c.1

THE SELECTION OF APPROPRIATE GOVERNMENT ASSISTANCE MEASURES TO ENCOURAGE THE DEVELOPMENT OF A CANADIAN DEEP-SEA FLEET.

by

Gregory L. Chiykowski
B.Comm., Carleton University, 1979

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE (BUSINESS ADMINISTRATION)

in

THE FACULTY OF GRADUATE STUDIES
Faculty of Commerce

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA
September 1980

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of Commerce

The University of British Columbia
2075 Wesbrook Place
Vancouver, Canada
V6T 1W5

Date Sept. 29/80

Abstract

The objective of this paper is to discuss "What federal government assistance measures, if any, might be appropriate for encouraging the development of a Canadian deep-sea fleet"? Appropriate assistance measures are those that are adequate, economically efficient, equitable, acceptable and reliable.

Sources of reference included government publications; newspaper articles; journals; general textbooks on shipping, economics, and tax law; personal correspondence with shipping operators and an interview program of Vancouver-based shippers and ship-operators.

Virtually all Canadian exports and imports are carried on foreign-flag vessels. Canadian involvement in international shipping is more substantial than the figures might suggest. The question nevertheless arises as to whether Canada should continue to depend on foreign-flag services in light of recent trends and developments that are occurring in international shipping.

Assistance measures can be conveniently catergorized as being either financial assistance in the operating phase, financial assistance in the capital phase, or nonfiscal assistance measures. Specific assistance measures that could be used to assist shipping include, operating subsidies, government provision of facilities and services, special subsidies, tax incentives, loan guarantees, government loans, construction subsidies, government support, or protected markets. Examples of each of these measures can be found in various forms throughout the world. In relation to other maritime nations, Canada's

assistance measures can not be considered as being very generous.

An operating subsidy program is not an appropriate form of assistance for the federal government to introduce since it encourages inefficient usage of resources, is not adaptable, and is not acceptable to any major Canadian shipping interest group. It is estimated that such a program might cost the federal government $4 to 6 million annually. The social costs of such a program are represented by the increase in shipping revenues less the increase in costs, valued at their social opportunity cost. Taxes are ignored in the analysis , except to the extent that they may affect the allocation of resources. That is because taxes represent a transfer of resources rather than an actual cost or benefit.

Tax incentives are, perhaps, the most appropriate type of assistance measure examined since they are adaptable, reliable, and can be easily implemented. Increasing capital cost allowances from a 15 percent declining balance to a 33 percent straight-line method could result in present value cash flow savings to a shipowner of $2.124 million on a $20 million vessel. The permittance of advance depreciation might be valued at $1.17 million and special depreciation at $1.25 million. A reduction in tax rates is only effective if sufficient taxable income is being earned. A reserve fund is also an appropriate assistance measure for many of the reasons cited above. Such a program might cost the government $2 to $3 million annually.

Government loan guarantees, allowing shipowners to secure better credit terms may also result in substantial benefits to

Canadian shipowners and would require a minimal outlay of funds on the government's behalf. A direct government loan program is not an appropriate measure because it is not adaptable, equitable, or economically efficient unless the government can perform the lending function more efficiently than can private industry.

Construction subsidies benefit shipbuilders, with the benefits accruing to shipowners being minimal and unreliable.

Nonfiscal assistance measures such as flag discrimination and cargo preference, are considered economically inefficient, and unacceptable. Such measures are, at the present time, too harsh a reply to the flag discrimination and cargo preference problems that are developing elsewhere in the world. The one possible exception to this may be Canadian-flag carriage of cargoes to and from the Artic regions of Canada. It is possible that the intangible benefits associated with such a venture (i.e., security, sovereignty,pride) might justify the higher costs involved.

Table of Contents

List of Figures

List of Appendices

Acknowledgement

The author wishes to thank the following people who genercusly consented to being interviewed,

G.E. Bennett (Council of Forest Industries)
W.H. McNulty (Weldwood of Canada, Ltd.)
Alistair Pollock (Council of Marine Carriers)
G.A. Adams (Canadian Transport Co.)
C.L. Jacobs (Seaboard Shipping Co. Ltd.)
E.J. Raven (Seaboard Shipping Co. Ltd.)
E.R. Sutherland (Empire Shipping Co. Ltd.)
John May (Maple Leaf Shipping)
John Pearson (formerly with Seaspan)

Thanks is also extended to H.E. Bell (Federal Commerce and Navigation), and K.C. Griffin for materials they provided in respcnse to my requests for information. In addition to thanking the members of the thesis committee the author would also like to extend a special thanks to Dr. Trevor D. Heaver, Chairman of Transportation Studies at the University of British Columbia, for the guidance, materials and technical expertise he provided during the researching and writing of this thesis.

I. INTRODUCTION

Water transportation of people and goods has always played a dominant role in Canadian history. It was instrumental in the founding and settling of Canada and has also been an important mode of transportation in the development of Canada's import and export trade. In fact, on several occasions in the past 100 years, Canada has had a merchant marine that has ranked among the five largest in the world. However, today the Canadian fleet ranks as the forty-third largest in the world and is comparable in size to the national fleets of Iran, Algeria, Libya, and Mexico.[1]

Since the end of the Second World War Canadian shippers have depended upon the competitive forces that traditionally prevail in international shipping. This practice has well served Canadian shippers in the past and could ostensibly continue to do so, providing these competitive forces remain intact. However, recent political and economic trends are developing which may seriously jeopardize the degree of competition present in international shipping. If such events are admonitions of what is to come then Canada stands in a most precarious position, vulnerable to the vagaries of foreign governments and shipowners.

The following statistics exemplify this high dependence of Canadian shippers upon foreign-flag ships;

1) Canadian-flag ships (those registered in Canada) carried 29.8 percent of Canada's international waterbourne trade by tonnage.[2] However, if trade with the United States is excluded from the data then Canadian-flag ship participation in

international cargo trade is a paltry two-tenths of one percent.[3]

2) At the end of 1978 the Canadian merchant fleet (self-propelled ships of 1000 gross tons and over on Canadian registry) consisted of 263 vessels only four of which were involved in deep-sea trade.[4]

3) It is estimated that Canadian shippers pay out annually $2.5 billion in freight bills to foreign flag vessels.[5]

4) Fully two-thirds of the Canadian-owned seagoing merchant fleet in terms of deadweight tonnage is registered in foreign countries. In fact, neither of Canada's two largest shipowning companies (CP Ships with thirty-eight vessels, and Papachristidis with twenty-one) has any ships under Canadian registry.[6]

The objective of this thesis, therefore, is to address the central question; " What federal government assistance measures, if any, might be appropriate for encouraging the development of a Canadian deep-sea fleet"?

This question gives rise to a number of important ancillary questions. What are the identifying characteristics of an <u>appropriate</u> assistance measure? What are the federal government's policies towards international shipping? What incentives, if any, exist in Canada to encourage the development of a Canadian deep-sea fleet? What hinderances to owning ships exist in Canada? How can these hinderances be removed? What are the arguments for and against a Canadian merchant marine? What are the costs and benefits to society of such a venture? What measures are currently being used in other countries to

establish, promote, and protect national fleets? And how successful would such measures be if introduced in Canada? Many of these questions will be discussed during the course of this thesis' discussion.

OUTLINE

This paper consists of four main sections; background information on shipping (Chapters II and III), government assistance measures (Chapters IV,V and VI), the selection of the most appropriate measures for Canada to take (Chapter VII), and finally the summary and conclusions (Chapter VIII).

Chapter II describes the developments that are occurring in international shipping and considers the ramifications for Canada. The present state of the world shipping markets will also be discussed in this chapter and topics such as the different kinds of shipping operations, technological advances, and major world trade routes will also be examined.

Chapter III examines the pervasive nature of Canadian shipping; the groups involved, the major shipping areas, and the nature and composition of the cargoes carried. Finally, this chapter investigates the registry of ocean-going vessels that are involved in the carriage of Canadian trade.

The second section, dealing with possible government measures to assist shipping, commences with Chapter IV. This chapter essentially generates a "shopping list" of alternative measures that could be used to establish , promote, and protect a national deep-sea fleet with an emphasis placed upon the economic implications of the various alternatives.

Chapter V examines the measures that governments in other

countries currently are using to establish, promote and protect their national fleets. If the federal government of Canada hopes to encourage Canadian participation in international shipping then it must introduce incentives that are comparable to those offered in other countries. For this reason, the operating and construction assistance programs of Brazil, France, Germany, Italy, Liberia, Panama, United Kingdom and the United States are examined

The final background chapter, Chapter VI, reviews the history of Canadian shipping policy and investigates the tax incentives and subsidy programs that exist in this country with respect to shipping. This chapter also discusses the Canadian merchant marine issue and highlights the arguments for and against a Canadian merchant marine.

Chapter VII is the core chapter of this thesis. After presenting and explaining the criteria to be used in judging the appropriateness of the various assistance measures, the Chapter then goes on to discuss the appropriateness of each individual measure.

The final Chapter, Chapter VIII, summarizes the discussion presented in Chapter VII and makes recommendations as to which shipping assistance measures would be appropriate for the federal government to introduce in the hope of encouraging the development of a Canadian deep-sea fleet.

DEFINITION OF TERMS

Before commencing with the initial chapters of this thesis it is best to define a few basic terms that are used throughout this study.

An appropriate assistance measure is defined as one that is adequate, economically efficient, acceptable, adaptable, and reliable. These traits will be discussed in greater detail, later, in Chapter VII.

"Merchant marine" can have a number of meanings but for the purpose of this paper the definition used by Transport Canada will suffice. Merchant marine will refer to self propelled ships of 1000 gross tons and over on Canadian registry.[7]

Another closely related term is "Canadian deep-sea fleet." This term, as used in this paper, refers to "seagoing vessels that are owned by Canadian-based shipowners or registered in Canada." Most of the ships operating in Canadian inland waters (ie. Great Lakes and St. Lawrence Seaway) or for coastal trade are not considered as part of the deep-sea fleet because they do not possess ocean-going capabilities.

LIMITATIONS OF THE STUDY

Material for this thesis was drawn from several sources; journals, newspapers, Transport Canada publications, assorted shipping and economics texts, various government documents, and personal interviews. The intent of the interviews was to collect first-hand information on shipowners' viewpoints concerning the subject of a Canadian deep-sea fleet. Due to time and financial constraints only a limited number of interviews were conducted. Fortunately it was possible to augment the interview program with additional information obtained from a recent Transport Canada publication entitled Measures to Encourage the Gradual Development of a Canadian Deep-Sea Fleet - Industry Submissions.

This publication contains briefs submitted by some of the major parties involved with Canadian shipping concerning the subject of a deep-sea fleet.

Government assistance programs of only the major shipping countries were examined in this thesis.

Finally, as was stated previously, this thesis is concerned only with vessels possessing ocean-going equipment and capabilities. Vessels that operate solely on the Great Lakes and St. Lawrence Seaway, or in coastal trade are not included in this study's discussion.

In spite of these limitations it is hoped that this thesis will provide timely and relevant information and recommendations on the possible measures that the federal government could take to encourage the development of a Canadian deep-sea fleet.

II INTERNATIONAL SHIPPING

Shipping is "the transportation of goods by water" and is perhaps the world's most important mode of travel. It has been estimated that "the transportation work done in ton-miles performed by ships is twice as great as that carried by all the world's roads, railways, and airways put together."[1] Since World War II the amount of shipping transportation performed has expanded sixfold, and has increased every year with the exception of 1975.[2]

There are many kinds of shipping but this thesis is concerned primarily with deep-sea shipping; the carriage of seaborne imports and exports. This chapter describes the world of deep-sea shipping and presents much of the background information that is pertinent to the issues discussed in subsequent chapters. In this chapter, the nuances of international shipping are examined - how it works, the cargoes and trade routes involved, and the various types of operations.

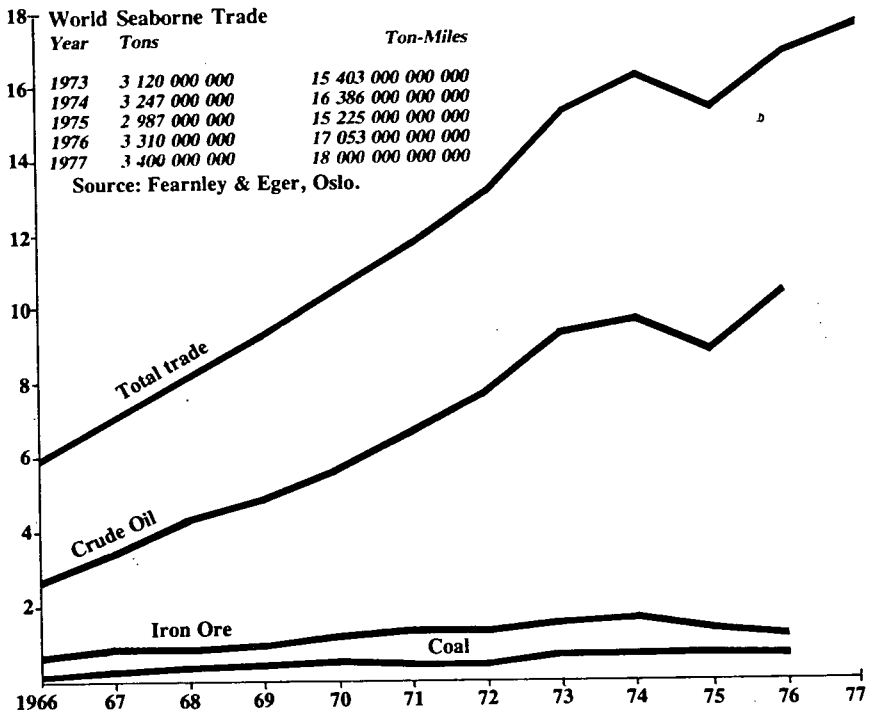
International shipping is a dynamic and competitive industry, one that has been ruled by the laws of supply and demand and free of government intervention. However, recent events have begun to erode the traditionally competitive base of the world shipping markets. These trends and developments will undoubtedly affect Canadian interests in the future. Because of their importance to Canada, the entire final section of this chapter is devoted to a discussion of these trends and how they will affect the formulation of Canadian shipping policy.

