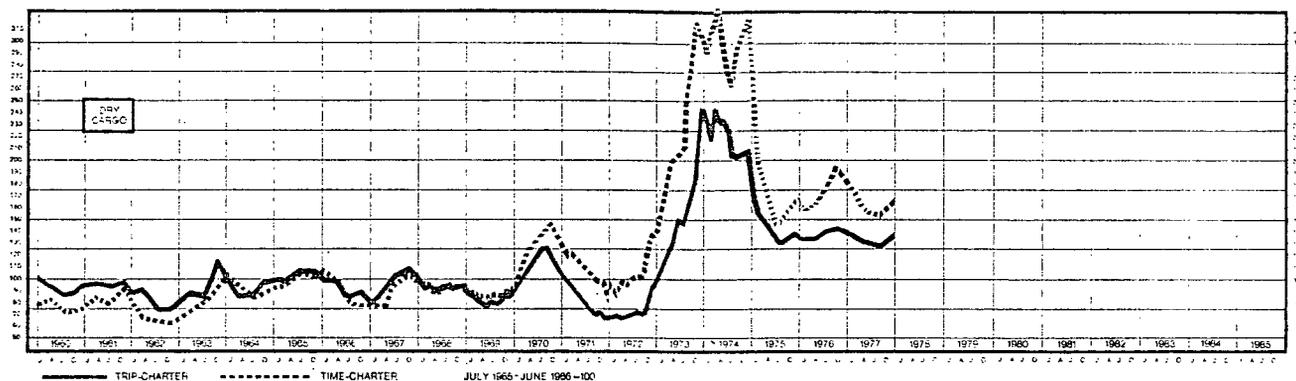
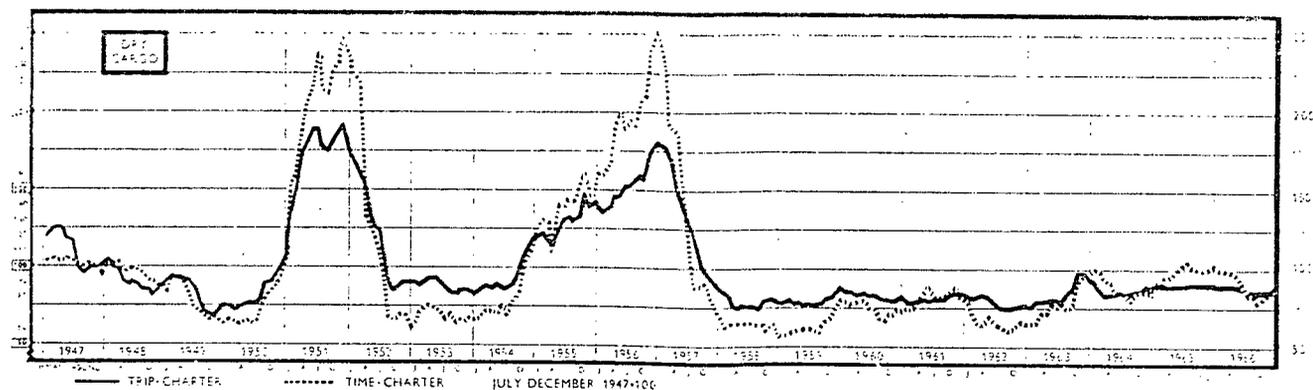
In general, longer term charters tend to reflect more closely the actual cost of operating a vessel. Shorter term charters are influenced by the current world market and the trading patterns the vessels will be engaged in. Rates on short term charters often deviate widely from long-run costs reflecting the current state of demand and supply in world shipping markets.

Illustration 1 gives an indication of the fluctuation in shipping markets since the end of the Second World War. The table illustrates only trip and time charters. Trip charters are a variation of voyage charters. It can be seen that the market fluctuates widely, especially in times of international crisis. The illustration does not contain a graph representing voyage charters but one can assume it corresponds clearly with the trip charter market.

The state of the world shipping market will determine if rates are higher for longer term charters versus short term charters. Thus, if one party to the trade transaction has a vessel under some sort of long term charter, it may or may not be at a lower rate than what could be obtained on the spot market at that time. If the rate for short term charters is higher, the party with the vessel under long term charter will be able to

## Illustration 1

## Trip and Time Charter Rate Variation 1947-78



Source: Norwegian Shipping News, No. 2A, 1978, p. 104.

transport the commodity at a lower out-of-pocket cost. If the rate for short term charters is lower, the party with the vessel under long term charter will not be able to transport the commodity at a lower cost.

A trading firm will charter vessels under long term contracts only if a base cargo over the period of the charter is guaranteed. By chartering a vessel for a period of time, the chartering party gains a number of advantages. The biggest one is that a freight rate is assured over some period of time. This eliminates a lot of the risk associated with

chartering short term on the world market. The short term market will fluctuate with political crises and will also tend to synchronize with the international trade cycle.<sup>1</sup>

Another advantage gained by long term charters is the use of the same vessel over the period of the charter. Many trades require specialized vessels. The modern vessels in the coal or forest products trade are only one example. This will be elaborated on later in this chapter.

The control of shipping in a trade transaction will be influenced if one party has a vessel under long term charter. The long term chartering arrangement may give one party the opportunity to provide lower cost ocean transport. Another strong factor is that the charterer of a vessel under long term charters will seek to keep his vessel fully utilized. This may be desirable even in situations where his costs are higher than those available in the short term market. The obvious example of this situation is the unpleasant experience of MacMillan Bloedel during the 1970's.

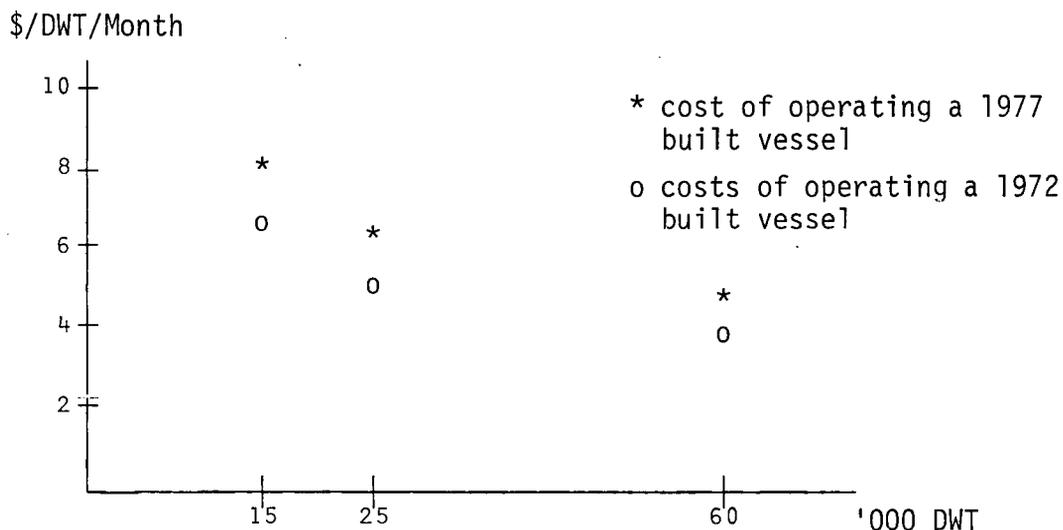
#### Cost Reduction by Increasing Shipment Size

Shipping costs can be reduced by increasing the size of individual shipments to take advantage of economies of scale. In dry bulk trades, where commodities are usually transported in shipload lots, larger vessels may be used to achieve economies of scale. As carrying capacity increases, vessel costs per ton decrease because of economies of scale in construction and operation. Figure 2.1 illustrates the capital, operating and voyage costs to the shipowner of three sizes of dry bulk carriers in 1978.

The rates shipowners charge for shipping services may and will vary from the actual costs but the economies of scale are nevertheless reflected, especially in time charters. For the purposes of this analysis, rates will

Figure 2.1

## 1978 Dry Bulk Carrier Costs



Source: H.P. Drewry (Shipping Consultants), The Operation of Dry Bulk Shipping, Economic Study #71, January 1979, p. 34.

tend to closely approximate costs.

There are two ways in which to increase the size of the individual shipment and utilize a larger vessel. First, the commodity can be arranged to be transported in a larger volume. Secondly, additional cargoes may be combined with the primary shipment to utilize a larger vessel.

In order to ship a commodity in larger lots requires cooperation and flexibility by both parties to the transaction. A single 10,000 ton sale of potash will remain as such. However, if the sales contract is for a larger amount to be delivered over a period of time, the opportunity is available for the economies of scale in shipping to play a role in determining the size and timing of shipment. A contract to supply one million tons of coking coal to a Japanese steel mill over a one year period gives ample opportunity for shipment size and shipping costs to be evaluated. The shipment size and vessel used will reflect the cost of

shipping as a means to minimize the total distribution cost. The delivery requirements of the buyer, production capabilities of the seller, the availability of storage space, the ability and cost of the distribution system and inventory carrying costs all influence the optimal shipping lot size.

There is a correlation between shipment size and the value of the commodity. Expensive mineral concentrates such as copper and zinc simply do not move in 50,000 ton shipments. It is more economical to transport these items on a regular basis than to accumulate large quantities for a single shipment in order to reduce the ocean shipping costs. Dollars on freight saved are largely lost in inventory carrying costs, cash flow and customer preference considerations. For many concentrate buyers, a 50,000 ton shipment would represent close to one year's supply.

The cooperation between buyer and seller to increase shipment size to reduce freight costs does not in itself favour the control of shipping arrangements by either party.

Cargo consolidation is an effective means of reducing shipping costs because larger vessels may be utilized. Depending upon the trade and market, either party or both may realize the opportunity to reduce shipping costs through cargo consolidation. The ability to do so and reduce shipping costs strongly influences which party will exercise control over the shipping arrangements.

There are two methods to consolidate cargoes and utilize a larger vessel. In the first case, a seller or buyer may consolidate similar cargoes from their separate contracts. If a Canadian seller of a particular commodity has a number of contracts to a geographical area which need to be shipped, these commodities can all be shipped on the same vessel;

subject to technical considerations such as vessel size and port draft, etc. This will allow a larger vessel to be utilized and reduce the cost per ton of shipment. The separate contracts need to be within a geographical area because the cost savings associated with the larger vessel have to be traded off against the steaming distance to additional ports. It would not be economical to charter a vessel and load it with consolidated cargoes, half of which will go to the Far East and the other half to Western Europe. The additional distance which the vessel will travel more than outweighs any cost savings associated with utilizing a larger vessel.

To illustrate the potential cost reduction arising from the application of this principle, an example will be worked out. A Canadian sulphur exporter has four separate contracts to deliver 14,000 tons of sulphur to buyers in Brazil. A number of shipping options are available. Each contract can be shipped on a separate vessel, they can all be shipped on a vessel of the 60,000 dwt class or there can be various intermediate combinations. Table 2.1 compares the delivered c.i.f. price of the sulphur shipped individually and consolidated together. A reduction of 7.3 per cent is achieved through cargo consolidation.

A second means of consolidating cargoes to utilize a larger vessel is to seek out cargoes to ship on behalf of other parties. If the party which is controlling the shipping arrangements on the primary trade is able to locate additional cargoes, the delivered price of the primary cargo will be reduced in a manner similar to Table 2.1. There is also the possibility that the party may be able to make profits from the additional cargoes.

Assume that a Canadian sulphur exporter has two 15,000 ton contracts

Table 2.2  
DELIVERED C.I.F. PRICE COMPARISON FOR TWO SHIPPING OPTIONS

Timecharter rates for dry cargo vessels - April 1979

10 - 19,999 dwt (15,000 dwt)	\$ 7.50/dwt/month
20 - 34,999 dwt (27,500 dwt)	\$ 6.10
35 - 49,999 dwt (42,500 dwt)	\$ 4.70
50 - 69,999 dwt (60,000 dwt)	\$ 3.75

Vancouver - Brazil loading, steaming and discharge time approximately one month. Therefore, freight rates are calculated based on the above timecharter rates.

Assume 14,000 tons of sulphur can be shipped on a 15,000 dwt vessel and 56,000 tons on a 60,000 dwt vessel. Each ton therefore bears 1 1/14 (1.0714) of the freight rate.

$$1.0714 \times \$7.50 = \$8.04$$

$$1.0714 \times \$3.75 = \$4.02$$

	14,000 ton shipment	56,000 ton shipment
Vancouver f.o.b. price	\$47.00	\$47.00
Freight	8.04	4.02
Brazil c.i.f. price	<u>\$55.04</u>	<u>\$51.02</u>

Reduction in c.i.f. price by utilizing larger vessel

$$\$55.04 - \$51.02 = \$4.02$$

$$\$4.02 \div \$55.04 = 7.3\%$$

Note: This example excludes bunker costs which are incurred by the charterer over and above the timecharter cost of the vessel. For the purpose of this example, the cost of bunker fuel used per ton of cargo carried is assumed to be constant although in reality economies of scale exist in favour of larger vessels.