1. THE WORLD FLEET AND INTERNATIONAL MARKETS

The world fleet in 1978 totalled nearly 630 million deadweight tons (d.w.t.).[3] This total consisted of tankers (accounting for fifty percent of the total tonnage), bulk carriers (twenty percent), combination oil/bulk carriers (eight percent), cargo liners (ten percent), tramp ships (ten percent), and special purpose ships (two percent).

The world merchant fleet has been growing at a phenomenal rate as can be seen in figure 2.1.[4] During the 1970s shipping ton-miles performed increased by about ten percent per annum.

World Seaborne Trade in MMMM ton-miles



The increase in growth has been made possible by the technological advances that have recently occurred in international shipping. As ships became larger, faster and more specialized it became economically feasible to ship larger loads longer distances, hence, explaining the dramatic increase in recorded ton-miles.

A convenient way of classifying the many types of cargo

carried in international shipping is by way of a bulk, tanker, and liner categorization.

Bulk cargoes include raw materials, grain and other agricultural products, and forest products. The most important raw materials carried are iron ore and coal with the major trade routes being similar for both commodities; the United States and Canada to Japan, Australia to Japan, West Africa and Brazil to Europe (iron ore) and Eastern Europe to the rest of Europe (coal). Other raw materials carried are bauxite, phosphates, manganese ore, salt, and gypsum. Grain is another important bulk commodity with most shipments originating in the grain surplus countries of the United States, Canada, and Australia. These shipments find markets in Japan, Europe, India, China, and the Soviet Union. The third class of bulk products is lumber and forest products which account for nine percent of all seaborne tonnage carried. Half of the forest product tonnage is loaded in the United States and Scandanavia, and is destined for North America, Europe, and Japan. A summary of these major bulk commodities carried is presented in appendix 1.

The second general commodity group is tanker cargo, or liquid bulk products. By far the most important liquid bulk commodity is oil and related petroleum products. In fact, oil tankers comprise over one-half the tonnage of the world fleet. During the period 1966-1973 the seaborne transportation of oil (in ton-miles) increased by 250 percent. Although a slight decline in oil tonnage carried was experienced during the recession of 1973 and 1974, oil shipments have continued to grow steadily, at an average rate of about six percent per annum. The

major oil exporting regions are the Middle East, South America and part of Central Africa. Fifty percent of this cargo is destined for Europe twenty percent to Japan, ten percent to the United States and twenty percent to other regions.[5]

The final general category of goods carried are dry cargo commodities, which includes mainly manufactured and intermediate goods. These dry cargo items are carried on container ships, general cargo ships and small-sized bulk-carriers. Although these cargoes only account for ten percent of seaborne tonnage they are important because they account for approximately two-thirds of the value of all international shipments.

2. THE NATIONALITY AND REGISTRATION OF SHIPS

The shipping industry has no single, formal, coherent framework of law and public policy to control its operations.[6] Traditionally it has been the responsibility of the country in which the ship is registered, to determine the rules under which ships will operate. Each country has "the undisputed right ... to set up such prerequisites for the assumption of its nationality as its concept of national welfare dictates."[7] Basically, each sovereign state has the right to determine who can fly its national flag, and what rules shall govern their operations. The laws concerning the registration of ships are often closely related to the economic, political, and military interests of the respective country.[8] and so it is not surprising that a large difference in registration requirements exists from country to country. At one end of the spectrum are the so-called "open registry" countries, such as Panama, Liberia, and Singapore where the registration rules are few. In

Liberia, almost any vessel is eligible to be registered in that country;

> a)seagoing vessels, regardless of tonnage, wherever built, owned by a citizen of Liberia or of any foreign country. The terms "citizen" and "national" shall include corporations, partnerships and association of individuals.
> b) any vessel of twenty net tons or over engaged in trading on the inland water of Liberia or between ports in Liberia.[9]

In Panama ships that are "wholly or partly the property of Panamanian citizens or of foreigners domiciled in the Republic with more than five years of residence therein" are eligible for registration in that country.[10] Needless to say establishing residence in Panama is a mere formality.

In half of the world's maritime countries, 100 percent national ownership is still a prerequisite for the registration of ships while in other countries partial ownership will suffice.[11] In Italy, Mexico, Peru, the USSR, and Poland there is a registration requirement that the crew must be nationals of that country. In some countries there are no such requirements while in others there is the stipulation that a certain percentage of the crew or officers must be nationals. In only a few countries is national registry restricted to domestically constructed vessels.[12]

A closer examination of the world fleet emphasizes the importance of the so-called "flags of convenience" countries in international shipping. Taken collectively the four open-registry countries of Liberia, Panama, Singapore and Cyprus, constitute approximately thirty percent of the total tonnage of the world fleet and fifty-four percent of the total world tanker fleet. Three of these countries, Liberia (1) , Panama (6) and

Singapore (13) rank among the top fifteen national fleets in the world. Flags of convenience offer many advantages to ship operators of various nationalities and these advantages are examined in greater detail in a subsequent section in this chapter.

The most important national fleets in terms of registered tonnage are, in decreasing order, Liberia, Japan, Greece, the United Kingdom, Norway, Panama, the USSR, the United States, France, Italy, the Federation of Germany, Spain, and Singapore. As can be seen in Appenix 2, the Canadian fleet is considerably down the list and currently stands in forty-third place.

3. SHIPPING OPERATIONS AND THE ECONOMICS OF SEA TRANSPORTATION

There are three basic ways that a company may be engaged in shipping, either as a ship operator, as a shipowner or as an operator-owner.

As a ship operator, the company earns revenue by transporting shippers' goods to market at rates and terms specified in the contract between them. Expenses incurred may be of three types, daily running costs (i.e., crew wages, social security contributions, payroll taxes, paid leave, food, overtime), voyage costs (i.e., bunkerage, harbour and canal dues, loading/unloading fees) and and lease payments for the use of the ship. Daily costs are of a semi-fixed nature and are incurred whether or not the ship sails. Voyage costs, as the name suggests are mostly variable costs and are the direct result of a voyage being undertaken. Finally, lease payments are of a fixed cost nature and may extend to fifteen or twenty years. Operators, if they hope to be successful and earn a

profit, must choose their markets with care since the rates in many sectors are very volatile. Water transportation, like any other mode of transportation, is a derived demand, and shipping profits will generally follow a similar trend to that exhibited by the industry it is servicing.

The second type of involvement in shipping is as a shipowner. The shipowner, usually leases or charters out ships, and receives lease payments from the ship operators (lessee). Depending upon the nature of the lease the only expenses a shipowner may have will be of a capital nature (i.e. depreciation, interest payments, taxes on profits, and possibly insurance premiums). If the lease payments received are greater than the repayments to service the debt then a profit is recognized. With ship construction costs ranging from $12 to $100 million (depending on the size and type of vessel) it is common practice for shipowners to secure ten to fifteen year leases from ship operators even before construction of the ship commences. Shipbuilding prices are very volatile and a shipowner who times his purchase well can make tremendous profits in the well-established second-hand market that exists for ships.

The third option for engaging in shipping is as a shipowner-operator. In this case the firm owning the ship also operators it, thus no charter payments ever change hands. The shipping firm earns revenue in the form of rates charged for the carriage of goods and through the sale of any ships it may possess. Any revenues are offset by daily running expenses, voyage expenses, and capital expenses.

The previous discussion is only a general description of

how shipping operations function. Who actually pays what costs is determined by the type of charter contract that exists between the two parties. The three types of charters are; 1) bareboat charters, 2) time charters and 3) voyage charters. In the bareboat charter the shipowner (lessor) leases the vessel to the ship operator (lessee) who is then responsible for providing the crew, fuel, supplies, and the supervision of the vessel. The time charter is an arrangement whereby the lessee is leasing cargo space for a specified period of time and pays the fuel and cargo carrying expenses. The shipowner pays the crew's wages, food, benefits and insurance. The last type of charter agreement is the voyage charter where the ship operator leases the ship for a specified voyage between two ports. In these kind of arrangements the operator assumes no responsibility for the operation of the ship.

S.A. Lawrence in his book International Sea Transport: The Years Ahead cites three types of service in which a ship may be engaged.[13] These classes are by no means mutually exclusive and the demarcation between the classes is sometimes difficult to determine. The three classes of service are tramp, liner, and industrial.

Tramp services can be defined as "carrying cargoes on a time or voyage charter basis usually catering to one single customer and carrying one or two commodities at a time."[14] Tramp services generally "follow the action" and carry whatever cargo needs to be moved at the time. Tramp services are best differentiated from liner services by the fact that they are irregular in nature and the routes serviced may frequently

change.

Liner service is "traffic between designated ports to a published schedule with a frequency of a least once a month."[15] Liner services carry the cargo of many shippers and sail on a regular basis whether or not the ship is fully loaded.

The third category of services offered is industrialized services. This refers to the situation where the shipowner is also the owner of the cargo being carried. This type of service is most common with large resource companies, especially the major oil companies.

To service the many different kinds of markets, there exist many different types of ships. These include tankers, bulk-carriers, refrigerator ships, vehicle carriers, container ships, combination ships, and other specialized vessels. Tankers were previcusly discussed in some detail already. They are the largest type of vessel and can be over 480,000 d.w.t. The predominant cargo carried by these kinds of vessels is oil , however, other liquid cargoes may also be carried, such as chemicals, liquid nitrogen gas, and even wine. Bulk-carrier ships may be general purpose, ore carriers, colliers, car carriers, cre/cil, and ore/bulk/oil (OBO), or other specialized vessel types. Finally, there exists a myriad of vessel types that make up the freighter classification. These include; general purpose ships, refrigerator ships, container ships roll-on roll-off (RoRo) vessels, barge carriers, and timber and newprint carriers. A fourth class might also be added to include non-merchant special purpose ships such as ice-breakers, survey ships and support ships.

The last topic to be examined in this section on shipping operations, is that of liner conferences. A liner conference is " an organization whereby a number of shipowners offer their services on a given sea route on conditions agreed by the members."[16] Many conferences co-ordinate the sailing schedules of their members, assign ports of call, handle complaints, and monitor business practices in that trade.[17] Today, there are over three hundred such conferences that act in a cartel-like manner, fixing rates and charging what the cargo will bear. However, these liner conferences cannot behave in true monopolistic fashion since there exists competition from tramp vessels, other conferences, owner-operators and other modes of transportation. The attractive feature of the conferences is that they offer regular and efficient services at fixed rates, thereby catering to the trades that require reliable transportation.

4. MODERN TRENDS AND DEVELOPMENTS

The Transport Canada publication, A Shipping Policy for Canada provides an excellent summary of the major trends and developments that are occurring in shipping. These include; i) technological, ii) UNCTAD' Liner Code, iii) flags of convenience, iv) flag discrimination and v) the rise of national fleets.

A. Technological

Ships today are larger, faster and more specialized than they were ten years ago. During the decade 1962-1971 the average

size of new oil tankers increased almost fivefold, from 28,000 d.w.t. to 130,000 d.w.t. During the 1960s the largest tankers were around 50,000 d.w.t. Today, the new supertankers are approaching the 500,000 d.w.t. mark, a tenfold increase. The rapid increase in ship size is most apparent with tanker vessels, however, similar statistics show that over the same ten year period, the average dry bulk carrier increased from 20,000 d.w.t. to 55,000 d.w.t. Today, bulk carriers may be as large as 150,000 d.w.t., although the more common size is in the range of 60,000-70,000 d.w.t.

Another increase in carrying capacity has come about in the form of faster ships. In 1949, the average speed of a tanker was fourteen knots, twenty years later it had increased to sixteen knots. The increase in speed, has resulted in faster voyage times which has increased shipping capacity. Vessels are also more specialized than they used to be in two respects, the nature of work they are designed to perform, and the use of automated equipment. Today, special vessels exist for carrying cars, lumber, coal, liquid nitrogen, whereas before these items would have been carried by general cargo vessels. The growth of container traffic is another example of the new specialized shipping techniques. Today, a large containership capable of carrying 2,000 containers and costing $50 million, can quicken the loading/unloading operations by a magnitude of five. Shipping operations are also becoming more automated. The most obvious cases of this are the new computer-monitored propulsion systems, mechanized handling equipment, computerized route planning, and advanced sonar and radar systems.

The increase in vessel size, speed and specialization will undoubtedly affect Canadian interests. The primary question is "Can Canadian ports keep pace with the rapid development?" If the answer is "no" then Canadian ports might be bypassed in favour of modernized American ports capable of handling the newer, and larger ships. Such a scenario would result in higher rates for Canadian shippers and ultimately in higher prices for Canadian consumers.

E. The UNCTAD Liner Code

The United Nations Conference for Trade and Develcpment (UNCTAD) was formed "to consider means of accelerating the econcmic develcpment of less developed states through revised international trade policies."[18] A special committee was formed to investigate the role that shipping could play towards the attainment of this objective. One of the proposals suggested by this committee was the Code of Conduct for Liner Conferences adopted by UNCTAD in April 1974 but not yet ratified.[19] The three main objectives of the Code are;

1) to facilitate the orderly expansion of world seaborne trade.

2) to stimulate the develcpment of regular and efficient liner service adequate for the requirements cf the trade concerned and

3) to ensure a balance of interests between suppliers and users cf liner shipping services.[20]

One of the main features of the Code is the proposed 40-40-20 rule that would apportion the carriage of liner trade cargo in the follcwing manner; forty percent of the tonnage would be carried by the flag ships of each of the trading countries and

the remaining twenty percent would be left for cross-traders (vessels flying the flag of a country other than the exporting or importing country).

If passed,[21] the UNCTAD Liner Code would adversely affect Canadian interests. The Code would severely restrict the operations of the traditional cross-trading nations upon which Canada is very dependent. Without a national fleet, or designated Canadian carriers, the implementation of the Liner Code would force Canada to seriously re-evaluate its shipping policies and practices.

C. Flags Of Convenience

Forty percent of international shipping is conducted under the flags of so-called "convenience countries" which have been defined as countries where;

> 1) registry allows ownership and/or control by non-citizens
> 2) access to registry is easy.
> 3) receipts from registry constitute a substantial component of the national income and balance of payments
> 4)taxes on income from shipping are low or non-existent.
> 5) manning of ships by non-nationals is freely permitted.
> 6) the country has neither the power or the administrative machinery effectively to impose any national or international regulation.[22]

The most common flag of convenience countries are (international ranking indicated in brackets), Liberia (1), Panama (5), Singapore (13), Cyprus (26), Bermuda (27), Cayman Islands and the Bahamas (88). The majority of the vessels registered in these countries are oil tankers, followed next by bulk carriers. In the 1960s it was estimated that approximately seventy-five

percent of the flag of convenience vessels were owned by American and Greek interests. Unfortunately no reliable statistics exist that reveal who today owns the flag of convenience fleets.

Why are flag of convenience countries so attractive to foreign shipowners? The prime attractions seem to be; i) easy registry, ii) financial benefits arising from the deferral or avoidance of taxes, iii) lower crewing costs, iv) easy foreign currency exchange, and v) lax incorporation procedures. By establishing a head office in an 'open-registry' country, a company can defer taxation on profits until they are repatriated. These tax-deferred profits in the meantime can be reinvested in shipping operations and are, in a sense, interest-free loans from the government.

Traditionally, the flag of convenience vessels have provided Canadian shippers with a reliable source of low-cost tonnage.[23] However, trends are developing that may jeopardize their existence (i.e., see previous discussion of the UNCTAD Liner Code). The question arises, "What is Canada to do if measures are passed that inhibit the registration of flag of convenience vessels?"

D. Flag Discrimination

Flag discrimination refers to a variety of acts and pressures exerted by government to direct cargoes to ships of their own flag, regardless of the commercial considerations which normally govern the routing of cargoes.[24] Flag discrimination practices can be examined under five general

groupings, those related to the apportionment of trade, those involving access to port facilities, those that govern access to cargo, those affecting trade financing and various indirect measures that favour the usuage of national flag vessels.[25]

Flag discrimination measures that affect the apportionment of trade include bilateral agreements, the unilateral allocation of cargoes to national-flag carriers, and the requirement that government cargoes be carried in national bottoms. Many of these measures are described in further detail in chapter IV.

Practices related to port accessibility include discriminatory port charges, and special foreign-flag taxes and dues. Discriminatory prices may also exist for the use of port facilities and services such as harbour, lighthouse and pilotage services.[26] National-flags vessels may also enjoy preferential berthing assignments and customs clearance.

Access to cargo may be restricted either wholly or in part to national-flag vessels. One of these measures has already been discussed, that of government cargoes. Other countries may exclude foreign ships from competing for certain commodities, through the issuance of import licenses. Other regulation falling into this grouping include rules governing the delivery of cargo (there may be differential rates for inland transportation), cargo pooling requirements (guaranteeing national carriers a percentage of the traffic), and the imposition of extra duties on imports not using national-flag carriers.

In the fourth grouping, practices concerning trade finance, are provisions that extend insurance concessions to national-

flag vessels, currency restrictions and exchange controls, special tax concessions for national shipping companies, and special tax inducements to use national-flag vessels.

Indirect measures include government pressure rather than direct regulations. In some countries (Columbia, South Korea, Thailand and Taiwan) exports are supposed to be shipped in national vessels on a c.i.f. basis, while imports are handled on an f.c.b. basis.[27] This ensures that domestically incorporated businesses control the routing of cargo. Another indirect measure is the establishment of a government agency to control cargo routing and transportation.

A study done by Phillip Franklin, Economic Impact of Flag Discrimination estimated that 20-25 percent of the general cargo tonnage, 10-12 percent of the dry bulk tonnage, and 2-3 percent of the world's petroleum products were allocated through cargo allocation prodedures favouring the national flag. It is estimated that such practices have resulted in extra shipping costs of $500 million to $1 billion.

Another study done by S.R. Hill[28] examined the effects of flag discrimination upon Canadian interests. The study makes mention of several incidents where Canadian ship operators were precluded from carrying certain cargoes to or from particular countries. Flag discrimination is in direct opposition with current Canadian shipping policy which advocates free competition. Canada should be concerned with this problem since it restricts the availability of cross-trader services. The major problem faced by Canada is how the government can discourage or combat flag discrimination practices. In A

Shipping Policy for Canada[29] it is stated that the government intends to introduce legislation that would protect Canadian interests from such practices. Just how this is to be accomplished remains to be seen.

E. The Rise Of The National Fleets

In recent years there has been a dramatic expansion in government-backed national fleets. This trend is obvious among two particular groups; the Council of Mutual Economic Assistance (COMECON) alliance countries and the developing nations.

The COMECON countries are Bulgaria, Romania, Hungary, Czechoslovakia, Poland, the USSR and East Germany. Of these the U.S.S.R. has experienced the fastest growth. Between 1966 and 1976 the Soviet fleet more than doubled its tonnage from 9.4 to 20.6 million g.r.t.[30] and was expected to expand a further twenty-five percent over the period 1976 to 1980. In 1977 Soviet ships carried over 2.5 million tons of Canadian imports and exports. Other COMECON countries carrying over 200,000 tons of Canadian cargo were Poland and East Germay. Taken collectively the COMECON countries carried 1.1 percent of Canadian imports and 2 percent of its exports.

The nationally-backed fleets of Yugoslavia and China are also active in the transportation of Canadian imports and exports.

Because the government-backed fleets are not required to cover expenses of a capital nature they are often able to undercut the competition of other traditional maritime nations. This has enabled these state-backed fleets to secure significant

portions of traffic on certain routes which has become a source of consternation to other maritime nations.

The major question to be addressed by the Canadian government is "Should we continue to rely on Soviet and other COMECON countries' vessels to the extent that we now do?" The question is not an easy one to answer and the trade-off seems to be between national security and a cheap source of shipping.

The development of national fleets is not confined to those of the Soviet Union and the Eastern European countries. Most of the South American countries (especially Brazil, Peru, and Columbia), India, and some of the Asiatic countries are also attempting to establish national fleets of their own. In some cases these attempts are being fostered by flag discrimination practices, government ownership, and subsidies. These assistance measures are examined in greater detail in chapter V. The implications of the increase in the state-backed fleets are similar to those discussed earlier; Canadian ship operators are being excluded from competing in particular markets, and cross-traders are being squeezed out of these markets.

These are the trends and developments that are occurring in shipping. Undoubtedly they will have a profound affect on the future formulation of Canadian shipping policy.

III. THE SHIPPING INDUSTRY IN CANADA

Canada has one of the world's longest coastlines (36,000 miles) and is also endowed with perhaps the world's best inland water transportation systems (the Great Lakes and the St. Lawrence Seaway). In terms of seaborne tonnage, Canada ranks tenth in the world.[1] And yet despite these rather impressive statistics, Canada only has the forty-third largest national fleet in the world. What factors can explain the relatively insignificant size of the Canadian national fleet?

Two factors might be cited as explanations. First, the small size of the current Canadian fleet might be attributed to historical events and shipping policy decisions that occurred in the past. Second, it is possible that the statistics regarding the national fleet do no reveal the entire story.

Both these factors are examined in this chapter. This chapter also reviews the major types of Canadian shipping, the cargoes carried, the markets serviced, and the companies involved. The concluding section to this chapter is reserved for a general discussion on the various groups that are involved, in one aspect or another, with Canadian shipping. As we shall discover, the Canadian presence in deep-sea shipping is considerably more significant than the statistics suggest.

1. BRIEF REVIEW OF CANADIAN SHIPPING HISTORY

Back in the nineteenth century, before the invention of the steamship, Canadian ships were considered among the finest in the world. Throughout the Maritimes, shipyards were busily constructing vessels to be used for fishing and commercial

trading. However, the introduction of the steamship put an end to Canadian shipbuilding supremacy. Without a well established steel industry, Canadian shipyards could not hope to compete against the more industrialized nations. The shipyards once so busy were now quiet.

It was the outbreak of World War I that provided the impetus for the rebuilding of Canadian deep-sea fleet. Orders for new ships flooded in from many countries, especially from Britain; "Within twelve months forty-two freighters between 2,000 and 10,000 tons were delivered to Britain."[2] Canadian government officials, determined to keep the shipyards humming, introduced in 1917, a comprehensive shipbuilding program program. The ships constructed under this program were to be run under the auspices of the federal government through the Canadian Government Merchant Marine Ltd. (CGMM).

After the war the CGMM found itself unable to maintain its large wartime fleet and accordingly sold many of its vessels before eventually going out of business in 1936. By 1939, the Canadian deep-sea fleet consisted of a mere twenty-nine ships.

The next stimulus for the Canadian fleet was again provided by the war, this time World War II. The government once again became involved in shipping and many Great Lakes vessels were requisitioned, modified and put into active deep-sea service. The War Time Shipping Limited was established to supervise the new shipbuilding effort, and in 1942 the Park Steamship Company was formed to administer ships under Canadian registry. By the end of the war, Park Steamships controlled 150 ships and Canada was ranked as having the fourth largest fleet in the world.

After the war, the Canadian Maritime Commission was established. Its mandate was to "determine and implement measures by which the fleet could best be established on a permanent basis."[3] After 1948, what remained of the Park Steamship Company was incorporated into the Canadian Maritime Commission.

A buoyant shipping market, experienced after the war managed to keep the large Canadian war-time fleet fairly active, however, all good things must come to pass, and so it was with the halycon days of the Canadian national fleet. World shipping markets went into a slump and the government was pressed to introduce the Replacement Plan (1949) which enabled owners to sell their ships to foreign interests provided that the proceeds were used to purchase Canadian-built and registered vessels. Another measure, the Transfer Agreement allowed Canadian ships to be transferred to British registry. Both these government programs lasted until 1961 by which time 211 ships had been sold under the Replacement Plan and 219 had been transferred under the Transfer Agreement.[4] By 1961 the Canadian merchant marine was but a shadow of its former size.

The decline of the merchant marine did not stop there, however. In 1969, the Canadian fleet had fallen to twenty-sixth place in terms of national tonnage registered, to fortieth place in 1975, and as of April, 1980 the Canadian fleet was ranked as the forty-third largest national fleet.[5]

At the end of 1978 the Canadian merchant fleet numbered 263 vessels. A breakdown of the fleet shows that eighty-three of these vessels were operating along the Atlantic Coast, thirty-

six on the Pacific Coast, and 140 on the inland waters.[6] Only four vessels were engaged in regular deep-sea trade. The Canadian registered deep-sea fleet consisted of three dry-bulk carriers (78,500 d.w.t.) and one tanker (37,000 d.w.t.) for a total tonnage of 125,5000 d.w.t. A more detailed breakdown of the Canadian fleet is contained in Appendix 3.

These statistics give the impression that Canada has little, if any, control over her international seaborne trade. Fortunately, the situation is not as ominous as the numbers might suggest. Canadians are involved in international shipping in many ways. For example, there are many Canadian shipping companies operating "off-shore" as we shall see in the ensuing sections.

2. SHIPPING OPERATIONS IN CANADA

Canadian shipping operations can be classified as being either domestic, transborder, or deep-sea. Each type of operation is unique in the type of commodities carried, the markets serviced, or the design of vessel used. These three types of operation are examined below[7]

A. Domestic Shipping

Domestic cargoes are those that are transported between Canadian ports. Last year these cargoes totalled 120 million tons, with ninety-five percent of this total being carried by Canadian-flag ships. The principal cargoes carried were fuel oil, logs, gasoline, iron ore, other ores, and grains. In fact, these commodities listed accounted for eighty-six percent of

total domestic waterborne tonnage. The five major domestic shipping regions are; the East Coast, the St. Lawrence-Great Lakes, the West Coast, intercoastal and Arctic.