Source: Charter rates from H.P. Drewery, Shipping Consultants Ltd., Shipping Statistics and Economics. London: HPD Shipping Publications, May 1979.

to Brazil and wishes to utilize a 60,000 dwt vessel which will carry approximately 56,000 tons of cargo. The exporter will be seeking an additional 26,000 tons of cargo to Brazil. If these can be found, the reality of using the larger vessel will reduce the sulphur exporter's shipping costs to Brazil.

The ability of one party to a contract, either seller or buyer, to consolidate cargoes and reduce shipping costs by utilizing a larger vessel strongly influences the control of shipping arrangements in Canadian dry bulk commodity trades. Evidence from first hand information suggests that this principle is one of the dominant factors, if not the most important, in determining whether the seller or buyer will exercise responsibility for shipping arrangements.

The ocean trade in forest products from British Columbia is an excellent example of Canadian exporters consolidating cargoes to utilize larger, purpose built vessels. It is the major factor which explains the complete control of shipping of forest products by Canadian exporters. While forest products are not normally considered a bulk commodity, the nature of shipping practices in the Canadian forest products trade permits the designation to apply.

The British Columbia-Western Canada ocean trade in forest products consists of sawn lumber, plywood, pulp and paper. There are two major exporters of sawn lumber products, each with a shipping subsidiary: MacMillan Bloedel (Canadian Transport) and Seaboard Lumber Sales (Seaboard Shipping). Seaboard, in contrast to MacMillan Bloedel, is a consortium of 26 forest products companies. It was founded to sell and transport lumber to overseas markets. The major markets which utilize ocean shipping are the Atlantic Coast of the United States, Western Europe and Japan.<sup>2</sup>

The markets are characterized by multiple buyers, typically lumber yards, who purchase small quantities. An individual order will rarely exceed 15 tons.

The large base volume of cargoes generated by orders from multiple small buyers in a geographic region enables the Canadian lumber exporters to consolidate cargoes. The opportunity for Canadian exporters to combine shipments and reduce freight charges by utilizing large, purpose built vessels is the key to their marketing strategy of selling delivered in off-shore and eastern U.S.A. markets. More than anything else, consolidation explains the control of shipping in the Canadian forest products trade.

Canadian Transport and Seaboard Shipping each employ a mix of vessels on long term charters and voyage charters. Aside from consolidating their own cargoes to utilize their fleets of vessels, each actively seeks out other cargoes to supplement "in-house" cargoes. These include forest products for other firms and mineral concentrates. Copper concentrates make ideal cargoes, because of their small lots, generally 5,000 tons, and their suitability as bottom cargoes.

Canadian grain traders selling non-Board grains and assorted grain pellets to Japan exercise control over shipping as a result of their opportunity to consolidate small lot orders. Non-Board grain, rye, rapeseed and flaxseed, are grown and marketed without the involvement of the Canadian Wheat Board. Sales are made by three Canadian grain trading firms to many small Japanese crushing mills through Japanese trading houses who act as importing agents. Sales to individual customers in Japan are in the 300-2,000 ton range.<sup>3</sup> The consensus of exporters is that the ability of Canadian exporters to consolidate cargoes and obtain a lower freight charge is the reason for C&F sales and hence, the

Canadian control of shipping.

Table 4.2 lists the multiple seeds and pellets and their ports of discharge, though not individual buyers and lots, in a shipment by Cargill Grain Co. (Canada) to Japan on the vessel "Ogden Tiber" in February 1979. It illustrates the consolidation necessary to utilize a vessel of 30,000 dwt in the non Board grains trade.

Table 2.3

MULTIPLE SEEDS AND PELLETS SHIPMENT LIST TO JAPAN  
LOADED ON VESSEL "OGDEN TIBER" IN VANCOUVER, FEBRUARY 1979

<u>Commodity</u>	<u>Tons</u>	<u>Ports of Discharge</u>
Canada Rapeseed	10,336	Hakata, Kobe, Nagoya
Rye	5,786	Hakata, Kobe, Nagoya
Grain Screening Pellets	1,197	Hakata, Kobe
Dehydrated Pellets	7,979	Hakata, Kobe, Nagoya
Suncured Pellets	2,667	Hakata, Nagoya

Source: Cargill Grain Canada Ltd., Vancouver, January 1979.

Canada ranks among the world's largest exporters in both sulphur and potash. In 1978, 3.967 million metric tonnes of sulphur and 2.744 million tonnes of potash were exported through the port of Vancouver.<sup>4</sup>

A foreign buyer will often purchase both sulphur and potash from Canadian exporters. This is due to the fact that both commodities are used in fertilizer production and a single purchasing agent is responsible for purchasing both commodities. These foreign buyers usually specify f.o.b. terms of shipment so that they can combine the two commodities on a single vessel. This is often done by buyers in Australia, South Africa and India.

### Cost Savings Through Reductions in Vessel Port Time

A reduction in the time a vessel will spend in port means that it will have more opportunity days in which to haul cargo and generate revenue. Every shipowner would ideally seek to have his vessel loaded and at sea all of the time. While this may not be realistic, owners do seek to ensure their vessels are employed to the maximum extent possible.

Vessels which are chartered under voyage or single trip charters and contract of affreightment terms are allowed a certain number of days to load and unload. Port days allowed is influenced by the type of cargo, loading gear both on the vessel and on shore and the general conditions with respect to congestion and efficiency at the ports of call. This will influence the charter terms and costs. However, there is little an individual charterer can do to reduce port time and thus reduce the cost of shipping.

The longer term time charters and bareboat charters offer the charterer greater potential to undertake action to reduce port time. This is because the charterer is responsible for making as efficient use of the vessel as possible and can undertake action by which to do so.

There are two possible ways of reducing a vessel's port time. The first is to employ specialized vessels which will permit reduction in loading and unloading times for a given cargo. This is especially relevant if the vessel's loading gear will handle the cargo. If shore based facilities are used to load and unload the cargo, as is the normal case in the loading of the export dry bulk commodity trade, then the vessel's gear is not a factor in loading time.

The British Columbia forest products trade is a good illustration of the use of specialized vessels to achieve reductions in vessel port time.

The introduction of modern purpose built vessels for the B.C. forest products trades has led to cost savings through significant productivity increases in loading and discharging. In the 1950's, Liberty ships were the standard vessel in the B.C. ocean trade. Lumber was hand stowed and pulp and newsprint were handled four bales at a time. The loading time for a 10,000 ton vessel was about two weeks.<sup>5</sup>

The modern forest products vessel is now in the 35,000 to 50,000 dwt range. Improvements have been made in cargo gear, hold layout and cargo packaging to permit vastly reduced loading and discharging times with far fewer labourers. This has enabled modern vessels to be loaded or discharged in three to five days.

The second way of reducing a vessel's port time is to reduce the number of ports at which the vessel will call. This can be accomplished by making a conscious effort, on the part of the seller, to deliver into a limited number of ports. The buyer, if he is responsible for arranging the shipping, can arrange for his vessel to call at a smaller number of ports. In either case, time will be saved as a result of the reduction in ports of call and in shipping, time is money. In today's charter market, a vessel's time is worth between \$4,000 to \$15,000 per day based on current charter rates.<sup>6</sup>

In making an effort to reduce the number of ports of call, it is necessary to consider the implications placed upon the other party to the contract who may be forced to change their pattern of exporting or delivery. For example, will a European customer of Canadian copper concentrates take delivery in Bremen rather than in Hamburg so that the vessel will not have to make an additional port call in Hamburg? This entails looking at the distribution system within West Germany to see how the buyers

will respond to the possible change in port of discharge.

In the recent past, Seaboard Lumber Sales redesigned its inland delivery system in the United Kingdom. The major aim of the reorganization was to enable ports of call in the U.K. to be reduced from 27 to 2. In conjunction with this changeover, Seaboard undertook to sell on a delivered customer's door basis. The savings in vessel costs more than offset the higher costs of longer delivery distances by truck to all parts of the country from the ports of Tilbury and Liverpool.<sup>7</sup>

The reduction of shipping costs through port reduction is applicable mainly to shippers who ship on a longer term continuing basis and utilize some sort of long term vessel charter. Savings in vessel port costs serve to influence the control of shipping and is able to achieve them by controlling the shipping arrangements. The possibility of doing so largely is dependent upon the trade and shipping practices. This factor tends to complement other factors rather than of itself being the strongest influence on the control of shipping arrangements by one party to a trade contract.

#### Cost Reduction in Shipping Through Backhauls

Cost reduction in shipping costs through backhauls is applicable to charterers who have chartered the vessel on the basis that they are responsible for securing the return cargo as well as the front haul cargo. These are normally timecharters or bareboat charters. Securing backhauls may enable fronthaul shipping rates to be reduced. It can also provide profit to the charterer.

If a firm, say a large exporter of a given commodity, has shipping requirements that require a certain number of sailings per year, a vessel may be chartered for a period of time. This provides the exporter with a

certain amount of stability in freight rates. The exporter is able to guarantee a cargo for every front haul. However, once the vessel has been unloaded of its primary cargo, it has to be sailed to its port of origin. If the vessel sails without a cargo in ballast, the front haul cargo must bear the cost of the round trip costs of operating the vessel. However, if a backhaul cargo can be secured, the fronthaul cargo may only have to bear the front haul costs.

In actuality, the securing of backhaul cargoes and the rates assigned to each cargo is very complicated. Suffice it to say that if a backhaul cargo can be secured, roughly identical vessel operating costs can be distributed over twice the tonnage.

The ability to secure backhaul cargoes is dependent upon the trading pattern in which the vessel is employed in as well as the type of the vessel. It also depends on the trading structure of countries in which the vessel will be serving.

Japan is one of the world's leading trading nations. Japan imports huge amounts of raw materials, processes them and exports manufactured goods. The shipping requirements of the raw materials is primarily for bulk carriers while manufactured goods are shipped on container ships. Bulk carriers are not able to secure backhauls from Japan because they are not suited to do so. Japan is the largest destination in the world for dry bulk carriers. It accounts for 35 per cent of the tonnage of the world's major bulk trades.<sup>8</sup> This means there is an enormous amount of tonnage which sail away from Japan in ballast.

In the spring of 1979, Seaboard Shipping put into service the first of two Roll-on Roll-off (RoRo) vessels of 43,000 dwt on the B.C. to Japan forests products trade. Seaboard introduced the special purpose carriers

for two reasons. The Ro-Ro concept enables lumber and forest products to be loaded in a shorter time with less handling. Port time is reduced by 50 percent compared with conventional vessels. Additionally, the vessels are suitable to carry Japanese manufactured products on the backhaul to B.C. and the West Coast of the U.S.A. Each ship can backhaul the equivalent of 1,000 20-foot containers or 3,500 cars.<sup>9</sup> The savings on outbound freight rates for forest products are estimated to be 10-20%, in spite of the higher cost of chartering the specialized vessel.<sup>10</sup> This is due to the backhaul cargo and revenues which Seaboard has generated.

Seaboard's vessels on the B.C. to U.S. East Coast route also make extensive use of backhauls to reduce the freighting costs on the outbound forests products traffic. The vessels are employed in either of the following manners.<sup>11</sup>

B.C. to U.S.E.C.	Forest Products
USEC to Japan	Coal, Grain, Scrap
Japan to B.C.	in ballast
or USEC to B.C.	phosphate rock

Seaboard gains considerable flexibility to display its long term chartered vessels on routes where backhauls will be obtained by virtue of the fact the company observes a rule of thumb that 65% of its shipping needs should be met by long term charters. When backhauls are not available out of a region, Seaboard will spot charter ships chartered for single voyages, thus relieving the need to service the trade with its vessels which are under long term charter. This minimizes ballast voyages for its ships under long term charter.

The control of shipping by one party to a trade may enable that party to obtain backhaul cargoes. In the event backhaul cargoes are carried, the party may be able to reduce the freight charges of the outbound cargo or make a profit from its involvement in shipping. The strategy developed

by a party depends on trade patterns and the charter term of vessel. Given the proper circumstances, backhauls can have a very favorable effect on the party which seeks them out.

The opportunity to secure backhauls is a pertinent factor influencing the desire to control shipping arrangements on the outbound cargo movements. While most of the examples in Canadian dry bulk commodity trades center on the forests products trade, where the pattern has been established for some time, new and changing markets present new opportunities.