By far the most important of these areas is the St. Lawrence-Great Lakes region which accounts for fifty-five percent of the total domestic tonnage moved. The major commodity routes are; grain from Thunderbay to the St. Lawrence ports, iron ore from the St. Lawrence ports to the Lakes, and petroleum products from the Lakes and Quebec ports to local destination.[8] Most of these cargoes are carried in specialized bulk-carriers, and small coastal tankers which are generally restricted to inland operations. However, vessels are now being designed that have both inland and deep-sea capabilities. The major operators involved in Great Lakes shipping include Canada Steamship Lines, Upper Lake Shipping, Algoma Central, the Hall Corporation and Misener Transportation (see appendix 4).

The next most important domestic shipping region is the East Coast. The cargoes carried consist mainly of fuel products, local pulpwood shipments, and general cargo. The East Coast fleet consists of a variety of vessels; small general cargo vessels, tugs and barges, specialized roll-on/roll-off vessels and medium-sized tankers. Principal ownership of the East Coast operations is by the Irving Group, Chimo Shipping, Clarke Transport, Imperial Oil, and Branch Lines.

The West Coast fleet consists mainly of vessels that service small coastal communities, and those that transport resources to refining destinations. The major commodities carried are logs and pulpwood, sand and gravel, fuel oil, lumber

and coal. Of the thirty-six vessels operating on the West Coast, twenty-eight are ferries, three are general cargo, two are dry-bulk carriers, two are tankers and one is a passenger vessel. The prominent operators in this region are; Rivtow Straits, Seabcrd, and Seaspan International. In addition to these thirty-six self-propelled vessels there are 935 non self-propelled vessels, consisting mainly of barges and tugs.

Intercoastal shipping is rather insignificant in terms of tonnage. The few shipments that are made are generally from the Pacific to Atlantic Coast and consist of mainly coal or petrcleum cargoes.

Currently, the total amount of cargo being carried in the Arctic is small, amounting to 1.5 million tons in 1976. These cargc shipments consisted of grain shipments from Churchill, mineral extractien movements from the Eastern Arctic, resupply operations for northern communities and traffic along the MacKenzie River. Canadian-flag ships carry most of the resupply and MacKenzie River traffic, while foreign-flag vessels dominate the shipments of grain and minerals.

Althcugh cargo carried to and from the Arctic regicns is still rather insignificant in terms of tonnage the region is, nevertheless, important to Canada for several reasons. First, Arctic shipping helps to establish and protect Canadian scvereignty in the north. Second, the area contains huge untapped deposits of oil, gas and valuable minerals. Third, there have been recent discussions regarding the usage of the Northwest Passage as an international shipping route. These factors tend to suggest that Arctic shipping will take on an

increasingly important role to Canada, both in terms of commercial operations and national sovereignty.

The government, perhaps realizing the future importance of Arctic shipping, has recently become directly involved in Arctic shipping operations. It is a fifty-one percent owner in Canarctic Shipping Company Ltd. which owns and operates the M.V. Arctic, the world's first ice-breaking bulk-carrier.

B. International: Transborder

In 1978 shipments between Canadian and U.S. ports amounted to 72.6 million tonnes[9], two-thirds of which was carried by Canadia-flag ships. A closer examination of the composition of international-transborder shipments reveals that 48.3 million tonnes, or two-thirds of the total transborder tonnage was carried on the Great Lakes. Transborder traffic between the St.Lawrence-Maritimes to U.S. Atlantic and Gulf ports accounted for a further twenty-two percent of the the total. The balance of transborder traffic, eleven percent, occurred between British Columbia and United States' ports.

The major transborder shipments on the Great Lakes were grain and iron ore. Canadian-flag vessels carried an astounding 84.3 percent of the total transborder Great Lakes tonnage. On the Atlantic coast, shipments consisted primarily of mineral, petroleum and forest products, most of which were carried by foreign vessels. Finally, on the Pacific coast Canadian ships carried approximately two-thirds of the transborder tonnage which consisted of mainly lumber and coal shipments.

C. Canadian Deep-sea Shipping - Non U.S.

In 1977, Canada's deep-sea trade was valued at $25 billion; $12.7 in exports (non U.S.) and $12.3 in imports (all modes). Canada's most important trading partners, in terms of cargo value, were, Western Europe (40%), Asia (27%), South America (11%), and the Middle East (8%).

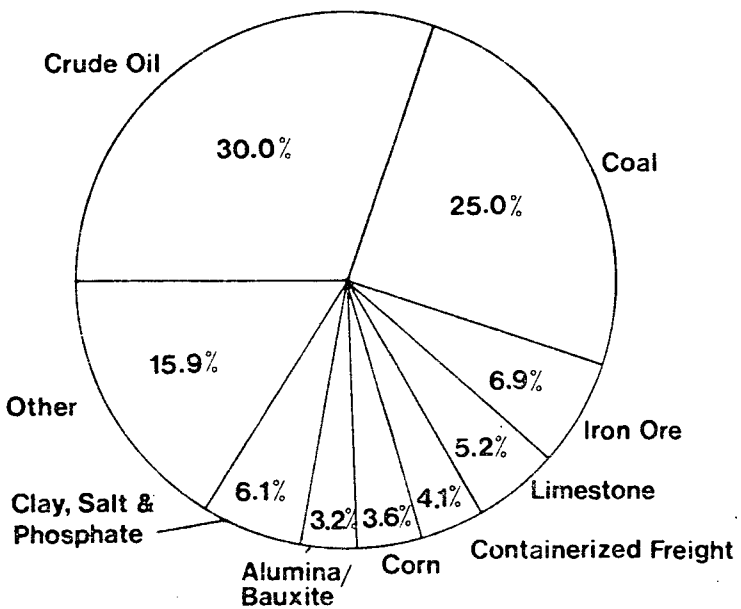
Figure 3.1 presents a breakdown of the major commodities loaded and unloaded at Canadian ports in 1976. As can be seen, the most important commodities loaded in Canada in terms of tonnage were, iron ore (39.7%), wheat (10.1%), coal (8.5%), and lumber (3.7%). For commodities unloaded the corresponding percentages were crude oil 30 percent, coal 25 percent, iron ore 6.9 percent, and limestone 5.2 percent.

The most recent figures for 1979 show that grain shipment represented about sixteen percent of overseas exports and were valued at $2.8 billion.[10] Most grain was sold on an f.o.b. basis.[11] Lumber exports products were valued at $1.1 billion in 1979 and were sold mainly on c.i.f. terms (cost, insurance and freight).[12] Coal exports for 1979 were valued at $731 million and were sold primarily on an f.o.b. basis.

The nature of Canadian deep-sea trade patterns results in an imbalance of export/import shipping operations. For example, most Canadian dry-bulk exports are destined for Japan and the United Kingdom, however, most of our dry-bulk imports originate from the Carribean area. This makes it difficult to procure backhaul cargoes, and many ships must make the return voyage home in ballast.[13] In the liquid bulk trade, most Canadian imports originate in the Middle East and South America, while

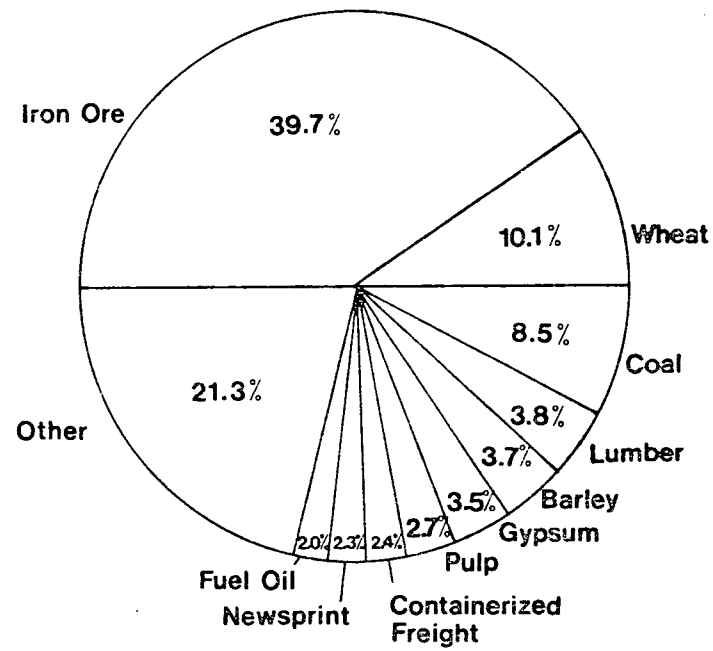
CANADIAN INTERNATIONAL SHIPPING

TOP TEN COMMODITIES UNLOADED (1976)
Percent of Total



Total Unloadings	62.3 Million Tons
Top Ten Commodities	52.4 Million Tons

TOP TEN COMMODITIES LOADED (1976)
Percent of Total



Total Loadings	126.6 Million Tons
Top Ten Commodities	99.6 Million Tons

Source: A Shipping Policy for Canada. Transport Canada, TP-1676
Minister of Supply & Services Canada, 1979, p.5.

Canadian liquid exports to these areas are very small. Neo-bulk products[14] (forest products, iron ore, asbestos, and aluminum) are exported from Canada to major markets in Western Europe and the United States while Canadian neo-bulk imports come mainly from Japan and Western Europe. Unfortunately, it is also difficult to secure backhaul cargo, even on these routes, since each different commodity transported requires specialized equipment and ships. Containerized cargo is primarily restricted to East coast operations and enjoys a relatively balanced trade flow. However, imbalances still exist on some routes such as found on the Canada-Britain container route. On this particular route,

> Only 11 percent of the tonnage moved from the Atlantic Region to Britain was containerized. On the other hand, more than 90% of the tonnage unloaded in the region from ships coming from Britain was containerized."[15]

The nature of Canadian ocean-trade routes prompted the following conclusion in A Shipping Policy for Canada:

> In summary, Canadian deep-sea trade is characterized by imbalances in the direction and nature of cargo flows as well as a difficulty in securing compatible and economical backhaul cargoes.[16]

Canadian-flag participation in the movement of non-U.S. deep-sea trade is negligible, totalling only 200,000 tons or two-tenths of one percent of total tonnage carried. A large proportion of Canadian ocean-going trade is carried in vessels registered in the so-called flag of convenience countries. In fact, over one-half of the petroleum products imported into Canada are carried in flag-of-convenience vessels. The major flag-of-convenience vessels involved in Canadian trade are from Liberia, Panama, and Singapore. Japanese vessels are also active

in Canadian waters and account for almost fourteeen percent of Canadian non-U.S. seaborne export tonnage. The countries of Western Europe (West Germany, Belgium, and France) and Great Britain also carry significant Canadian international tonnage.

In 1977, liner traffic accounted for only eight percent of total Canadian deep-sea cargo tonnage. However, the value of this cargo carried surpassed that of tramp vessels which accounted for eighty-six percent of the deep-sea Canadian tonnage[17] Most of the liner traffic is carried by the fifty conferences which operate into and out of Canada. These conferences carried general cargo valued at forty percent of the value of Canadian deep-sea exports.[18] Recent Canadian legislation has exempted these liner conferences from the Combines Investigation Act and allows them to regulate rates and membership. This same legislation also prohibits conferences from undercutting competition outside the conference and forces them to meet and discuss rates with the Canadian Shipping Council.

3. CANADIAN SHIPPING INTERESTS

There are many groups that are involved in Canadian shipping, and a study of the industry would not be complete without mention of these groups, their objectives and their concerns. The organizations examined can be divided into five general groups; shipowners and operators, shippers, government agencies, labour unions, and shipbuilders.

A. Shipowners And Operators

There is a large number of Canadian-based shipowners who are operating vessels under foreign-flag registry. Interviews with shippers, conducted by the author, revealed that foreign registry may be attractive for several reasons; avoidance and deferral of taxes, cheaper labour, attractive loan or credit arrangements, or to get around restrictive flag discrimination practices. If the federal government hopes to coax these foreign-flags back to Canadian registry then it must be prepared to introduce incentives that are comparable to those offered in these foreign countries.

A recent article by K.C. Griffin,[19] Marketing Director of Overseas Trade & Petrochemicals for Canadian Pacific Ltd. estimates that the Canadian-owned seagoing merchant fleet, as of the end of 1979, consisted of 185 vessels. Of this total, 107 of these vessels were registered offshore (in other countries) while only 78 were registered in Canada. The total size of the Canadian-owned deep-sea fleet was 6.3 million d.w.t. which would today put Canada into fourteenth place in terms of national tonnage.

The most recent figures available (March 30, 1980) indicate that the largest percentage of the fleet was registered under the British flag (including Bermuda). In all, sixty-one vessels were under British registry which constituted a little over one-half the fleet's total registered tonnage. The next most favoured flag was the Liberian flag which was flown by thirty ships accounting for 26.1 percent of the total tonnage. Canadian-registered vessels were third most common, and, although numbering seventy-seven ships, accounted for only 13.2

percent of the tonnage. Other tonnage was registered in Singapore (3.5% of total tonnage), Greece (2.6%), and New Zealand (1.3%).

Data for 1978 reveals that two-thirds of the Canadian-owned tonnage was of Japanese construction. Canadian-built ships were next most popular however, they accounted for only ten percent of the total tonnage.