One example was an effort by Kaiser Resources to sell coking coal on a c.i.f. basis to Brazil. Kaiser planned to charter a vessel which would enable it to backhaul Brazilian iron ore to a California steel mill. This pattern would have enabled Kaiser to land its coking coal in Brazil at a very attractive delivered price and perhaps make a profit on the return iron ore cargo. However, Brazilian interests were aware of this opportunity as well and used the Brazilian government's flag discrimination policy to supply the shipping on Kaiser's coking coal contract.<sup>12</sup>

#### COST REDUCTION IN INLAND DISTRIBUTION

The opportunity to control and reduce costs in the inland distribution stages of international deep sea bulk commodity trades is affected by the decision as to whether buyer or seller undertakes responsibility for securing the shipping arrangements. It is normal for both buyer and seller to arrange for the inland distribution arrangements in their home countries because of familiarity with local conditions. However, inland distribution must interface with shipping and the control of shipping arrangements may give the party the opportunity to coordinate this interface better.

This section will analyze the potential advantages that accrue to buyer or seller to better coordinate the inland distribution-shipping interface in their home country through the control of the shipping arrangements.

#### The Opportunities for Cost Reduction in Canadian Inland Distribution

The inland distribution process for Canadian bulk commodity exporters begins at the point of production and stretches to the port of loading. The control of shipping arrangements by Canadian exporters gives the opportunity for them to better coordinate their inland distribution system to interface with shipping.

If the foreign buyer is responsible for shipping arrangements, notification of the date of arrival and loading period of the vessel is given to the Canadian seller. First notification is usually at the time of sale or, in the case of a contract where delivery is spread out over time, a month in advance of the proposed sailing date. Subsequent notification is usually made 15 days prior to vessel arrival. Because the vessel arrival and loading time is within a range, the Canadian seller must have the shipment available at the port of loading to meet the vessel's earliest arrival date.

If the Canadian seller is responsible for shipping, there is sufficient flexibility to better coordinate the movement of the goods to meet the vessel's loading days. Because the seller is in full control of the shipping, up-to-the-minute information is available on the inward progress of the vessel. As the arrival date becomes more precise, the seller can firm up his inland distribution delivery date. Having this flexibility can mean significant cost savings in inland distribution. These cost savings can be achieved from the production to storage aspects.

An outstanding example of the coordination of the inland distribution-shipping interface is a large Canadian pulp exporter. The initial flexibility and cost savings are achieved in the production process. There are nearly one dozen varieties of pulp produced. The plant produces only two grades at a time. Since the company sells on a c.i.f. basis and is responsible for shipping, it is able to coordinate the production runs to produce the quantity needed to fulfill export contracts for particular vessel loading days. This results in longer production runs and cost savings through economies of scale in production.<sup>13</sup>

Flexibility is also gained to position inventory for shipment where storage space is cheaper. Because of the increased coordination made possible by the control of shipping, the opportunity exists to plan inland shipment dates to minimize the use of higher cost storage facilities. These are usually located in the port of shipment.

The control of shipping also provides the seller with more flexibility to deal with disruptive events in its inland production and distribution stage. A copper concentrate exporter was shut down by a strike. As a result, it was unable to supply the contracted tonnage requirement to meet the proposed shipping date. However, because it was controlling freighting, it could maintain flexibility with regards to the ship it would use until the exact vessel loading date was established. The anticipation of strike settlement and mining resumption also influenced the expected shipping tonnage. The foreign buyer, if he controlled shipping, would have been in a much less favorable position to deal with this situation because of being in a foreign country and the lack of inside information.

### The Opportunities for Cost Reduction - Foreign Inland Distribution

Foreign consumers of Canadian bulk commodities may desire to control shipping arrangements because of the opportunity for cost reduction in their inland distribution system. However, the opportunity for better coordination of the shipping-inland distribution interface afforded a foreign buyer by the control of shipping is reduced when compared with the opportunities made available to the Canadian exporter and their inland distribution-shipping interface. This is because the arrival date of the vessel in the port of destination is fairly well ascertained once the vessel has sailed regardless of which party has arranged for the shipping.

This does not mean that foreign buyers do not desire to control freighting because of the opportunities to better control their inland distribution systems. The largest Japanese steel companies provide an outstanding example that this can be an important reason. These companies have multiple mills. Nippon Steel has nine mills, the others two or three.<sup>14</sup> In addition, the steel making process requires multiple grades of iron ore and coking coal. There may be as many as five grades of iron ore and twice that number of coking coal used in the steelmaking process. One major reason why the Japanese are so adamant about controlling the shipping of these iron ore and coking coal imports is to be able to closely coordinate the import program with respect to mill requirements and inventory levels.

Nippon Steel's nine mills are all located on the coast. Since Nippon Steel's purchases are almost exclusively f.o.b., they have the flexibility to position arriving vessels containing different grades of iron ore and coking coal to the mills which require them. In contacts

with Japanese trading houses, it is evident that vessels carrying iron ore and coking coal sail to Japan without a named port of destination.<sup>15</sup> The vessel is given a port of discharge only one or two days away from Japan. The steel company thus has flexibility to monitor inventory levels and production requirements at all mills.

### RISK AND THE FIRM'S SHIPPING POLICY

Risk is a vital consideration which strongly influences the policy a firm adopts with respect to the control of shipping in their trades. This is because participation in ocean shipping may be risky for a firm.

In f.o.b. sales, the exporter is relieved of the risk for providing shipping service and the safe arrival of the cargo is a foreign port. Under c.i.f. terms, the exporter takes increased responsibility for the safe delivery of the product to a foreign port. This involves the risk of shipping, an unknown to many firms.

### Risks in Controlling Shipping

There are several different types of risks in shipping. The first is that the price may fluctuate. Shipping markets, especially those for chartered vessels, have been known to exhibit volatile movements, especially in times of crisis. Even in times of relative calm, shipping prices move.

The exporter who has quoted or is quoting a c.i.f. price may be in a vulnerable position if shipping prices move upward and the margin for shipping is exceeded. This is particularly true if the contract has been agreed upon and the exporter is short freight, i.e. still has to charter shipping space.

The exporter also bears a shipping risk in selling c.i.f. if a vessel

or shipping space is simply not available within the time period agreed to on the sales contract. The delay in shipping may force the seller to pay a penalty.

A risk particularly relevant to bulk shipping is demurrage. Demurrage is a payment made by the charterer to the shipowner when the vessel is delayed beyond its contracted loading or unloading period. The charterer may seek payment from the party which was responsible, i.e. port, terminal or consignee. However, collections to cover demurrage may be tedious, especially in foreign countries and a firm may go to considerable expense and effort to rectify the situation. This is true in Canadian trades to several regions in the Third World and influences Canadian traders to sell on f.o.b. terms to importers in these regions.

### Summary

The ability of one party to reduce the delivered cost through economics in international physical distribution is vital to the control of shipping. Overall, it appears that the ability to consolidate cargoes and increase shipment lots and utilize larger vessels has the greatest cost reduction potential. Furthermore, depending upon the trade pattern and the contractual basis by which the vessel is employed, the opportunities for backhauls may reduce fronthaul freighting costs.

While individual components of the distribution system offer the possibility of larger cost reduction potential than others, it should be stressed that the delivered price encompasses an accumulation of all components of the distribution system. Ocean shipping is an integral part of the system. In the final analysis, if cost reduction is of paramount importance, the control of shipping will rest with the party able to reduce costs by the greatest amount.

## Chapter 2 Footnotes:

1. B.N. Metaxas, The Economics of Tramp Shipping, London: Athlone Press, 1971, p. 184.
2. Mark Wilson, "Seaboard Ready for Ro-Ro's," Harbour and Shipping, December 1978, p. 20.
3. Personal interview with Mr. Paul Ericson, Vice-President, Cargill Grain Company (Canada) Ltd., January 1979.
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5. Personal interview with Mr. Dudley Darling, General Manager, Distribution, Seaboard Shipping, October, 1978.
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11. Peter J. Raven, Considerations in Selecting a Ro/Ro Forest Products Ship, Vancouver: Seaboard Shipping, September 1978.
12. Personal interview with Mr. Jack Cunningham, President, Cunningham Transportation, August 1978.
13. Personal interview with Mr. Chris Gale, Shipping and Distribution Manager, Prince George Pulp and Paper Co., July 1978.
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15. Personal interview with Mr. Yoshi Ogata, Manager, Metals Department, Marubeni Canada, July 1978.

## Chapter 3

MARKETING INFLUENCES ON THE CONTROL OF SHIPPING

Ocean shipping is one part of international physical distribution. Physical distribution, in turn, plays a supporting role to the marketing function of a firm. Marketing plays a vital part in attaining the goals which firms have set out to accomplish; namely profits, survival and growth and market satisfaction.<sup>1</sup> The strategy a firm employs in marketing is shaped by the characteristics of the products it is selling, the markets into which it is selling and the goals of the firm.

This chapter will examine the factors which motivate Canadian firms to undertake responsibility for the control of ocean shipping as part of its marketing strategy.

EXPORT PRICING

Export pricing refers to the financial terms of a trade contract. The four aspects of export pricing which a trading firm can vary to make the sales offer more attractive to a potential buyer are:

- 1) choice of currency in which to quote price
- 2) terms of shipment, i.e., f.o.b., c.i.f., etc.
- 3) method of payment offered, i.e., open account or letter of credit
- 4) credit<sup>2</sup>

The second aspect of export pricing, the terms of shipment, can make an appreciable impact upon the opportunity for making a sale if cost economies are realized in ocean shipping by one party. The opportunities for achieving cost economies in ocean shipping were discussed in the previous chapter. Because physical distribution, of which ocean shipping comprises a major component, is one of the largest cost elements in the delivered price of dry bulk commodities, a firm's international marketing

goals may be achieved through cost reductions in physical distribution.

### Product Pricing and International Marketing Goals

The pricing of a product in a market is difficult because it is dependent upon a complex web of cost, demand and competitive factors which are unique in various marketing regions. Cost reduction in physical distribution enables a firm to re-evaluate its product pricing with the purpose of furthering the attainment of the marketing goals the firm has set out to achieve in international marketing, commonly profits and/or growth. Based upon the factors which influence pricing into a certain market, the firm must decide to keep prices unchanged or to lower them as a result of cost reductions in physical distribution.

When a Canadian exporter sells c.i.f., cost reduction in physical distribution lower the costs of delivering a product into a market. By keeping the selling price unchanged, the exporter will realize a larger profit margin. If the firm elects to lower the selling price, the quantity demanded will increase. A lower selling price may open new markets or expand sales in existing markets. Overall profits may also increase even if the selling price is reduced because of a larger volume of sales. To do so, the contribution margin at the new selling price multiplied by the quantity sold must exceed the contribution margin at the old selling price multiplied by the quantity previously sold.

When a Canadian exporter sells f.o.b., cost reductions in ocean shipping are achieved and realized by the foreign buyer. The Canadian exporter can react to this situation in two ways if the extent of the cost savings which the buyer is realizing can be determined. In practice, this is easier said than done.

First, the exporter has the option to raise the f.o.b. price to off-

set any cost reduction the buyer may achieve in ocean shipping. The delivered cost to the buyer will remain unchanged. If this cost reduction is not available to other exporting firms in Canada and abroad, the quantity the buyer purchases will remain constant but the Canadian exporter will realize a higher profit margin on sales as a result of a higher f.o.b. price.

Secondly, the exporter can keep his f.o.b. price unchanged. Since the delivered cost to the buyer has been reduced, it follows that the quantity demanded will increase. The profits which the Canadian exporters will achieve again are larger because the quantity sold, at the same profit margin, is larger.

In reality, this theory may not be practical to implement. A number of constraints may prevent the Canadian exporter from adjusting prices in response to cost reductions in ocean shipping and other components of physical distribution in the short run.

Foremost, the sales contract and the shipping contract may be of different time horizons. The sales contract may be of one or two years duration while shipping services are contracted for on a single voyage basis. During this time, the cost of shipping may fluctuate due to market conditions. In this situation, the Canadian exporter may not have the opportunity to adjust prices in response to short run fluctuations in the shipping market.

Secondly, even if sales and shipping contracts were of similar duration, competitive conditions in markets may remove the option for Canadian exporters to price in response to cost reduction in ocean shipping and physical distribution. Canadian exporters may be under pressure to reduce prices in a market and reductions in shipping costs may have to be passed on to the foreign buyer.

Finally, the cost reduction achieved in shipping and other aspects of physical distribution may be required to offset price increases in other areas in order to maintain the existing selling price. If not, a higher selling price may make the product uncompetitive in certain markets.

#### THE SERVICE ASPECT OF THE CONTROL OF SHIPPING IN SALES PROMOTION

Many aspects of marketing other than price are important. Product quality and service provided by the seller to the buyer can be as important as price in making a sale. In international marketing, one such service which the seller can provide is the responsibility for the arrangement of ocean shipping.

One reason why Canadian exporting firms may desire to control shipping arrangements in certain trades and markets may be this service aspect. If by assuming responsibility for ocean shipping, the Canadian exporter can make life easier for the potential customer, the chances of achieving and maintaining sales may be enhanced.

In order to gain a better understanding of the marketing situations in which the control of shipping by Canadian exporting firms can be a service advantage, it is desirable to develop a profile of the markets and the importer-buyers where delivered sales are applicable.

#### Market Profile Where c.i.f. Terms are Advantageous

Markets for commodities differ around the world. In what markets and to what type of importer-buyer is the control of shipping by the seller a marketing service advantage? This assumes that the importer-buyers are free from political constraints which would otherwise limit the freedom of choice over terms of shipment.

Firm size. The first and key characteristic is the size of the importer-buyer in a market. Size must take into account both the volume of purchases carried by ocean shipping as well as the overall size of the importer-buyer. There is considerable advantage for firms importing substantial volumes of goods which utilize ocean shipping to have in-house shipping expertise. For those importer-buyers who import only small tonnages, the expense of acquiring and maintaining in-house shipping expertise may be unwarranted. The use of shipping agents and brokers is a partial substitute but cannot fully offset the lack of in-house expertise.

To these smaller size importer-buyers lacking in-house shipping expertise, a sales contract where the seller assumes responsibility for the shipping is preferred. Thus, a Canadian exporting firm can grasp a marketing service advantage by selling delivered. This applies whether the purchase is one time, long term or a series of continuous spot purchases.

To illustrate, consider the market for Canadian lumber exporters in the United Kingdom and Western Europe. The importer-buyers of lumber are normally lumber yards. These lumber yards vary in size but their average purchase does not usually exceed fifteen tons.<sup>3</sup> These lumber yards do not, as a general rule, have expertise in ocean shipping. A vital part of the marketing strategy of Canadian lumber exporters is to sell on a delivered basis. Indeed, at least one of the largest Canadian firms, Seaboard, is going one step further in the U.K. market by establishing an inland distribution system and selling on a delivered-buyer basis.<sup>4</sup>

Competitors' sales terms. A second characteristic is the selling practice with respect to other exporters into a region. This may or may not be related to the first point. If competing exporters are selling c.i.f.,

then a firm which is not may be compelled to do so in order to remain competitive in a market. If the firm chooses not to sell delivered, importer-buyers will find it convenient to purchase from those sellers who do.

This characteristic has prompted several firms to control the shipping arrangements and sell c.i.f.. Seaboard switched to a c.i.f. basis when other lumber brokers became involved in the shipping aspect and appeared as competitors to Seaboard's sales.<sup>5</sup> Over time, this policy evolved into a control of vessels as well through voyage and time charters.

Price compatibility for foreign buyers. A third factor about the market which influences sellers to control shipping from a marketing service viewpoint is the desirability of the importer-buyer to have a common cost basis to compare prices which are offered by competing sellers. If competing sellers all quote c.i.f. prices to a port suggested by the importer-buyer, price comparison is facilitated because all prices have a common basis. If, on the other hand, an importer-buyer receives f.o.b. price quotations from various sellers in different locations, considerable time, effort and money must be expended to convert the quotes into a common c.i.f. or delivered basis for comparison. This factor seems to be more relevant if a particular commodity or range of commodities can be supplied by a large or diffusely spread number of producers, i.e. forest products. It is also particularly applicable to smaller size importer-buyers.

A major chemical company in eastern Canada markets plastics, chemicals and explosives around the world on a f.d.m. (free delivery to mill) basis. The firm competes against other overseas suppliers as well as local producers in some markets. All suppliers quote prices on the same f.d.m.

basis. Commonality of sales terms for comparison purposes is important to prospective overseas importer-buyers and the decision to market on a f.d.m. basis reflects this.<sup>6</sup>

Specialized vessels. A fourth market characteristic which can encourage the control of shipping as a marketing service advantage is the ability of the seller to provide for a higher level of shipping service. This may take the form of frequency or of improved shipping methods, i.e. the use of specialized vessels.

Depending on the individual trade, the exporting firm may have vessels under employment which provide frequencies and specialized stowage and/or handling characteristics over and above what the importer-buyer could provide based on his individual requirements. Improved delivery frequencies permit the importer-buyer to reduce the shipment lot size. This in turn, reduces the level of inventory which must be carried. Specialized vessels are necessary in certain bulk trades to ensure proper handling of the commodities involved. The ability of the exporting firm to provide the frequencies and/or specialized vessels may be an importing marketing service advantage to a potential importer-buyer.

The export of molten sulphur by U.S. producers in the Gulf of Mexico is an outstanding example of the control of shipping by the exporting firms. European customers prefer sulphur in the molten form. To ship molten sulphur requires specialized vessels. The control of shipping by the exporting firms and their use of specialized tankers is a marketing service facilitating the sale of molten sulphur in the European market. It is unlikely that individual importer-buyers in Europe could arrange for ocean transport because molten sulphur tankers are scarce and a full tanker load would carry more tonnage than required by the individual

customer. Ocean shipping arrangements are best provided for by the U.S. exporting firms.

The vessels which transport Canadian forest products to overseas markets are good illustrations of specialized ships which give Canadian exporters a service advantage in respect to both frequency and handling.

The 35,000-50,000 dwt forest products bulk carriers have been built to specification set out by the large Canadian forest products exporters. The vessels are then employed by the firm under a long term charter. These vessels are equipped with advanced cargo handling gear designed not only to reduce loading costs but also to improve cargo handling. Loading and unloading is facilitated by jib or gantry cranes which spot load cargoes directly into large holds with extra large full size hatch covers.<sup>7</sup> One advantage accruing to customers is a much lower damage rate in handling.

The use of vessels controlled by the forest products exporting firm provide customers in overseas markets greater frequencies of delivery. The major exporters, MacMillan-Bloedel and Seaboard, each have a fleet of ships which sail into their major markets on a regular basis. Four benefits which occur, both to the customer and the exporting firm, due to increased frequency are:

- 1) reduction in the size of minimum order
- 2) reduction in inventory requirements
- 3) reduction in capital tied up in inventory
- 4) broadens customer base because of first three advantages<sup>8</sup>

#### SALES TERMS AND PAYMENT

The particular shipment terms included in any trading contract are determined in order to fix the responsibility for the costs and risks of carriage clearly between buyer and seller. Shipment terms state explicitly which party will pay the transport charges (and normally

undertake transport arrangements), where delivery takes place and when property and risk passes from seller to buyer.

The terms of shipment do not spell out explicitly when payment is made by the buyer to the seller. In both f.o.b. and c.i.f. sales, it is common for payment to be made upon presentation of documents once the cargo is loaded aboard the vessel at the port of loading. However, timing of payment is decided according to contractual negotiations between buyer and seller. Payment can be made prior to shipment, upon loading, upon delivery, 30 days after delivery, etc. This suggests that the timing of payment is not determined by the terms of shipment and the control of shipping in Canadian bulk trade.

#### ENSURING DELIVERY THROUGH THE CONTROL OF SHIPPING

The control of shipping can be an effective means of guaranteeing delivery of the commodity traded. In a f.o.b. contract, the foreign importer-buyer must supply the vessel to lift the tonnage. If the importer-buyer should desire to break the contract, one convenient way in which to do so is to fail to supply a vessel. This leaves the Canadian exporter in a particularly vulnerable position since the commodity has already been delivered to tidewater and is in storage awaiting the arrival of the vessel. While the sales contract would no doubt provide for some compensation for the exporter due to cancellation in this manner, the sale has fallen through because the control of shipping exercised by the foreign importer-buyer provided the means by which to break the contract. This is not to say that if the contract was on a c.i.f. basis, that the foreign importer-buyer could not have found another way out of it.

According to several sources involved in Canadian bulk commodity trades, this situation has occurred in the recent past. A particular

Japanese buyer of copper concentrate experienced rising raw material inventories following the worldwide recession sparked off by a quadrupling of oil prices in 1973-74. The Japanese buyer had a sales contract with a Canadian exporter on f.o.b. terms. In order to avoid increasing their inventories further, the Japanese party failed to produce a ship to lift the contracted amount. In this situation, a c.i.f. contract with shipping controlled by the Canadian firm would have averted this occurrence. While this example is an unusual occurrence, it may be a factor which motivates Canadian firms to sell c.i.f. and control the shipping arrangements.

The control of shipping arrangements can also ensure that a sale is delivered into the market it was intended for. If a contract is f.o.b., the foreign importer-buyer has the opportunity to arbitrage by cross trading the commodity and shipping directly to the new customer from the original port of loading. This may reduce the opportunity for a Canadian exporter to price discriminate into various markets. The control of shipping is an effective means to allow firms to price discriminate in separate markets because any importer-buyer wishing to cross trade the commodity must take delivery and then ship to the new market. The additional shipping leg will in most cases eliminate the profits to be made from cross trading.

A Canadian firm exporting metals provides an interesting example of this situation. A company salesman was in Taiwan on a sales trip to a potential buyer. At the buyer's factory, the salesman noticed metal ingots produced by his firm. Knowing that the company had not previously sold to this buyer, the salesman suspected the ingots had been cross traded. The original buyer was traced through the serial numbers stamped

on the ingots. As the original buyer purchased the ingots on f.o.b. terms, it was speculated that the ingots were resold to the Taiwan buyer at a price lower than the Canadian company was quoting. The Canadian firm took further precautions to avoid a repetition of the situation by making further sales to the original buyer on c.i.f. terms only.

#### KNOWLEDGE OF SHIPPING MARKETS AS A SALES AID

Although a Canadian exporting firm may not desire to control shipping by selling on c.i.f. terms, a knowledge of shipping costs will help the exporter realize a better f.o.b. price. In making an effort to participate in shipping, the Canadian exporter will gather information concerning shipping costs to prepare a c.i.f. offer. The knowledge gained will enable the exporter to understand better the costs of shipping and the shipping margins which the importer-buyer has built into his f.o.b. offer. This will prevent the foreign party from obtaining a better price from the Canadian exporter in sales negotiation through a padding of the shipping costs.

#### SUMMARY

This chapter has analyzed marketing considerations motivating the control of shipping by Canadian firms exporting dry bulk commodities. The control of shipping may enable the exporting firm to achieve specific marketing advantages in respect to price, service and delivery.

Price advantages resulting from the control of shipping are obtained largely through economies realized in the various phases of transport and distribution. These were discussed in detail in the preceding chapter. The focal point of potential marketing service advantages is the opportunity to make life easier for a potential customer through the control of

shipping by the exporter. The control of shipping is an effective means to ensure delivery to a particular customer or market.

The control of shipping may be an integral part of an exporting firm's marketing strategy. The marketing strategy, in turn, is crucial to the achievement of the firm's goals of profits and growth.

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5. Ibid.
6. Personal interview conducted by Chan Heng Toong with Mr. A. MacKenzie, Manager of Transportation and Distribution, Dupont of Canada, July 1978.
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## Chapter 4

### THE EFFECT OF POLITICAL CONSTRAINTS ON THE CONTROL OF SHIPPING

Deep sea shipping has come under increasing attention by governments. Open negotiation of the control of shipping between buyer and seller is not always possible due to constraints imposed by governments.

This chapter considers the effects that political constraints have on the control of shipping in Canadian oceanborne dry bulk trades. Generally, the Socialist and developing countries are where political constraints have been the strongest. Government involvement has been more limited in the developed market economy countries. In these countries, the terms of shipment are usually agreed upon during the sale negotiations without political constraints affecting the choice.

This topic has become increasingly important to Canada because the country does not possess a merchant marine. Canada's maritime policy since the late 1940's has been to rely on the international shipping market to provide the shipping services for Canadian trade. This policy has served Canada well up to the present time. Canada ranks tenth in the world in terms of seaborne trade by tonnage.<sup>1</sup> The ability to secure efficient shipping is of vital importance to Canadian traders.

#### Reasons for Larger Participation in Bulk Trades by Developing Countries

In the past, the developing countries have been relatively satisfied by the level of service and rates in bulk shipping. In part, this was due to bulk shipping requirements being contracted for on the free world market. The initial area of fleet development in most developing countries was liner shipping. It was felt that liner shipping offered the greatest opportunity for developing countries to rectify their real or perceived

shipping grievances. This was due to the fact that liner shipping is a relatively expensive operation with rates determined by price setting cartels, the conferences. The developing countries felt that if they were able to participate in liner shipping they would either be able to reduce rates or bring home a share of profits from their participation in the conferences. The high level of freight rates prevailing for liner shipping also gave many countries the expectation of foreign exchange savings and gains by participating in liner shipping.