Canada's largest shipowning company as of December 31, 1979 was Canadian Pacific (Bermuda) Ltd. which owned thirty-five ships, all of which were under British registry. The Canadian Pacific fleet accounted for one-third of the total Canadian fleet by tonnage. The second largest ship owner was Papachristidis of Montreal which owned twenty-four percent of the total Canadian tonnage, or twenty-one ships. Again, as was the case with Canadian Pacific, not a single one of these ships was of Canadian registry. Cast Shipping Services Canada Ltd. was the third largest owner in Canada 12.6 percent of the tonnage and fourth was Federal Navigation & Commerce with 6.5 percent of the tonnage. Other companies owning at least 2 percent of the total tonnage were Upper Lakes Shipping, Kent Lines, Jason Steamship Co., Reyship Canada Ltd., and Canada Steamship Lines.

The major concern of the ship operators that were interviewed was the desire to be put on "equal footing" with foreign operators. They argued that other countries had much more attractive shipping incentives than Canada had and, as a result, Canadian operators were put at a disadvantage. All the operators interviewed felt that Canadian operators could be competive with foreign companies if they were given similar

incentives. The major complaints of this group were the custom duties on imported ships, lack of a government loan program, high taxes, low capital cost allowance rates, labour problems, and restrictive legislation regarding leasing, and foreign charter arrangements. This group, generally supported the idea of a Canadian merchant marine and suggested measures to encourage its development.[20]

In Canada, there are also several shipowner associations. These associations fulfill a variety of responsibilities including the promotion of the general welfare of the marine transport industry; the formulation of policies, legislation and regulations beneficial to the marine transport industry; the collection and dissemination of statistical information, the implementation of training programs, and the promotion of safety in operations.[21] The major shipowner associations are the Dominion Marine Association (representing the Great Lakes shippers), the Council of Marine Carriers (representing mainly tow and barge operators on the Pacific coast), the St.Lawrence Shipowner Association (consisting of thirty-one member companies and fifty-eight ships) and the Newfoundland Shipowners Association (twenty members and thirty-one ships).

E. Shippers

Shippers are the actual users of shipping services and as such they are primarily concerned with getting their goods to market as cheaply and as efficiently as possible. In addition to the numerous individual users of shipping services there are also several important user associations that arrange shipping

services and negotiate rates for their members. A few examples of such associations are the Council of Forest Industries (representing the lumber and forest suppliers in British Columbia), the Canadian Exporters Association, the Canadian Manufacturers Association and the Atlantic Transport Users Association.

In Canada, there is also a group known as the Canadian Shipper's Council which consists of thirteen trading groups and associations. Listed among the membership are the Canadian Exporters Association, the Canadian Manufacturers Association and various associations representing lumbermen, packers, pulp and paper producers, horticulturists, asbestos shippers, and makers of chemical and forest products.[22]

The key concern of the shipper associations is that,

> ... Canadian manufacturers must have available an efficient marine transportation system capable of both delivering their products to offshore markets and moving to Canada materials essential to support manufacturing processes. These functions must be performed at the lowest possible prices.[23]

Shippers were generally opposed to the establishment of a Canadian deep-sea fleet claiming that the current system of reliance on foreign-flag ships is the most efficient system. Shippers oppose government subsidies to ship owners because they fear that such subsidies will in time lead to cargo allocation measures which would result in higher transportation costs.

C. Government Bodies

The major government department associated with Canadian shipping is Transport Canada, in particular the Marine Branch.

This body is responsible for administering the Marine Transportation Program, the objective of which is;

> -to foster the optimal development of marine transportation consistent with national economic and social goals, through the provision of marine facilities and services on a cost-recoverable basis wherever practical.[24]

Also within the department are the programs for the Atlantic Pilotage Authority, the Great Lakes Pilotage Authority Ltd., the National Harbours Board, the St.Lawrence Seaway Authority and the Canadian Transport Commission (CTC).

The administrative work of the CTC is organized under five committees, one of these being the Water Transport Committee which administers a section of the Transport Act of 1938. This section gives the Water Transport Committee jurisdiction over passenger traffic on the Great Lakes and MacKenzie River, package freight on the Great Lakes, and both package freight and goods in bulk on the MacKenzie River. The Water Transport Commission is also in charge of the licensing of domestic vessels in the above areas and for licensing foreign vessels wishing to engage in the Canadian coastal trade. Under section 22 of the Act the Commission ;

> is required to inquire into and recommend to the Minister from time to time such economic policies and measures as it considers necessary and desirable relating to the operation of the Canadian merchant marine commensurate with Canadian maritime needs[25]

Another department with an interest in Canadian shipping matters is the Department of Industry Trade and Commerce (IT&C) which administers the shipbuilding construction subsidy program (discussed in greater detail in chapter VI). The Department of Public Works is also involved to a certain degree with shipping

through its Marine Program which is concerned with providing and maintaining marine facilities as required by federal programs. Finally, the Department of the Environment is also involved in shipping by way of its construction subsidy program for fishing vessels.

A very important government department involved in the Canadian deep-sea fleet issue is the Department of Finance. This powerful government department controls the strings of the public purse and all budgets and allocations must receive the approval of this department . Thus if Transport Canada were to decide that Canada needs a program to encourage the development of a deep-sea fleet then such a program would require the Department of Finance's support. Judging from past behaviour it seems that Finance is generally opposed to any measures that might decrease its tax revenue base.

D. Union Groups

Statistics Canada data for the year 1977 shows that there were 19,285 people employed as crew members aboard vessels.[26] Most of these held memberships in one of the following three unions; the Seafarers International Union (SIU), the Canadian Brotherhood of Railway Transport & General Workers (CBRTGW) or the Merchant Service Guild. The first two of these unions represent seamen on board vessels while the latter represents ship officers and engineers.

The SIU dominates the labour activity in the Great Lakes region and has over 4000 members (6100 during peak season). The CBRT operates mainly on the inland waters and the British

Columbia Coast, claiming approximately 4500 members.[27]

The three unions generally support the concept of a Canadian deep-sea fleet, however, they feel that the registry of ships in Canada should be linked to a Canadian crew requirement.

The level of Canadian seamen's wages in relation to those of other countries is a hotly debated question. It appears that Canadian seamen's wages are higher than those in the Asiatic countries (i.e., Hong Kong, Philipines, China) and about on par with those of Northern Europe. One general manager of a Vancouver-based shipping company put it this way; "Canadian wage rates are not something you cannot live with but, you must select your trades carefully." Considerable care must also be taken when comparing the cost differences between the crews of various countries since productivity, motivation, and reliability may vary from nationality to nationality.

F. Shipbuilders

The shipbuilding industry employs about 11,200 people and accounts for about one percent of the world's total production[28]. This percentage is up from the 0.5 percent share recorded in 1974. In 1979 , the Canadian shipbuilding production increased by a healthy 17.4 percent.[29] New constructions were valued at $398.2 million and included ice-breakers, ferries, self-loading bulk-carriers, tankers, tugs, fishing vessels, and offshore drilling rigs. Repairs and conversion work totalled $181 million. Government contracts accounted for $11.6 million of total new constructions (approximately 3%) and $46.5 million of total repairs and conversions (or 26%).

The outlook for Canadian shipyards is encouraging with one notable exception; the twenty percent construction subsidy that Canadian shipyards had been enjoying was lowered to nine percent as of July 1, 1980. However, other than this, Canadian shipyards can be optimistic for the following reasons; 1) prospects are good for increased federal defence orders, 2) the new and continuing demand for new fishing craft, 3) offshore requirements for supply and drilling vessels, and 4) projected vessel requirements for the Beaufort sea and the Arctic.

The major shipyards in Canada and more than fifty marine-related companies are represented by the Canadian Shipbuilding and Ship Repair Association (CSSRA). The official position of the CSSRA on the issue of a Canadian deep-sea fleet is that it should be encouraged and that measures should also be introduced to encourage Canadian shipowners to place orders with Canadian shipyards.

As can be seen from the foregoing discussion the insignificant size and tonnage of the Canadian registered deep-sea fleet are not accurate indications of Canada's involvement in deep-sea shipping. Supplementing the Canadian-registered fleet is a sizable offshore fleet that is owned and operated by Canadians. The Canadian presence is further reinforced by the efforts of Canadian shippers, unions, government bodies, and shipbuilders. Each of these groups has its own position on the Canadian deep-sea issue and, naturally, each group is lobbying to protect its own self-interest.

IV POSSIBLE GOVERNMENT ASSISTANCE MEASURES TO AID SHIPPING

Governments, when investigating the appropriateness of particular assistance measures to aid shipping, must be aware of the international and Canadian shipping environment. This material was presented in chapters II and III.

But governments must be more than just aware of the international shipping environment. They must also have stated objectives and alternative measures that can be used to achieve these objectives. This chapter examines the alternative measures that could be used to establish, promote or protect a national deep-sea fleet. It also examines the economic effects that each assistance measure has on the behaviour of the individual firm and upon the overall welfare of society.

1. MEASURES TO ASSIST NATIONAL DEEP-SEA FLEETS

Assistance measures may be classified into three general groups, financial assistance in the operating phase, financial assistance in the capital phase and nonfiscal assistance measures. The first two groups are considered "financial" assistance because they are "forms of assistance rendered through the government's taxing and spending powers".[1] The third group, nonfiscal assistance measures, are provided by the government's power to regulate and do not involve any direct transfer of cash or credit. Using these three classes it is possible to categorize the various assistance measures in the following manner:[2]

1. Financial Assistance in the Operating Phase
    a) operating differential subsidy

b) special subsidies

c) tax incentives

d) government-provided facilities

2. Financial Assistance in the Capital Phase

a) loan guarantees

b) direct loans

c) construction subsidies

d) Government Ownership

3. Nonfiscal Assistance Measures

a) cargo preference

b) flag discrimination

c) bilateral agreements

The following sections describe each of these three classes:

A. Financial Assistance In The Operating Phase

Most of the measures included in this section are intended to assist national flag operators by decreasing their daily running or voyage costs (explained in chapter II) or by increasing their revenue.

The first of these assistance measures is the operating differential subsidy. Direct payments, either grants or allowances are made to national operators. These payments are intended to offset the difference between the high costs that national operators must pay for the factors of production (i.e., ships, labour) and the lower costs confronting their foreign competitors . Such subsidies could be utilized to offset higher domestic costs that might exist in the following areas;

insurance, wages, repairs, maintenance, and subsistence of crew and officers.[3] The actual operating subsidy paid can be calculated in many different ways and usually has conditions attached to it that an operator must agree to before the subsidy is granted (e.g., maintenance of a schedule of particular service level).

Special subsidies include preferential treatment at ports such as lower port dues and harbour charges for national flag ships. Also included among special subsidies are easier licensing and documentation for domestic carriers, lower duties, priority in berth assignments, and lower docking fees. These measures reduce the operating costs of domestic operators and improves their ability to compete against foreign-flag vessels.

Perhaps the most common form of financial assistance in the operating phase is extended through the tax system. The government might encourage national ownership or registry by increasing depreciation allowances, by sanctioning the establishment of tax-deferred replacement reserves, or the government might entirely exempt from tax, income earned in international shipping. Other tax subsidy measures include special investment tax credits for the purchase of vessels or marine equipment, the permitting of consolidated tax returns, and attractive rules governing leasing and chartering arrangements. A tax subsidy program will only be effective in attracting ship owners and operators if: i) there exists income against which these credits can be charged; ii) the program is at least as favourable as those that exist in other countries. Gerald Jantscher, in his book Bread Upon the Waters describes

tax subsidies in the follcwing manner:

> "The program of tax subsidies functions as a loan program, in which the federal government forgoes collecting taxes on a part of shipowners' earnings and grants the cwners the use of these taxes on the condition that they invest their earnings in new ships and eguipment."[4]

The final category of operating phase assistance measures is that cf goverment-provided facilities without compensatory user charges. This might include government investment in marine research, pcrt facilities and navigational aids or the providing of special services such as traffic control, dredging, and ice-breaking. These goods and services are considered as subsidy measures since the shipping industry receives "a special advantage intenticnally provided by government."[5]

B. Financial Assistance In The Capital Phase

Loan guarantees are one measure that the government may use to assist ship owners. A loan guarantee is simply a promise by a particular level of gcvernment to the issuing financial institution that the goverment will pay the unpaid portion of the loan if the shipcwner is unable to meet his debt obligations. These government guarantees enable prospective shipcwners to cbtain credit more easily and at lower rates than would otherwise be possible. Since shipping is a capital intensive industry, the advantage afforded by these government guarantees can be sizeable.

Another very popular capital phase assistance measure is the direct government loan whereby cash or credit is extended to shipcwners to ccver a portion of a ship's construction costs.

Usually the credit terms of these government loans are considerably more attractive than those existing in the open market. To qualify for these loans an investor must usually agree to fulfill certain responsibilities.

A third measure found in some countries, is the construction subsidy. With the construction subsidy the government pledges to pay the shipbuilder or the purchaser a specified percentage of the contracted or actual construction costs of a vessel. A differential construction subsidy is where the government agrees to pay the cost difference between a ship built in domestic yards and the price that would have been paid if the ship had been constructed in a foreign yard. Undoubtedly this measure benefits shipbuilders; however, it is a contentious item as to whether shipowners also benefit from such a program. This is briefly examined later in this chapter.