As the liner fleets of developing countries grew and acquired a portion of their liner trades - the proportion varies widely between countries - attention has shifted to bulk shipping.

Developing countries have two reasons for developing their bulk shipping fleets. First, developing countries export 90 per cent of tanker cargoes and over a third of the main dry bulk cargoes. Yet they own less than 6 per cent of the world fleet of tankers and bulk carriers. World bulk trades, including oil, account for 80 per cent of world seaborne cargoes.<sup>2</sup> Second, developing countries claim they can operate bulk shipping services more economically than the traditional maritime nations can under their own flags. Traditional maritime nations have increasingly turned to flags of convenience to lower their costs and remain competitive. This has occurred almost entirely for bulk, and not liner, vessels. Nearly a third of the world fleet is now registered under flags of convenience.<sup>3</sup>

#### FLAG DISCRIMINATION

As developing and Socialist countries have built up their merchant fleets, it has been common for respective governments to impose requirements on trade to ensure that national flag ships are utilized. Most of

the restrictive trade practices come under the term 'flag discrimination'. It should be mentioned that flag discrimination is not a recent phenomenon. The traditional maritime nations made use of flag discrimination when their merchant fleets were growing in the 18th and early 19th century.

Flag discrimination can be applied either bilaterally or unilaterally. Bilateral shipping agreements are normally developed by governments and apportion the seaborne trade between two countries to national flag ships, usually on an even percentage. Bilateral shipping agreements containing 50:50 cargo sharing clauses are popular between Latin American countries.<sup>4</sup> India has similar agreements with the U.S.S.R. and other developing and Socialist countries.

Unilateral flag discrimination by countries can be summarised as follows:

- (1) direct legislation can reserve a certain proportion of trade or type of cargo for national carriers;
- (2) preference can also be practiced by manipulating exchange control or finance for trade, in order to give national carriers advantageous rates;
- (3) import and export licences can be controlled;
- (4) various harbour fees and dues can be adjusted;
- (5) domestic shippers can be pressured by official sources to ship their cargoes on national carriers.<sup>5</sup>

The most common form of flag discrimination is the reservation of a certain proportion or type of cargo for national ships.

UNCTAD liner code. In 1974, concerted action by the developing countries - the so called Group of 77 - led to a proposal known as the Convention on a Code of Conduct for Liner Conferences by the United Nations Confer-

ence on Trade and Development (UNCTAD). The dominant feature of this Code is the distribution of liner freight between two countries on the 40-40-20 basis. This reserves for each country 40 per cent of the sea-borne trade for their national or designated carriers with the remaining 20 per cent allocated to cross traders. The Code applies only to liner shipping. It has yet to be ratified because less than 25 per cent of the world's liner cargo tonnage, by country of registry, has acceded to the Code. The traditional maritime nations have been opposed to the Code because they own the majority of the world's liner cargo tonnage. Their participation in many trades would decrease if they were only allowed to participate as cross traders limited to a 20 per cent share.

Recently, at the UNCTAD V Conference in Manila in the spring of 1979, the developing countries proposed that a cargo sharing system similar to the 40-40-20 agreement for liner trades be implemented for bulk trades. The adoption of such an agreement seems even more remote than for the liner code but is another indication of the determination of developing countries to participate in bulk shipping through the mechanism of flag discrimination.

#### CANADIAN EXPERIENCE WITH COUNTRIES PRACTICING FLAG DISCRIMINATION

Canada has been affected by flag discrimination to a significant degree in its trade with the developing and Socialist countries. To illustrate this, Canadian trade and shipping with Brazil, China, India and South Korea will be examined. These countries were chosen for two reasons. First, they have rapidly expanded their merchant fleets in the last decade and possess the largest fleets in the Third World. Second, Canadian exports of sulphur and potash are common to all four and move in substantial tonnages. The effect of flag discrimination upon the control

of shipping and the choice of vessel in Canadian trade can be seen from the following illustrations.

### Brazil

Brazil's merchant fleet has grown spectacularly. In 1960 it amounted to only 1.3 million dwt; by 1980 it will top the 10 million dwt mark.<sup>6</sup> Brazil has achieved this remarkable growth through a policy of cargo reservation and bilateralism and by government provision of soft loans for the nation's ship owners.

A unique feature of Brazilian shipping policy for bulk imports is that all major tonnages, totalling over 20 million tons, are required to move on vessels owned or chartered by Brazilian shipping companies.<sup>7</sup> This is in effect regardless of the terms of shipment. Between 1967 and 1976, Brazil's flag share of imports, including chartered vessels, rose from 45 to 70 per cent of all tonnage. In contrast, only some 25 per cent of export tonnage moved in Brazilian owned and chartered vessels in 1976.<sup>8</sup>

Canadian sulphur and potash sales to Brazil have each fluctuated between 200,000 to 400,000 tons annually. The majority of sales are on a c. & f. basis. This is due to the multitude of small private fertilizer companies in Brazil which import less than shipload volumes. The Canadian exporting firms each consolidate their orders to utilize larger vessels and reduce the freighting costs to Brazil. However, Canadian exporters are subject to Brazilian government regulations which stipulate that shipping be handled by a Brazilian shipping company.

As a result, sources in the various Canadian sulphur and potash exporting firms state that the current practice is to ask the various Brazilian shipping lines for bids to move a certain amount of tonnage

from Vancouver to Brazil over the period of one year on a Contract of Affreightment (COA). The carrier submitting the lowest bid is contracted.

Despite the rapid growth of Brazilian shipping and the addition of many new dry bulk carriers, the Brazilian shipping companies have normally chartered tonnage off the world market rather than use flag vessels to fulfill their COA's with Canadian sulphur and potash exporters. This is in part due to the abundance of dry bulk carriers which have unloaded in Japan and seek employment. The Brazilian owners normally time-charter a vessel to move from Japan to Vancouver in ballast, Vancouver to Brazil with cargo, and then either release the vessel or use it to move Brazilian export cargo.

Brazilian shipping companies are also responsible for transporting the sizeable Canadian wheat exports to Brazil which have been over 1 million tons annually. The Canadian Wheat Board sells on a f.o.b. basis to a government buying agency. The agency then contracts with local ship-owners to move the tonnage.

### China

China has the potential to become one of the largest maritime nations. One of China's national goals is to develop its merchant fleet. At the end of 1978 China's merchant fleet totalled over 5 million grt with another 1 million grt under flags of convenience through Hong Kong and Macao based companies.<sup>9</sup> China still has large requirements for chartered tonnage - primarily due to the enormous variation in import and export demand. In 1978 China had over 150 vessels of 3.5 million dwt chartered on the time charter market.<sup>10</sup>

China has used a policy of buying f.o.b. and selling c.i.f. to utilize and build its merchant fleet.<sup>11</sup> The implementation of this policy

is straight forward because all of China's trade is handled by state trading agencies, as is the shipping sector. The state agencies request during trade negotiations that control of shipping be placed in their hands. Tonnage requirements are then forwarded to the China Foreign Trade Transportation Corporation, a branch of the Ministry of Foreign Trade. All seaborne traffic is then directed to the China National Chartering Corporation, Zhongzu. Zhongzu, in effect, is China's shipper representing all cargo interests. Tonnage requirements are then met by vessels from the China Ocean Shipping Company (COSCO), the state owned shipping company, one of three Hong Kong based, Chinese owned shipping lines, or vessels chartered directly by Zhongzu from the world market.<sup>12</sup>

Canadian exports of sulphur and potash to China are currently around 300,000 tons a year each.<sup>13</sup> The two major Canadian exporters of these commodities, Cansulex and Campotex, are indifferent to Chinese demands for the control of shipping. First and foremost, these firms are interested in making sales to the Chinese and regard Chinese demands for control of shipping as acceptable and incidental to doing business with China.

Similarly, China is responsible for providing vessels to lift the 3.5 million tons of Canadian wheat purchased annually. Sales are made by the Canadian Wheat Board (CWB) with the China National Foods and Cereals Agency. The Chinese agency requests f.o.b. terms of shipment. This is readily acceptable to the Wheat Board as it is their policy not to be involved in ocean transportation. To date, the CWB has been satisfied by the shipping performance of the Chinese.

Canadian forest products exporters have given China a concession to control shipping in order to penetrate the Chinese market. Since the

Second World War, the Canadian forest products trade has moved on an almost exclusive c.i.f. or c. and f. basis. A buyer's market for pulp and Chinese insistence on f.o.b. terms of shipment has upset the traditional pattern. Canadian forest products exporters no doubt have accepted Chinese demands also because the volume involved is rather small and the movement did not fit well into existing shipping patterns using the forest products exporters' chartered vessels.

### India

India's merchant marine has grown steadily since Independence. At the end of 1978, total operative tonnage was 5.2 million grt with another 0.8 million grt on order.

The Indian government has a goal for Indian flag ships to transport 50 per cent of the country's foreign trade. Presently, Indian ships carry 41 per cent of the country's foreign trade although in bulk cargoes their share is only 23 per cent.<sup>14</sup>

India has negotiated a few bilateral shipping agreements; one is a 50:50 pact with the U.S.S.R. By and large, the shipping business in India has remained free from the extensive flag discrimination tactics found elsewhere which protect developing merchant marines. State owned agencies involved in foreign trade are required to use the services of the state shipping agency, Transchart, to arrange their shipping requirements.<sup>15</sup>

Canada's major dry bulk exports to India are sulphur and potash, both of which exceed 300,000 tons annually. An Indian state agency, Minerals and Metals Trading Corporation (MMTC) is the sole buyer. Canadian exporters offer sales contracts on both a c.i.f. and f.o.b. bases. MMTC invariably disregards the c.i.f. quotation and accepts the f.o.b. basis. Freight is then arranged through Transchart and Indian vessels are

utilized if possible.

Despite government encouragement to private traders to export c.i.f. and import f.o.b. and thus utilize Indian shipping, there are instances where Canadian exporters have sold on a c.i.f. basis. Exports of oil-seeds have commonly moved on c.i.f. terms of shipment.

### South Korea

The percentage of overseas cargoes being transported by domestic flag ships has steadily increased and in 1977 attained its highest level ever, 42 per cent. The South Korean merchant fleet at the end of 1977 was 3.4 million grt.<sup>16</sup> Many small operators are engaged on the Japan service, South Korea's main trading partner. The Korean Shipping Corporation has most of the larger vessels, over 10,000 grt, and serves the country's longer trade routes.

The South Korean government requires all importers to use national flag ships where possible. Official agencies control an estimated 80-90 per cent of all imports into Korea. Foreign participation is limited to the container trades and other specific exceptions designated by the government. In addition, foreign exchange controls effectively prevent a Korean company from placing any written guarantee with a foreign shipping company.<sup>17</sup> However, due to the capacity limitations of the country's fleet, dispensation to use foreign vessels is possible to obtain.

South Korea's major dry bulk imports from Canada are sulphur and potash. Imports are handled by three importing companies. Due to the government policy of requiring Korean ships to service the import trade and the difficulty of obtaining a waiver because suitable vessels usually are available, Canadian exporters of sulphur and potash normally offer sales contracts only on f.o.b. terms of shipment. Ships of the Korean

Shipping Corporation usually lift the cargoes from Vancouver.

The trade in forest products to South Korea is on c.i.f. terms. Canadian exporters are able to bargain from a position of strength due to their extensive expertise in shipping and their chartered tonnage. A forest products vessel serving Japan can extend its voyage to South Korea at a low incremental cost. Also, the tonnage involved is not large. For a combination of these reasons, Canadian exporters of forest products are successful in obtaining flag waivers and are able to serve the South Korean market with their controlled tonnage.

#### COST IMPLICATIONS OF FLAG DISCRIMINATION

Canadian exporters are rightly concerned about flag discrimination policies which require the use of national flag ships in certain trades. The required use of national flag ships may result in higher cost shipping. In bulk trades, where the proportion of shipping costs relative to the final landed cost of a commodity may be as high as 50 per cent, the extra cost of shipping may result in making a commodity uncompetitive in a market or force the Canadian trader to accept a lower netback or pay a higher price. The last point is especially relevant in those trades where Canadian traders bear the majority of freight costs.

Why is it possible that increasing flag discrimination and the required use of national merchant fleets could lead to higher priced shipping? There are three areas of concern which can result in higher cost shipping.