Finally, the government can become a part owner in a shipping company by subscribing to capital stock that is issued by the firm. The intent of such assistance is not necessarily to ensure the shipowner a reasonable return on his investment but may also be:[6]

1. To ensure that there is direct public representation in those cases where operations are classified as in the national interest.

2. To protect substantial debt participation by government in the enterprise.

3. To offset any imperfections in the capital market where, for example, risks of the venture might be weighted higher than by either the entrepreneur or the goverment.

4. To ensure that the merchant marine meets guidelines as to national ownership and control, where the only additional equity funds available (other than government) are from foreign capital.

C. Nonfiscal Assistance Measures

Cargo preference refers to legislation, regulation or informal instruction aimed at ensuring that national-flag ships carry a percentage of specified cargoes. Cargo preference laws are most commonly applied to cargoes in which the government has property interest (e.g., military cargoes) or that are being moved as a result of government intervention (e.g., foreign aid cargoes). The unilateral assignment of commercial cargoes to national-flag ships, through either formal or informal methods, is another form of cargo preference. A unilateral assignment is when the government either legislates or pressures shippers to use national-flag vessels when importing or exporting certain commodities.

Flag discrimination is a more general term and refers to "a variety of policies, laws, regulations, or trading practices that some countries employ to favour their own nation fleets."[7] Defined in such a manner flag discrimination encompasses practices related to the apportionment of trade (i.e. bilateral agreements), practices related to treatment in ports (higher dues or port taxes), practices concerning trade financing (requirements to use certain currencies, special exchange rates) and cabotage restrictions.[8]

2. THE EFFECTS OF THE VARIOUS MEASURES

This section examines the economic effects associated with construction subsidies, operating subsidies, and flag discrimination practices.[9] Each is examined first from a social welfare perspective and then from the perspective of the

individual firm.

A. Economic Effects Of Construction Subsidies

Two distinct groups may benefit from a construction subsidy, shipowners and shipbuilders. How the benefits are eventually distributed among these two groups depends upon the elasticities of the supply and demand for new ships. Shipowners will experience a larger portion of the benefits if the demand curve for new ships is inelastic or supply is elastic. Conversely, shipbuilders benefit the most in a situation where the supply of new ships is inelastic or the demand elastic.

The benefits accruing to these two groups is illustrated in Figures 4.1 to 4.6 below. The following analysis assumes that perfect competition exists in the shipbuilding market, and that the shipbuilding market experiences decreasing returns to scale. ~~and that the construction subsidy is paid to shipowners rather than to shipbuilders.~~

Upon the introduction of a construction subsidy the demand for new ships increases from DD to D'D' representing a ~~horizontal~~ vertical shift in the demand curve equivalent to the per vessel subsidy amount. This is shown in figure 4.1 below. Shipowners will now be willing to pay more for a domestically-built vessel, knowing that they will be eligible for a construction subsidy. Before the subsidy was introduced the equilibrium point was pq. After the introduction of the subsidy program both price and quantity increase, and a new equilibrium point is established at p_1q_1. The question to be answered is, "Have either the shipowners or the shipbuilders benefitted from

Figures 4.1 and 4.2

Fig. 4.1 : The Effect on Supply and Demand of a Construction Subsidy

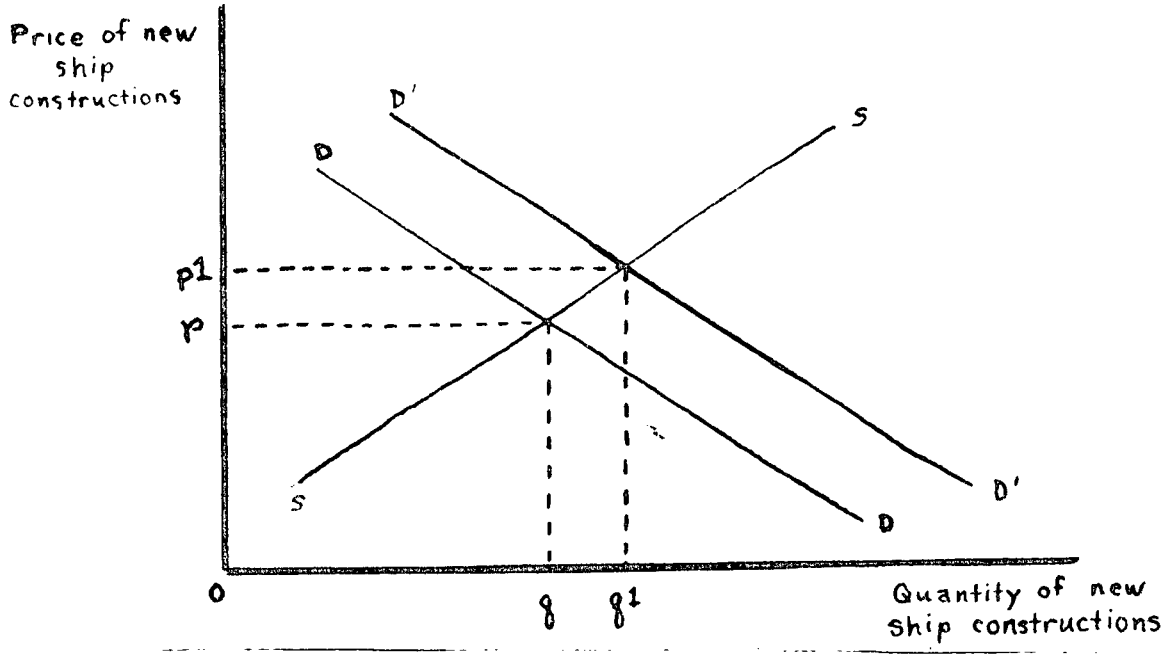
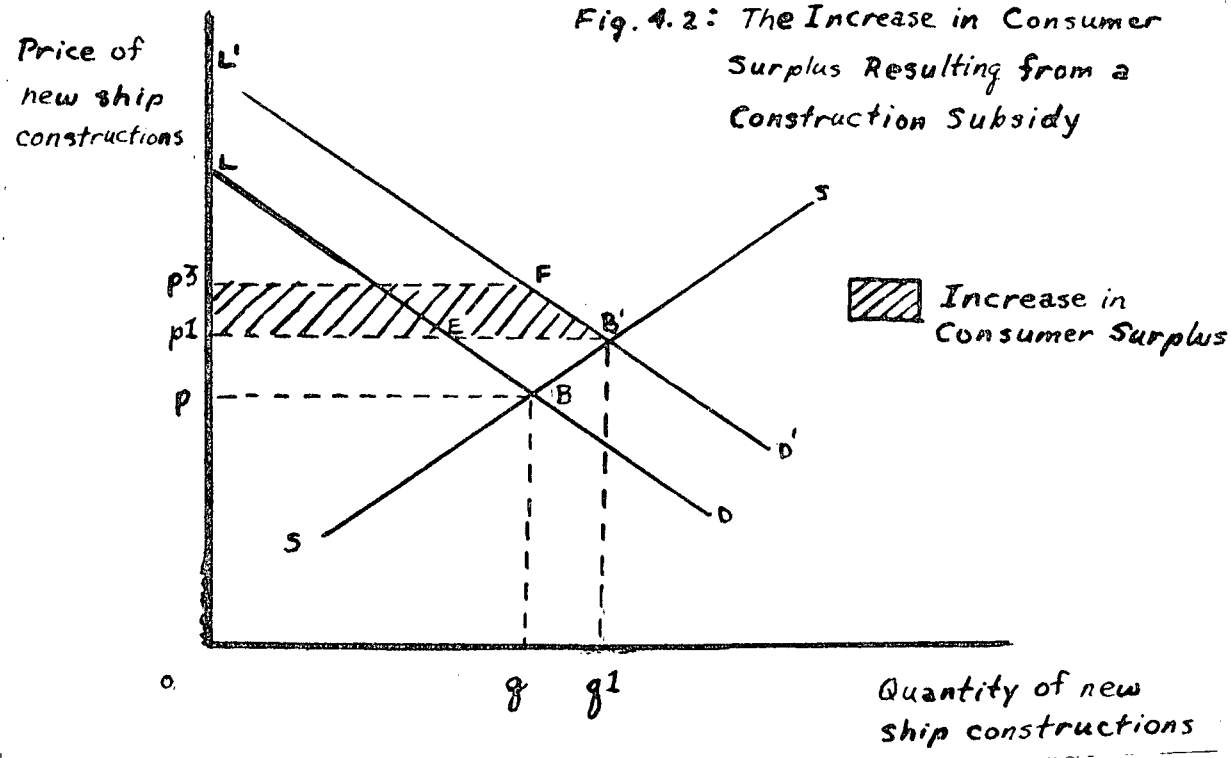


Fig. 4.2: The Increase in Consumer Surplus Resulting from a Construction Subsidy



the construction subsidy, and if so, to what extent"?

To determine whether the shipowners are better off than before, one merely has to compare the consumer surplus that existed before the construction subsidy and the consumer surplus that exists afterwards.[10] This is done in Figure 4.2. The consumer surplus before the subsidy was equal to the triangle pBL, and the consumer surplus afterwards is the area p1B'L'. The difference in the two areas represents the change in the consumer surplus. If the change in consumer surplus is positive then a net benefit has accrued to shipowners, if negative a cost has been incurred. As can be seen from Figure 4.2, the introduction of the construction subsidy has resulted in a net benefit to shipowners, equal to the area p1B'Fp3.

The calculations to determine the benefits that accrue to shipbuilders from a construction subsidy are even easier and are shown in Figure 4.3. The net benefits accruing to this group is simply the increase in profits, profits being defined as revenues less costs. Before the subsidy shipowners's revenues totalled pg and total costs were represented by the area OMBq. Profits were therefore equal to the area pBM. After the subsidy, revenue increases to p1q1, costs to OMB'q1, and profits are now equal to the triangel MB'p1. As can be seen from Figure 4.3 profits have increase by the amount pBB'p1. This area represents the net benefits that accrue to shipowners as a result of the introduction of the construction subsidy.

To calculate the net benefits to society one merely has to sum up the benefits accruing to shipowners and shipbuilders and subtract from that total the cost of the subsidy. This is

Figures 4.3 and 4.4

Fig. 4.3: The Increase in Producer Surplus Resulting from a Construction Subsidy

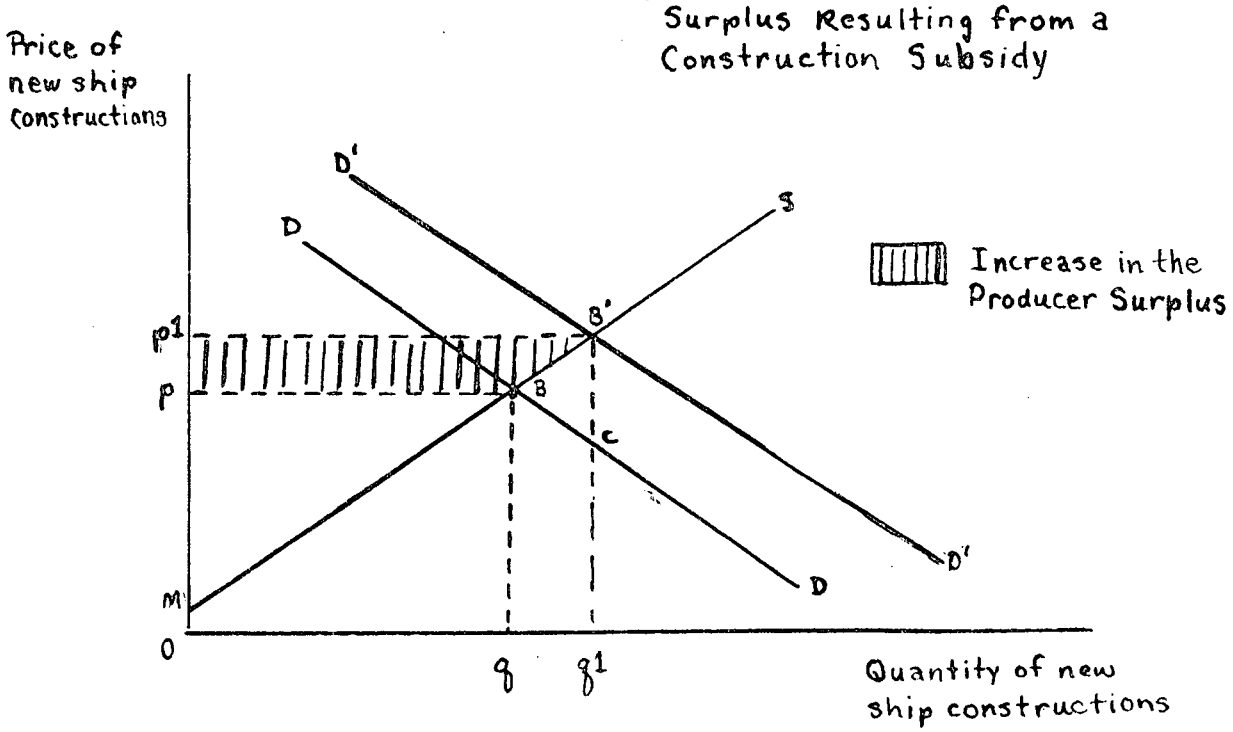
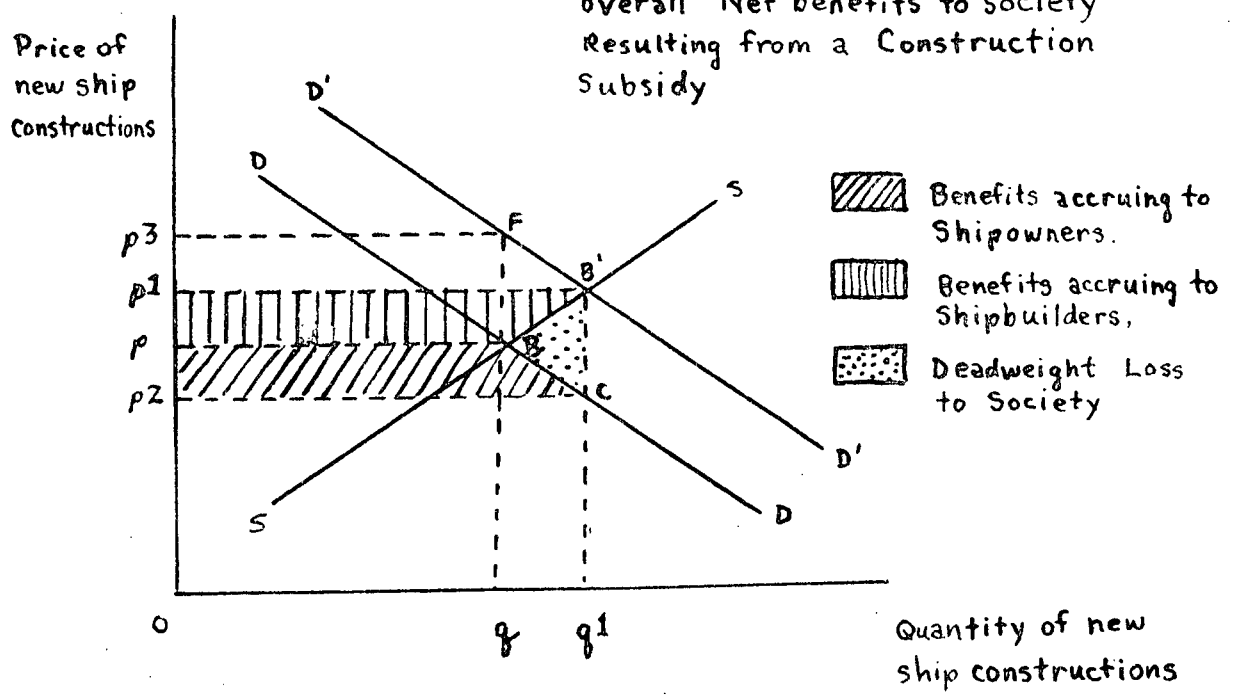