- 1) higher cost vessels
- 2) delay costs
- 3) reduced competitive market for third flag carriers

### Higher Cost Shipping

Conventional wisdom would suggest that vessels of developing and Socialist countries are less expensive to operate than ships owned by the traditional maritime countries, including those registered under flags of convenience. It is asserted that lower crewing and administrative expenses in developing countries result in lower cost shipping.

This is not always the case. Crew's salaries in Brazil are similar to the pay scales in competing countries because of union pressure. Additionally, owners are obliged to employ more seamen than necessary because of a high rate of national unemployment.<sup>18</sup> As a result, Brazilian ships are more expensive to operate than those which trade in the free world market.

Flag discrimination may protect national fleets from competition by outside carriers. Higher costs may result because the incentive to reduce costs and inefficiencies is lessened.

The level of vessel utilization is crucial in determining the cost of shipping on a particular vessel or line. Shipowners, whose vessels are contracted on the international charter market, seek employment for their vessels on voyage patterns to minimize the amount the vessel has to sail in ballast. This requires use of triangular and cross trade routings.

To illustrate, assume that the owner of a Panamax size dry bulk carrier is able to secure the following hypothetical routing:

Hampton Roads	to Japan	Coal
Japan	to British Columbia	in ballast
British Columbia	to Brazil	Sulphur/Potash
Brazil	to U.S. East Coast	Iron Ore

This vessel would achieve a utilization ratio of over 80 per cent.

H.D. Drewry Shipping Consultants estimate that the level of utiliza-

tion of bulk carriers is very high.<sup>19</sup> The ratio of laden sailing days to total sailing days - assuming all port days are used for loading and discharge - is as follows:

15,000 dwt	81%
25,000 dwt	77%
60,000 dwt	72%

Current world dry bulk shipping rates reflect these high levels of utilization. Given lower levels of utilization, rates must necessarily increase because a smaller amount of tonnage carried in a year would be available to cover similar costs and capital charges.

It is complicated to achieve high levels of vessel utilization when services are being contracted on the international charter market. The necessary expertise and know how of the shipping companies may not be as high in the developing countries. As a result, they may not be able to achieve as high a level of vessel utilization as shipping companies in the traditional maritime nations. To the extent they cannot, their costs will rise and higher freight rates will be passed on to the shippers or absorbed by the home government.

Lower levels of vessel utilization may also result from the deliberate maritime policy of a country. China's bulk carriers on the Canadian wheat commonly trade ply on a shuttle basis, due to a lack of bulk exports from China, and are not trading in a more complex fashion to achieve higher levels of utilization. This effectively limits their utilization ratio to only 50 per cent.

### Delay Costs

Flag discrimination policies require Canadian traders to utilize the national flag vessels of the trading partner's country. Canadian traders may incur cost penalties due to the scheduling of the vessel from the

flag required as a result of flag discrimination. Without any restriction on the vessel which will be used to transport the trade tonnage, the first available and suitable vessel could be chartered. In normal circumstances, there are bulk vessels steaming near Canadian waters which are actively seeking additional cargoes. These vessels are chartered on the world market and charterers benefit from the large number of vessels contending for cargoes, not only in terms of price, but in terms of vessel availability and scheduling.

If Canadian traders are required to use the national flag vessels of a particular country, they face a number of constraints. Due to the finite fleet sizes of many countries, a suitable vessel may not be available before a vessel which could have been chartered off the world market. Unless the contract takes this into account, Canadian firms may incur cost penalties because shipment is delayed.

For example, a 20,000 ton shipment of sulphur to a developing country may be delayed by two weeks because of vessel availability. At \$40/ton FOB Vancouver, the contract is worth \$800,000. The inventory carrying cost is  $\$800,000 \times 14/365 \times 14\% = \$3,648$ . In addition, there are costs incurred for storage space either at the point of production or at tidewater.

These delay costs may be further exacerbated if the vessel which has been designated is delayed en route. While this may occur for any vessel regardless of origin, Canadian exports have had some poor experiences with countries which insist on the use of their flag vessels. One Canadian firm exporting pulp to Cuba recalls rushing production of a specific grade of pulp and domestic transportation to meet a deadline imposed by the Cuban importing company. While the pulp was being unloaded

at the wharf in Vancouver, the Cubans advised the firm that the vessel would be delayed by at least two weeks. Depending on the compensation provisions in the contract, the Canadian firm may have accrued sizeable delay costs on the transaction.

#### Reduced Competitive Market for Third Flag Carriers

Flag discrimination policies, as applied to Canadian traders, require the use of the other country's vessels. Because of the protection which many countries extend to their developing merchant fleets, the use of third flag carriers is reduced. The removal of competitive pressure which is exerted by third flag carriers seeking additional cargoes may affect the costs of shipment via national flag vessels of discriminating countries. This may result in much lighter scrutiny of costs and efficiencies. As a result, costs may rise.

Another cost which may be imposed by flag discrimination restrictions results from the use of a vessel which is not suited to handle a particular cargo. The costs of this are very difficult to access, as is the question of which party bears the cost. This is particularly relevant to Canadian bulk trades with developing countries because these countries have initially developed their liner fleets. The lack of suitable bulk carriers may require the use of liner type vessels, commonly 'tween deckers', which are ill suited to handle bulk cargoes in the same efficient manner as a bulk carrier.

#### SUMMARY

This chapter has examined flag discrimination and its implications on the control of shipping for the major Canadian dry bulk trades. Flag discrimination is used by the Socialist and developing countries as a

means to ensure the utilization of growing national flag fleets. One effect of flag discrimination is to remove the opportunity for Canadian traders to participate in the responsibility of securing shipping arrangements through the terms of shipment.

Sales of Canadian grain, sulphur and potash to countries which practice flag discrimination are normally imported through agencies with some degree of government involvement. Government flag discrimination policies are channeled through the importer. The insistence of the importer for f.o.b. terms of shipment ensures that national flag vessels will be utilized if available. Canadian exporters normally have little leverage with the state-related importers regarding the terms of shipment.

The majority of Canadian dry bulk trade is with countries which practice little flag discrimination. However, Canadian trade in dry bulk commodities is growing the most rapidly with those countries which practice flag discrimination. Canadian traders are rightly concerned with the effect flag discrimination has on the provision of efficient shipping services. Shipping costs account for a high percentage of the landed cost of bulk commodities. High cost shipping services may affect the competitiveness of Canadian dry bulk exports. It is in the self interest of Canadian traders to participate in the negotiations concerning the terms of shipment. This will give the Canadian trader the opportunity to secure efficient shipping services, free from flag discrimination, on the international charter market. In doing so, the effect upon the competitiveness of Canadian dry bulk commodities by shipping policies in foreign countries will be lessened.

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## Chapter 5

THE CONTROL OF SHIPPING AND INSTITUTIONAL POLICY:  
TWO CASE STUDIES

Firms engaged in Canadian oceanborne trades have different policies with respect to the control of shipping in their individual trades. This is logical given the diversity of trades and markets, differing shipping considerations and the number of firms involved. The purpose of this chapter is to illustrate through two case studies the reasoning which influences policy formation, in respect to the control of shipping, for two firms involved in Canadian oceanborne bulk commodity trades.

Briefly, the important foundations on which a firm bases its policy in respect to controlling shipment are the size of the firm and the size and character of trades and markets in which it is involved. The policy is then set in response to logistical, marketing and political factors. In some situations, a selling tradition in a particular trade or market is maintained. Overall, firms determine their policy in order to further their own self-interest. What this self-interest will be varies for firms according to their objectives.

CASE STUDIES

The two case studies analyze the policies of the Canadian Wheat Board and the Japanese steel companies. There are six major steel companies in Japan but they are examined together because of their similar behavior in the shipping of their imported raw materials. These organizations were selected because of their importance in Canadian oceanborne bulk commodity trades. Jointly, they are responsible for nearly one-third of Canada's oceanborne bulk commodity exports.

Their policies in respect to the control of shipping are well defined.

Their behavior sheds light on a wide variety of factors which are important when examining the control of shipping in Canadian trade.

#### THE CANADIAN WHEAT BOARD

The Canadian Wheat Board (CWB) is an agency of the Government of Canada established under the Canadian Wheat Board Act of 1935. Its function, in general terms, is to market in interprovincial and export trade, grain grown in Western Canada. The grains for which the CWB is responsible, referred to as Board Grains, are wheat, barley and oats. Other grains and oilseeds are marketed by the private grain traders.

Canada, a country with one-half of one percent of the world's population, produces six per cent of the world's grain. In the 1977-78 crop year, grain production totalled 36.8 million tonnes.<sup>1</sup> The Canadian share of global grain exports is 22 per cent.<sup>2</sup> The United States and Canada together account for 70 per cent of the world grain trade.<sup>3</sup> Table 5.1 lists the export tonnages of Canada's principal grain products in 1977-78. Table 5.2 shows the major customers of Canadian wheat and barley in 1977-78.

TABLE 5.1

#### EXPORTS OF CANADIAN GRAIN PRODUCTS IN 1977-78

<u>Commodity</u>	<u>Tonnage Exported</u>
Wheat	15,246,000
Flour	757,000
Oats & Products	90,000
Barley & Products	3,590,000
Rye	271,000
Flaxseed	272,000
Rapeseed	1,476,000

Source: Canadian Wheat Board Annual Report, 1977-78

TABLE 5.2

MAJOR CUSTOMERS OF CANADIAN WHEAT AND BARLEY IN 1977-78

WHEAT		BARLEY	
<u>Customer</u>	<u>Tonnage Exported</u>	<u>Customer</u>	<u>Tonnage Exported</u>
China	3,469,000	Japan	841,000
USSR	2,146,000	Italy	630,000
UK	1,526,000	Poland	595,000
Japan	1,419,000	W. Germany	206,000
Italy	894,000	Iran	184,000
Brazil	782,000	USSR	166,000
Poland	686,000		

Source: Canadian Wheat Board Annual Report 1977-78

The CWB is basically a marketing co-op for nearly 160,000 prairie farmers. The CWB does not own or operate facilities of any kind for the storage or handling of grain. It does, however, direct the movement of producers' grain, in the domestic and export markets, through the established private grain traders who act as agents of the CWB.

#### CWB Shipping Policy

The CWB's marketing policy is to sell on an in-store terminal basis. The CWB does not undertake responsibility for supplying ocean shipping in any of its sales. The primary objective of the CWB is to co-ordinate and market the three major Canadian grains. In spite of the importance of shipping, the CWB does not desire to become involved in supplying shipping for its sales and market on a delivered basis. There are four basic reasons for this:

- 1) buyers' preference for f.o.b. terms
- 2) need for extensive shipping expertise
- 3) risk
- 4) political pressure to use Canadian flag ships

Buyers preference. The preference of many buyers to purchase grain on f.o.b. terms is an important factor influencing the CWB's shipping policy. Many of the largest customers of Canadian grains are countries where the government is involved in grain purchases through state buying agencies. These agencies usually insist on f.o.b. terms which allow them to control the freighting arrangements and nominate the vessel to be used. In these countries, the government encourages the use of national flag ships. The tonnages of grain imported annually provide an important cargo on which to base a fleet development plan. In addition, these customers are conscious of keeping shipping costs to a minimum and feel that they are better able to achieve this by undertaking responsibility for shipping. Because many of the major customers desire to provide for their own shipping, the CWB does not have any real incentive to sell on a delivered basis. In situations where a buyer would prefer to purchase from the CWB on a c.i.f. basis, the private Canadian grain trade may be contracted to provide the shipping. This will be elaborated on in a subsequent section of this chapter.

#### Need for Shipping Expertise

A c.i.f. sales policy would require the CWB to develop extensive shipping expertise. In recent years, annual sales by the CWB have approached 20 million tons of grain. If the CWB was responsible for all the shipping of its sales, 1,000 vessel movements would be required to transport this volume if the average vessel employed were assumed to be in the 20,000 dwt category. At an average of 6 complete voyages a year per vessel, 166 vessels would be employed in continuous service. To charter, coordinate and manage this number of vessels would require a large shipping department by anyone's standards. There are only a handful

of shipping companies or agencies in the world that have responsibilities of this magnitude.

### Risk

The CWB would be exposed to risk by supplying shipping for its sales. To eliminate the risk in supplying shipping, it would be necessary for the CWB to know exactly what the shipping costs would be at the time the sales contract was negotiated. This is not always possible because shipping costs may not always be known over the period of the sales contract.

If vessel requirements were met by voyage or trip charters, the CWB would be exposed to risk on longer term sales contracts because of possible price fluctuations in the shipping markets. Losses would be incurred if shipping costs rose above the margin the CWB had built into its c.i.f. price. Conversely, the CWB would profit if shipping prices dropped. There is considerable risk in being exposed to shipping markets in this manner as markets have fluctuated wildly in the past.

Alternatively, if the CWB employed vessels on long term charters, it would have to ensure that the vessels were utilized on back hauls to keep transport costs for grain products on the front haul to a minimum. To achieve a high level of utilization requires extensive shipping expertise as well as favorable trading conditions. The CWB would be exposed to risk if a high level of utilization could not be achieved because higher charges would have to be allocated to front haul grain products. These higher shipping costs may exceed the margin the CWB has built into longer term c.i.f. contracts and result in trading losses. Additionally, the CWB would be under pressure to keep spot c.i.f. prices down in order to keep these prices at competitive levels. This would require the CWB to

absorb the higher shipping charges.

The magnitude of the risk is grasped by realizing that a \$1 rise in shipping costs per ton would cost the CWB \$20 million a year if applied to the annual sales of 20 million tons. A \$1 rise in shipping charges is common over the course of a year. In volatile market conditions, shipping rates per ton have risen by over \$10 in the space of a few months. If the CWB sold on a c.i.f. basis only, there is the risk that the CWB would be at the mercy of freight charterers who would know that they needed the ships to fulfill their contracts. This could result in the CWB paying a higher price for shipping than if the buyer were to arrange for the shipping of his purchase. Most vessels are chartered through the London or New York shipping markets where a high degree of professional conduct exists. Still, shipowners would be able to figure out that the CWB was in the market for vessels and could possibly discriminate against the CWB. The risk of this occurring depends on the ability of shipowners to collude and the state of the shipping markets.

#### Political Pressure

Finally, the CWB would undoubtedly be subjected to political pressure from proponents of the Canadian merchant marine. Canada does not presently have a deep sea merchant fleet. If the CWB was responsible for the shipping of its 20 million tons of grain sales, it would come under pressure to utilize Canadian flag ships. The substantial tonnages would provide continuous employment for over 150 vessels. It is a widely known fact that Canadian vessels would be more costly to operate than ships chartered from the world market because of higher crewing costs, ship construction costs and taxes. In the interest of keeping delivered prices competitive, the CWB would very likely react unfavorably to being pressured

into using Canadian flag vessels.

### Canadian Participation in Grain Shipping

In spite of the policy of the CWB with respect to shipping, there can be Canadian participation in the shipping of CWB grains. Private grain trading companies, who act as agents of the CWB, may undertake responsibility for the shipping of Board grains. The opportunity for them to do so depends upon the sales method employed by the CWB to different customers.

The CWB markets grain in three manners. They are:

- 1) central buying system
- 2) commercial buying system
- 3) combination buying system

In the following sections, these marketing methods will be examined to shed light on the opportunities each present for Canadian participation in shipping.

#### Central buying system

In a central buying system, a single agency usually a government organization, is responsible for purchasing all grain imported into the country. This situation exists with several of Canada's largest customers, including China, USSR, Poland and Brazil. Purchases are made on the basis of direct negotiation with the CWB or through periodic tenders offered by buying missions. In 1973-74, about 75 per cent of the CWB's Board grain sales were purchased by government buying agencies acting on behalf of individual countries.<sup>4</sup>

The policy of the CWB to sell in-store is agreeable to countries which utilize a central buying system. This is because their governments usually have a shipping policy which encourages the use of national flag

shipping. The shipping policy of the government is simple to implement through the purchases made by a government grain buying agency. The policy of the CWB, in effect, gives these foreign buyers the control of shipping without any negotiation on the subject.

It can be argued that the policy of the CWB makes no difference. These central buying agencies buy from private merchants under similar terms for the identical reasons. Private traders in the U.S.A. acquiesce to these demands even though they often sell on c.i.f. terms to customers around the world. Thus, for the majority of CWB sales, the shipping policy of the CWB does not differ from that of private firms in determining where the control of shipping rests.

The Canadian agents of the CWB are normally involved in these sales through fobbing contracts. These contracts, which are given by the buyer, provide for the agent to undertake responsibility for coordinating the outward elevation and loading of the grain onto the buyer's vessel. In effect, the agent is responsible for the activity between the CWB's in-store sale and a f.o.b. position.

#### Commercial buying system

Under a commercial system, a country's grain needs are bought by individual private companies, each buying for its own needs. These buyers normally purchase in smaller quantities than central government buying agencies because they account for only a portion of the market in their country. The commercial buying system is prevalent in the United Kingdom and Western Europe.

The private grain trading companies that are agents of the CWB play an important role to markets which purchase on a commercial basis. This is because the agents have a superior over-all market intelligence network in

those countries with a complex commercially oriented grain trading industry. The agents are normally Canadian subsidiaries of U.S. grain trading companies. The parent organizations have offices in most countries and are well acquainted with local market conditions.

Under the commercial buying system, it is more common for sales of CWB grains to be negotiated by the agents rather than the CWB. In a sense, the agent acts as a merchandiser. The agent will buy grain from the CWB in a forward position and then seek to market the grain on a commercial basis in countries with a commercial buying system. Agents also sell to central government buying agencies - this has been reported in the case of Brazil and Poland. Price and availability are important factors influencing the decision of the buyer to use this channel.

The agent can market their Board grains on a f.o.b. or c.i.f. basis. In practise, it is more common for sales to be on c.i.f. terms because the agents are often in a position to consolidate cargoes and secure lower ocean freighting rates. The agents may also possess more expertise in shipping than the buyer.

Private grain trading companies may also become involved in grain shipping by assuming responsibility for the shipping of grain sold by the CWB to customers on a f.o.b. or in-store basis. Certain customers may purchase directly from the CWB but do not wish to undertake responsibility for the shipping of their purchase. At the request of the buyer, the CWB can select an agent or tender for bids from several agents to provide the shipping. The resulting contract whereby an agent of the CWB, normally a private grain trader, provide the shipping is known as a cif-up contract.

The U.K. market provides a good example of how a cif-up system func-

tions. Three large buyers negotiate directly with the CWB and commit themselves to a purchase at an in-store price. Agents of the CWB are invited to tender for a cif-up contract to provide the shipping for the sale. The agent takes into consideration all the activities necessary to transform the in-store price to a c.i.f. price. The buyer then selects the lowest cif-up offer and the agent submitting it is contracted to undertake the loading and ocean freighting for that contract.

The commercial buying system provides the opportunity for Canadian participation in the shipping of CWB grains. Private grain traders may become involved in shipping either by merchandizing grains they have purchased from the CWB or through cif-up contracts.

#### Combination buying system

The sale of Board grain, primarily wheat and barley, to Japan is the sole example of the combination buying system. The Japanese Food Agency (JFA) and Zenkoren are government agencies responsible for importing wheat and barley. CWB sales methods are similar for both agencies.

On wheat sales, the overall quantity and price are negotiated directly between the CWB and JFA. The sales are on a f.o.b. basis. However, two intermediaries are involved in the actual movement of the wheat: a Canadian agent of the CWB and a Japanese trading company. The agent handles the documentation and converts the U.S. currency paid by JFA into Canadian currency for the CWB. The Japanese trading companies convert the sale into a c.i.f. basis for the JFA to evaluate. The policy of the JFA allows for only Japanese trading companies to make c.i.f. offers. This precludes the participation of any Canadian agents of the CWB from attempting to make a cif-up offer to the JFA. It ensures that Japanese interests are favoured in the shipping of wheat - over one million tons annually -

from Canada to Japan.

In contrast, non-Board grain sales to Japan are marketed by private grain trading companies without the involvement of the CWB. The Japanese buyers are normally private traders and crushing houses. Sales of non-Board grains to Japan are characterized by small lot sales to multiple buyers. Although Japan trading companies act as the importers, the control of shipping rests largely with Canadian interests. The control of shipping is an integral part of the marketing strategy of the Canadian grain trading companies due to their ability to secure lower freighting costs through the consolidation of cargoes.

#### THE JAPANESE STEEL INDUSTRY AND THE CONTROL OF SHIPPING

Japan is the largest importer of Canadian oceanborne bulk commodity exports. Table 6.3 lists the major Canadian bulk commodity exports and tonnages shipped to Japan in 1977.

TABLE 5.3

#### CANADIAN BULK COMMODITY EXPORTS TO JAPAN IN 1977

Coal	10.8 million tons
Iron Ore	3.6
Grains	2.3
Forest Products	1.4
Potash	0.6
Copper Concentrates	0.2

Source: H.P. Drewry (Shipping Consultants), Trends in Japanese Dry Bulk Shipping and Trade. An Economic Study, #69, London: HPH Shipping Publications, December 1979.

#### A profile of the Japanese steel industry

Japan's steel industry ranks third in the world behind the U.S.A. and U.S.S.R. in crude steel production. Recent production levels have been in excess of 100 million tons annually.<sup>5</sup> The industry in Japan is highly

concentrated with five producers accounting for over three-quarters of the total output. They are, in order of market share: Nippon Steel (32-34%), Nippon Kokan (14%), Sumitomo Metal (12-13%), Kawasaki Steel (12-13%), and Kobe Steel (6-7%).<sup>6</sup>

The Japanese have a very advanced steelmaking process which centers on the blast furnace/oxygen converter system. This system creates a high pig iron/raw steel ratio. In generating a large demand for pig iron in the steelmaking process, large quantities of iron ore and coking coal are required. Domestic producers in Japan can supply only 1 per cent of the iron ore and 15 per cent of the coking coal requirements.<sup>7</sup>

This situation necessitates the importance of vast amounts of iron ore and coking coal. In 1977, Japan imported 133 million tons of iron ore and 61 million tons of coking coal.<sup>8</sup> Australia is the dominant supplier to the Japanese providing 50 per cent of the iron ore and 43 per cent of coking coal.<sup>9</sup> At the same time, because of their dependence on imported resources, the Japanese have made an effort to diversify their sources of supply. Sizeable tonnages of iron ore and coking coal are imported from over half a dozen countries, including Canada.

An additional feature of this import pattern is the investment the Japanese have in their sources of supply. The early 1970's witnessed a boom in Japanese overseas resource investment. The Japanese were annually opening over one hundred resource oriented development projects abroad with an annual development cost in excess of half a billion dollars.<sup>10</sup>

The investment in iron ore and coking coal production facilities is usually undertaken by the Japanese trading companies rather than the steel companies. However, the major trading companies have close links with Japanese industrial interests, including the steel companies. This

is often achieved through direct ownership of shareholdings which each have in the other. The mutual interest of Sumitomo Steel and Sumitomo Shoji Trading Company is one example.

Contracts for iron ore and coking coal are negotiated directly between the steel companies and foreign suppliers. The role of the trading companies in the import process is primarily to provide documentation. The steel companies are responsible for the shipping although a trading company may be contacted to handle an occasional charter.

The large tonnages imported and the backward integration into production facilities by overseas direct investment provide an inducement to the steel companies to become directly involved in ocean shipping. Not only can the long term employment of vessels be guaranteed because of the large base cargoes, but exclusive use on a particular trade means that the optimum size of carrier can be employed. This enables freighting costs to be closely checked by the steel companies. This is vital because the shipping costs represent a large percentage of the landed value of both iron ore and coking coal.

To illustrate, in 1978, freight rates from Australia to Japan were \$5.65 a ton for iron ore and slightly higher for coking coal, say \$7.65 a ton, due to the use of smaller vessels in the coking coal trade. In that year, the f.o.b. price for Australian lump sized iron ore was \$13.21<sup>12</sup> and \$50.75<sup>13</sup> for Austrian Goonyella coking coal. In these instances, which can be regarded as typical in Australian exports to Japan, shipping costs accounted for approximately 30% of the delivered value of iron ore and 13% for coking coal.

The Japanese steel companies are so cost conscious of the transportation costs of their imports that they have even bought on an f.o.r. (free

on rail) basis and brought their weight to bear in negotiating rail rates from mine to tidewater. This happened in Canada recently in the sale of Kaiser Resources' coking coal to the Japanese. It appears, however, that the Japanese interests were no more successful than Kaiser Resources in negotiating rail rates with C.P. Rail.

At the same time, the costs of Japanese flag shipping have risen substantially since 1970 due primarily to the increase in personnel costs. It is estimated that between 1970 and 1977, the operating costs of a Japanese flag vessel increased by 190 per cent in yen terms.<sup>14</sup> This substantial increase was attributed to a rise in the cost of Japanese crews. Japanese crews now rank among the most expensive in the world. Personnel costs as a percentage of total operating costs are now higher for Japanese flag vessels than for vessels from many of the traditional maritime countries including Norway, West Germany and Greece.