Fig 4.4 : Calculation of the overall Net benefits to society Resulting from a Construction Subsidy



illustrated in Figure 4.4. Net benefits accruing to shipowners were determined above and found to be equal to the area p1B'Fp3 which is equal to the area pBCp2 in Figure 4.4. The net benefits to shipbuilders were represented by the area pBB'p1. Total benefits to society are thus equal to the shaded area p1B'BCp2. The cost of the construction subsidy program is equal to the subsidy payment OS times the total number of ships constructed that qualify for the subsidy. The total cost of the program can thus be represented by the rectangle p1B'Cp2. As can be seen from the diagram the total costs of the program outweigh the benefits by the amount B'BC. This area is sometimes known as the deadweight loss to society, since society was better off before the introduction of the construction subsidy than it is now.

The introduction of a construction subsidy need not always result in a deadweight loss to society, it could under certain condition result in a net gain to society. Under what conditions might this be true? First, it is possible that private costs are not equal to social costs, or that there exists some externalities. In such a case the introduction of a construction subsidy may result in net benefits accruing to society. The second situation where this might also occur is if the shipbuilding industry was a natural monopoly industry, one faced with a diminishing capital cost structure.

As was mentioned previously, the portion of the benefits accruing to shipowners, and the portion accruing to shipbuilders depends on the elasticities of the supply and demand curves. This is illustrated in Figures 4.5 and 4.6. In Figure 4.5, the demand curve is drawn as being inelastic, and as can be seen from that diagram, the portion of the subsidy's benefits

Figures 4.5 and 4.6

Fig. 4.5: Effect of a Construction Subsidy - Inelastic Demand

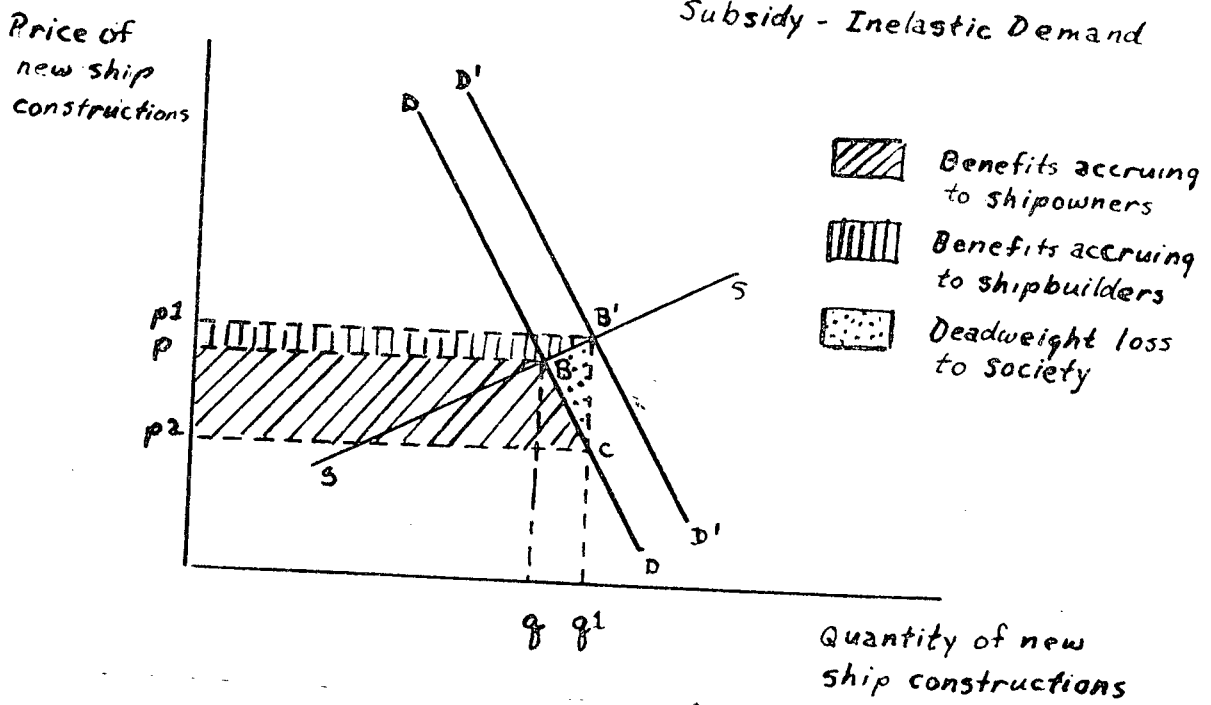
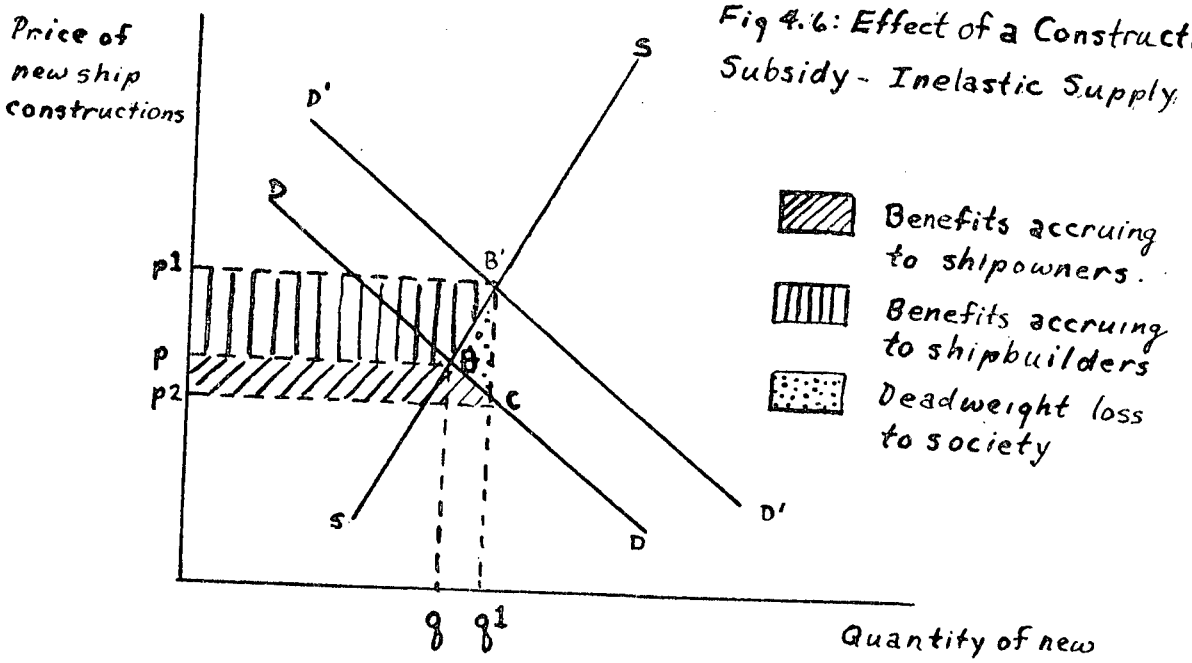


Fig 4.6: Effect of a Construction Subsidy - Inelastic Supply



accruing to the shipowners is greater than that accruing to the shipbuilders. In Figure 4.6, it is the supply curve that is inelastic, which results in benefits to shipbuilders being greater than benefits to shipowners. The policy implications are clear, if the supply of new ships is inelastic (perhaps representing a situation where shipyards are working to full capacity) a construction subsidy could be used to assist shipbuilders. If supply is elastic, such an assistance measure could be used to assist shipowners rather than shipbuilders.

How will a construction subsidy affect the behaviour of the individual firm? To answer this question we assume that the individual shipowner faces a cost structure similar to that illustrated in Figure 4.7 below . The vertical axis represents the cost per voyage, while the horizontal axis the number of voyages that will be made. A private firm faced with such a cost function will not provide services below a rate p1 since at this rate price just equals the variable costs of making a journey. The point q1, known as the production threshold, is the minimal amount of shipping service that will be offered by the individual ship operator in the short run. At shipping rates above p2 the firm will begin to earn a profit (the point q2 is thus referred to as the profit threshhold). Now suppose a construction subsidy is introduced. This has the effect of shifting down the average total cost curve from AC to AC', since average costs include capital costs. Neither the marginal or variable cost curves are affected by the introduction of the subsidy (see Figure 4.8). The new intersection points reveal that the production threshhold remains unchanged. Rates must

Figure 4.7

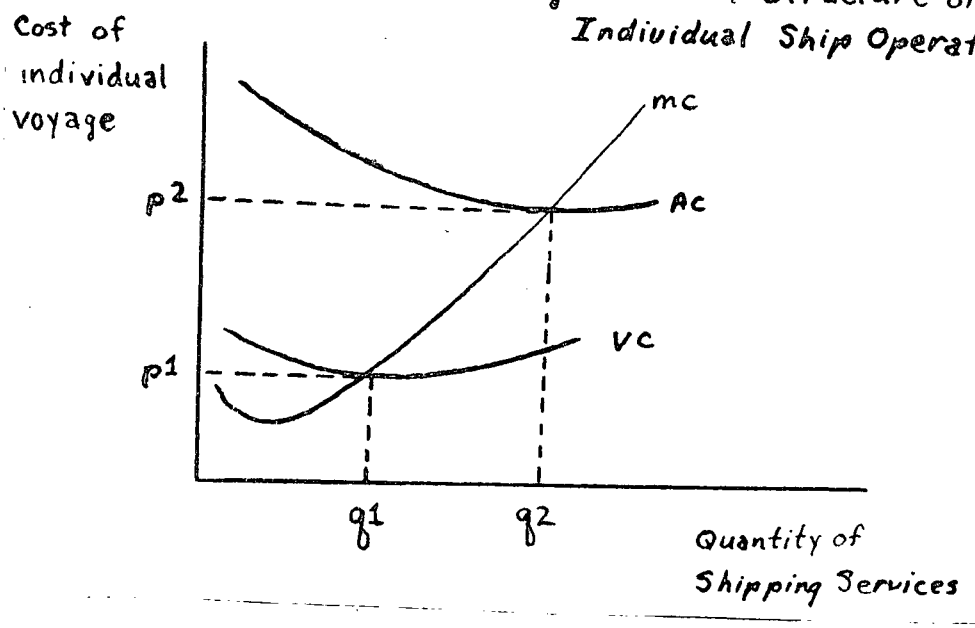
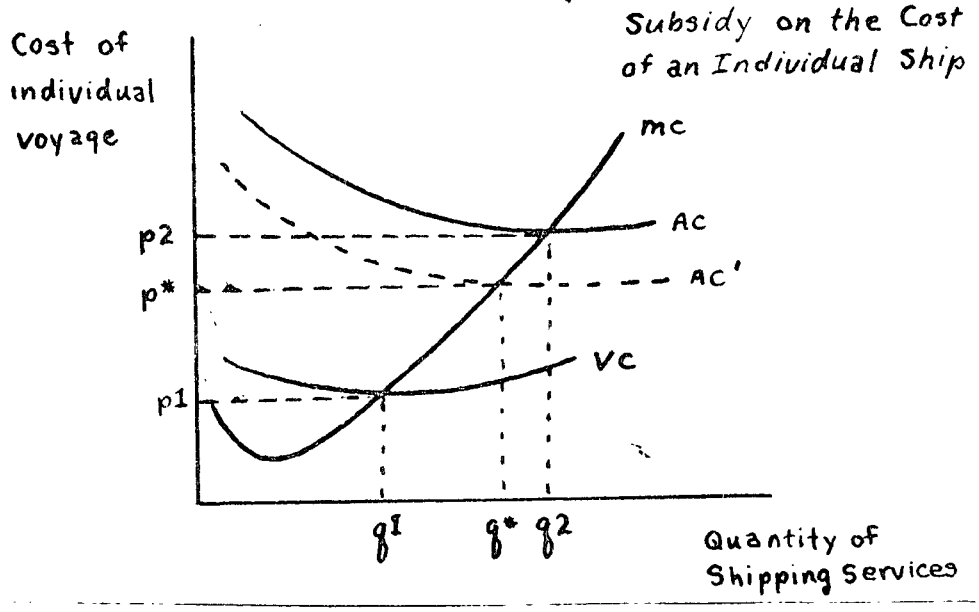