The Japanese steel companies have for the most part gone along with the rise in Japanese flag shipping costs because most of the Japanese flag vessels which they utilize are chartered for long term periods; in most cases, for the life of the vessel. Between 1970 and 1977, Japanese flag ships slightly increased their proportion of Japan's import trade from 44.6 to 46.8 per cent despite the rise in crewing costs.<sup>15</sup>

Additionally, and perhaps the most important factor which influences the Japanese steel industry to control its own shipping requirements is the complexity of the import program. Up to one-half dozen grades of iron ore and a dozen grades of coking coal are used in the Japanese steel production process. Inventory levels at the steel mills must be closely monitored. For the larger companies, this is further complicated by multiple mills. The Japanese steel companies desire to control their

shipping because economies can be achieved by closely controlling the scheduling of flows and inventory levels.

The Japanese achieve a great deal of flexibility by controlling their own shipping. Nippon Steel has nine mills. It is their common practice to assign an inbound vessel a port of call at the latest possible time, usually one or two sailing days out from Japan. In this way, they are able to control the inventory levels at the mill in a very efficient manner. In addition, the steel mills also have the option to combine different grades of iron ore or coking coal, but usually not both, from one region on the same vessel.

The Japanese steel mills prefer long term stable arrangements for their shipping requirements. The retaining of vessels by guaranteeing cargoes for much or all of the vessel's working life is probably the most favored. The vessels are commonly purpose built by shipowners for the steel companies. The shipowners receive financial assistance from the government through the Japan Development Bank. A condition of these loans is that the vessel which is being financed must have secured employment to allow loan costs to be recovered in ten years. Hence, most vessels built for use by steelmakers have lifetime contracts. In 1978, the leading steel producers had at their disposal under cargo guarantees some 112 bulk and combined carriers totalling 11.85 million dwt.<sup>16</sup>

The opportunity for Canadian participation in the shipping of Canadian iron ore and coking coal to Japan currently is very slight. The size of the Japanese steel companies, their retained shipping tonnage and the investment in Canadian sources of coking coal production by Japanese trading houses all combine to limit the opportunities for Canadian participation in the shipping of these commodities.

Producing interests are beginning to participate in ocean shipping, though it would be more accurate to say that this has occurred largely in situations where government pressure supporting the producing interests has been brought to bear on the Japanese. In 1976, the Japanese steel companies signed a long term contract with the Brazilian government controlled company, Vale do Rio Doce SA, for 380 million tons of iron ore and 99 million tons of iron ore pellets over a period of 15 years. The Japanese agreed to let forty per cent of the tonnage be shipped in Brazilian flag Val Decenave ships. The shipping revenue to be derived from the contract by the Brazilians is approximately \$1 billion.<sup>17</sup>

## Chapter 5 Footnotes:

1. Canadian Wheat Board, Annual Report 1977/78. Winnipeg: Canadian Wheat Board, 1978, p. 22.
2. "Grain Exporting Outlook Bright", Vancouver Port News, December 1978, p. 1.
3. H.P. Drewry (Shipping Consultants), Types and Sizes of Ships for Grain Trading. An Economic Study #34, London: HPD Shipping Publications, April 1975, p. 3.
4. Canadian International Grain Institute, Grains and Oilseeds, Handling, Marketing, Processing. Winnipeg: Canadian International Grain Institute, 1975, p. 190.
5. H.P. Drewry (Shipping Consultants), Trends in Japanese Dry Bulk Shipping and Trade. An Economic Study, #69, London: HPD Shipping Publications, December 1978, p. 7.
6. Ibid, p. 9.
7. Ibid.
8. Ibid.
9. Ibid, p. 17.
10. Yoshi Tsurumi, The Japanese Are Coming. Cambridge, Mass.: Ballinger Publishing, 1976, p. 37.
11. "ANL Director Meehan to Visit Japan This Weekend", The Tex Report, Vol. 10, No. 2, 336, September 14, 1978, p. 11.
12. The Tex Report, Iron Ore Manual 1977, Tokyo: The Tex Report Ltd., 1978, p. 109.
13. The Tex Report, Coking Coal Manual 1977, Tokyo: The Tex Report Ltd., 1978, p. 107.
14. H.P. Drewry (Shipping Consultants), Trends in Japanese Dry Bulk Shipping and Trade. An Economic Study, #69, London: HPD Shipping Publications, December 1978, p. 64.
15. Ibid, p. 63.
16. Ibid, p. 59
17. "Brazil Gets Her Ore In", Seatrade, October 1976, p. 31

## Chapter 6

### SUMMARY AND CONCLUSIONS

The objective of this thesis was to describe the factors which influence the decision of Canadian trading firms to exercise responsibility over the ocean shipping arrangements in their trades. From this analysis, general principles were to be developed which would apply over the wide range of situations which apply to Canadian trading firms.

The secondary aims of this thesis were to describe some of the advantages and disadvantages associated with the control of shipment by Canadian firms. In addition, some indication was to be developed regarding the extent of Canadian participation in the control of shipping in Canadian oceanborne trade.

The scope of the thesis is restricted to dry bulk commodity trading utilizing deep-sea shipping. These commodities account for nearly 90 per cent of Canadian exports and with crude petroleum account for nearly the same percentage of imports. By restricting the thesis to deep-sea trades, most waterborne trade with the United States was excluded. As Canadian trade in dry bulk commodities is heavily export oriented, the thesis was written primarily from the basis of the Canadian exporter being referred to as the seller.

### EVALUATION PROCEDURE OF THE THESIS

The information from which this thesis was written was drawn from a wide range of sources. The key source was the fifty interviews held with firms involved with the Canadian dry bulk commodity export trade.

As the subject matter was clarified and developed, separate categories of factors which influence the control of shipping were created.

Within each category, an attempt was made to identify a set of principles which would apply to the control of shipping across the broad spectrum of Canadian dry bulk commodity trade and its shipping.

#### FACTORS INFLUENCING CANADIAN CONTROL OF SHIPPING

Many factors influencing the control of shipping in Canadian deep sea trades have been analyzed in this thesis. The aim of this concluding section is to draw together the various influencing factors.

##### Institutional Constraints

The very first question which must be answered when considering the process by which a trading firm evaluates controlling the shipment of their trade is whether or not they have an option to do so. The opportunity for the trading firm to control the shipping of their trade is not always available.

In a free market situation, trade negotiations between two parties are on a commercial basis with little or no interference from government authorities. This applies to the control of shipping as well as to other aspects of trade. However, Canadians trade with many countries where governments do exercise a considerable deal of influence in trading and shipping matters.

There are a number of methods by which Canadian traders are prohibited from controlling shipping to these countries. One is to deal with government buying agencies who purchase only on terms where they control the shipping. As a matter of policy, these agencies are required to use government shipping lines or chartering agencies to supply the tonnage to meet their trade requirements. Since Canadian exporters do not have any government backing, they can either accept the terms laid down by the

foreign buyer or forego the trade. The question over control of shipping rarely assumes such importance so as to question the desire to conduct trade.

Other methods of preventing Canadian control of shipping to certain countries include direct legislation which reserves a certain proportion of trade or type of cargo for national carriers. In addition, preference for national carriers can be achieved by manipulating exchange control or finance for the trade. Import and export licences can also be controlled to suit the terms of shipment. The many methods which foreign governments use to restrict Canadian participation in the shipping of their trades is referred to as flag discrimination.

Canadian trading firms may also not have the option to participate in the control of shipping in trade with firms conducted on a commercial basis. The relative size and bargaining power of the other party may be such that the Canadian exporter has no chance of pursuing the issue. These foreign firms may have considerable expertise in shipping which they wish to utilize in their trades. They may also have a fleet of vessels which they wish to employ in their trade as well. In any case, the foreign firm is able to control the shipping of the trade with little or no negotiation on the matter.

Available evidence from many Canadian trades suggest that it is a very common occurrence for Canadian exporters to accept the foreign buyers' terms of shipment with little or no deliberation on the matter.

#### Factors Influencing Control if Control is an Option

If the control of shipping is a viable option for a Canadian exporter, the intensity with which the opportunity is pursued is basically the tradeoff between benefits and risks.

### Cost Savings

There are several ways for a firm to achieve cost reduction in shipping and distribution. The first is the charter terms on which the vessel is chartered. Depending on the state of the world charter market, the Canadian exporter may be able to transport the cargo at a lower cost than the buyer because of different vessel charter terms. The exporter may have a vessel under long term charter at very low rates while the buyer must resort to the spot market when rates are very high.

The second method of reducing shipping costs is to increase the size of the individual shipment. Economies of scale in ship construction and operation result in lower per ton costs as vessel tonnage increases. The charterer can benefit from these economies of scale if a larger vessel can be utilized in a trade. This can be achieved by increasing the size of the individual shipment, consolidating shipments on the same vessel or by consolidating other parties' cargoes on the vessel.

A third method of reducing shipping costs is through an effort to reduce port time. This can be achieved by consolidating ports of call or by utilizing special loading gear to permit faster turnaround times.

The final manner by which shipping costs may be reduced is applicable only to firms which charter vessels under long term contracts. This is done to utilize the vessel fully in both directions by carrying backhaul cargoes as well as fronthaul. By doing so, revenue from double the tonnage can be used to cover roughly identical operating costs.

The control of shipping also gives the firm the opportunity to reduce inland distribution costs. This is usually achieved through the improvement in the shore-ship interface and better scheduling of domestic physical distribution and production to meet a vessel's departure or arrival

date. Improvements in inventory control and cost savings may also result.

What are the consequences for the firm of cost reduction in shipping through the control of shipping? If shipping costs are reduced, the exporter has two options. The first is to lower his delivered c.i.f. price to reflect the lower shipping costs. Due to elasticities of demand, the demand for the product will increase and more will be sold. Alternatively, the delivered c.i.f. price could be kept unchanged and the exporter could simply realize a larger profit margin while the sales level remains unchanged. Which decision the firm will undertake depends on the policies and goals of the firm.

#### Marketing Factors

The exporting firms may also realize marketing advantages by controlling shipping. These relate principally to the service aspect. The Canadian exporter may make life easier for a potential buyer by selling on a delivered basis. In doing so, the opportunity for making a sale may be increased.

The service aspect may also centre on the type of vessel which the exporter is able to use to transport the commodity. If the buyer does not have access to a similar vessel, it may be advantageous for him to buy on a delivered basis so that his cargo will be transported in the specialized vessel.

By controlling the shipping, the exporter develops his understanding of a crucial aspect of his trade, especially as it relates to cost. Firms may engage in some c.i.f. selling to ensure that they are kept aware of the costs of ocean shipping. This knowledge will enable them to better evaluate the freight component potential buyers have built into f.o.b. offers.

### Risks From the Control of Shipping

Risk is a vital consideration which strongly influences the policy of a firm with respect to the control of shipping. Ocean shipping may be risky if the firm becomes involved.

In f.o.b. sales, the exporter's responsibility ends when the cargo is safely loaded. Under c.i.f. terms, the exporter bears increased responsibility for the safe delivery of the cargo to the port of destination. This involves the risks associated with shipping.

Common risks associated with shipping include rate fluctuations, availability of shipping space and demurrage. The latter is a problem to be concerned with in many ports around the world where Canadian cargoes are destined to.

### The Control of Shipping in Canadian Deep-Sea Trades

The negotiation of the terms of shipment is a vital part of every trade contract. The individual exporting firm must weigh in the balance the benefits and risks of controlling shipment. Evidence gathered in the course of this thesis indicates that the position of most Canadian companies is well thought out in regard to trade, markets and shipping. Where the option to control shipping is available, Canadian firms act in their own best commercial interests.

In major Canadian dry bulk commodity trades, the forest products industry is the leader with regard to Canadian control of shipping. The major reason for this is the trade structure where large Canadian exporters are selling to multiple smaller buyers in a geographical region abroad. This gives the exporter the opportunity to consolidate cargoes to utilize a larger vessel and thereby reduce the shipping costs.

Canadian exporters of iron ore, coal and grain do not face a similar

situation. Indeed, some face the reverse. They are exporting to large buyers importing from a variety of regions. Institutional factors largely regulate the control of shipping by foreign interests in these trades. Hence, little Canadian control exists in these very large bulk trades.

However, it is interesting to note that several companies involved in the export of Western Canadian coal are now becoming involved in the ocean shipping of their exports. This applies particularly in trade to new markets. In at least one case, a new contract being drawn up with the Japanese steel mills allowed a Canadian coal exporter the option to control 50 per cent of the shipping at some future date in the mid eighties.

An understanding of the factors underlying the control of shipping is vital given the large volume of these bulk trades. These bulk trades form the basis on which many people suggest developing a Canadian merchant marine. Research into the control of shipping in these trades permits a more realistic examination in regards to developing a flag fleet to service these trades.

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