Fig. 4.7 : Cost Structure of an Individual Ship Operator

Fig. 4.8: *Effect of a Construction Subsidy on the Cost Structure of an Individual Ship Operator*



still be abcve p1 if the shipping firm is to undertake the voyage. However, the shipping company is now able to earn a profit at lower rates than before (p* as opposed to p2) at a lower service level q*. The policy implications are that if shipping rates are low, say below p1,[11] then a construction subsidy will be ineffective in increasing the amount of shipping services that are offered. Instead some other subsidy form may be more effective. A construction subsidy will not affect the amount of shipping services supplied by the individual operator at any given rate since the marginal cost curve has remained uncharged.[12]

One caveat concerning construction subsidy policy should be mentioned. It is possible that the cost of a domestically built ship is considerably more expensive than a similar ship built in

foreign yards. Unless the subsidy is large enough to compensate for this cost difference shipowners will continue to purchase ships from abroad and no benefit will accrue to either domestic shipbuilders or owners.

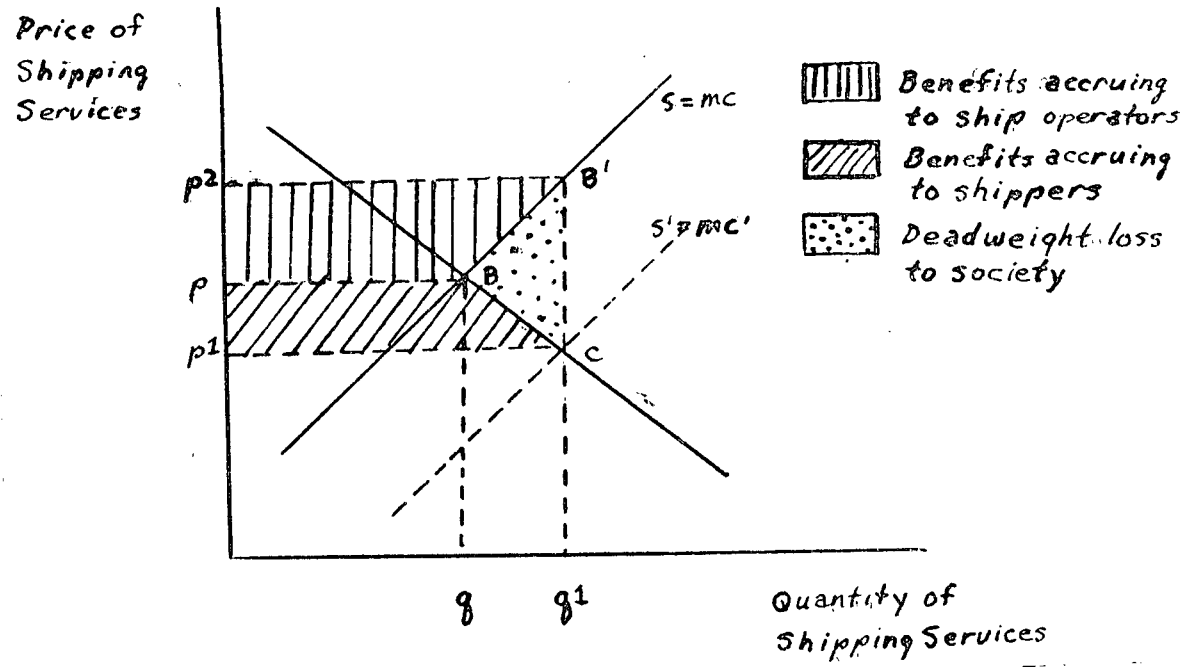
B. Economic Effects Of Operating Subsidies

The analysis of the benefits resulting from an operating subsidy can be conducted following the same reasoning that was used before when calculating the benefits of a construction subsidy. However, this time the benefits of the subsidy will be divided between shippers and shipowners (recall that with a construction subsidy the two benefitting groups were shipowners and shipbuilders).

The effect of the new operating subsidy is to shift the supply curve from SS to S'S' as shown in Figure 4.9. Ship operators are now willing to offer the same quantity of services at lower prices than before since they can recoup any losses from the government through the operating subsidy. The benefit accruing to shipoperators is equal to the area p2B'BP, representing the increase in profits. The benefits accruing to shippers is equal to the trapezoid pBCp1. As was the case with the construction subsidy, a deadweight loss will result (triangle B'BC) unless there exists a market inefficiency, private costs are not equal to social costs, or the industry is a natural monopoly industry. The apportionment of the benefits between the two groups is once again dependent upon the elasticities exhibited by the supply and demand curves.

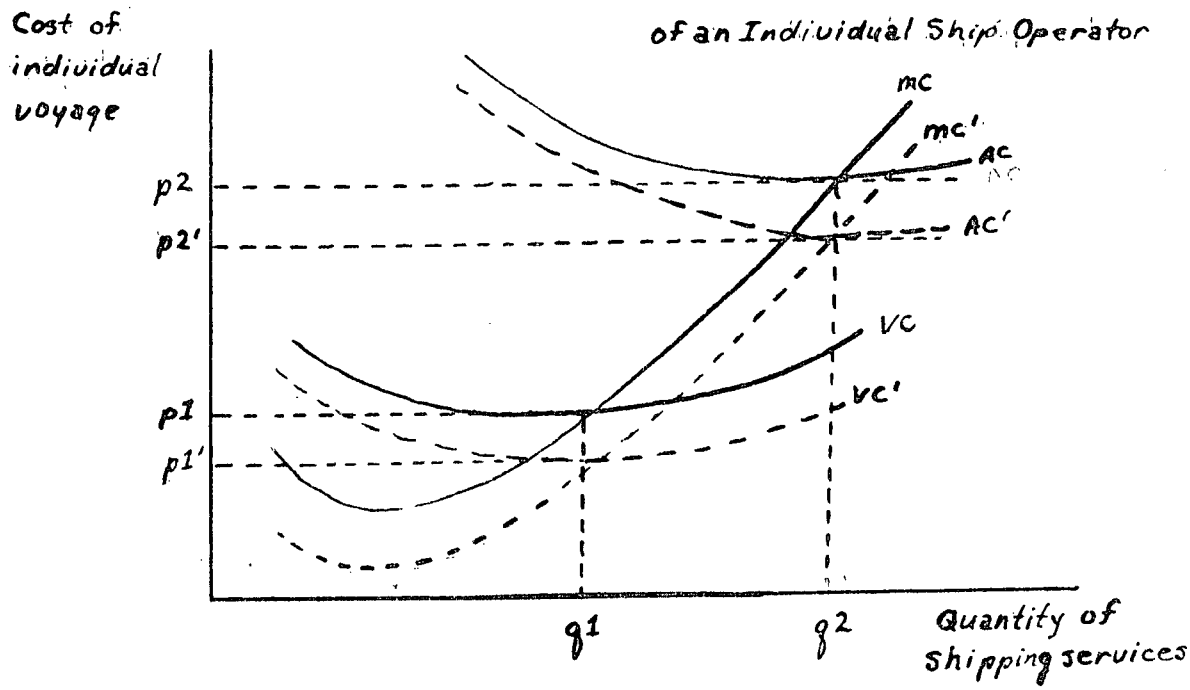
The effects of an operating subsidy upon an individual

Fig. 4.9: The Effect on Supply and Demand of An Operating Subsidy



operator are somewhat different than those resulting from a construction subsidy. With an operating subsidy, the marginal cost curve is lowered, hence so are the VC and AC curves as shown in figure 4.10. The shipping firm is now willing to provide services at a lower rate, but still at the same production threshhold q1. With the subsidy the firm can now earn a profit at lower frieght rates than before, but unlike the construction subsidy example , presented earlier, the profit threshhold remains unchanged. Finally, because the MC curve represents the individual firm's supply curve in competitive markets, more shipping services than before will be offered at any rate since the MC curve has been lowered. The implications are that if shipping rates are low, perhaps due to depressed markets, an operating subsidy could be used to assist ship

Fig. 4.10: Effect of an Operating Subsidy on the Cost Structure of an Individual Ship Operator



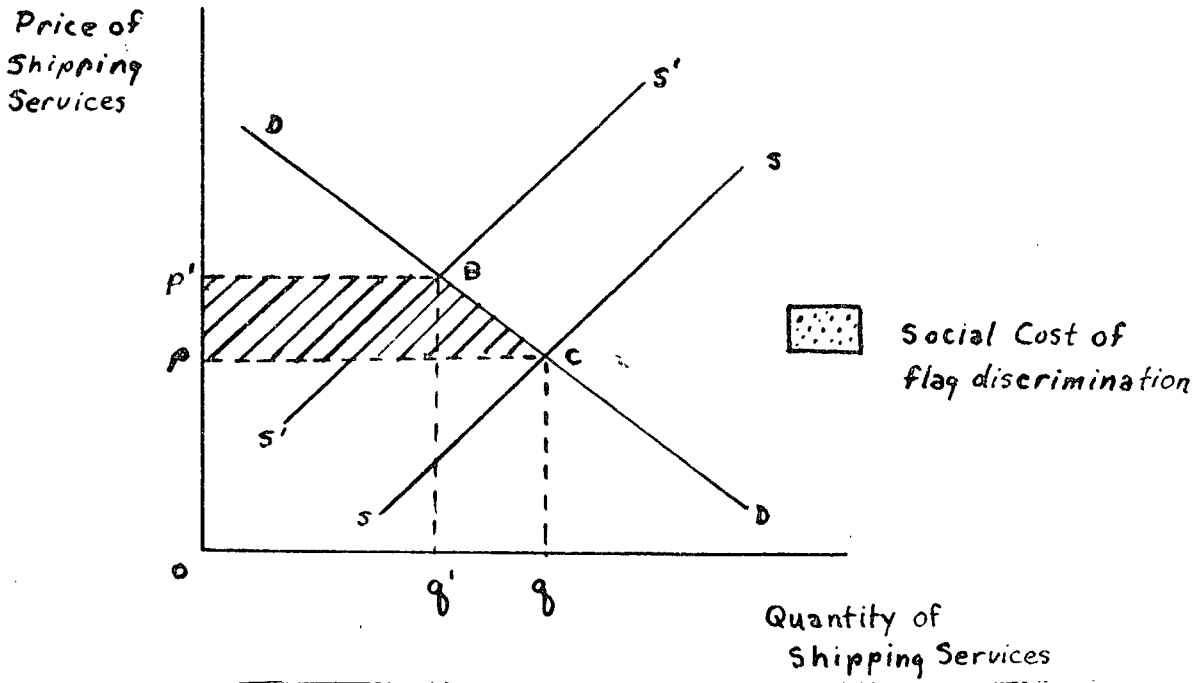
operators in the short run, at least until rates returned to breakeven levels.

C. Economic Effects Of Flag Discrimination

The effects of flag discrimination upon otherwise competitive shipping markets is fairly straightforward. Flag discrimination eliminates some cheaper sources of shipping services which results in a decrease in supply, represented by a leftward shift in the supply curve from SS to S'S' in Figure 4.11.

From a societal point of view the country is worse off than before by the amount p0p1BC due to the elimination of the cheaper foreign-flag operators. This type of analysis is the

Fig. 4.11: The Cost to Society of Flag Discrimination Practices



prime argument advanced in opposition of flag discrimination practices to encourage the establishment of a national fleet. The costs of discriminatory practices are very real but they are not as obvious as other subsidy measures. The exclusion of low cost foreign operators will eventually manifest itself in higher shipping costs, hence higher prices for consumers.

The choice of the correct shipping assistance measures requires an understanding of the economic effects that each measure will have upon the behaviour of the individual firm, and upon the overall welfare of society. The selection of appropriate assistance measures is also dependent upon an awareness of the conditions prevailing in the international shipping markets at the time. Certain measures, appropriate at

one particular time, may be totally inappropriate at a later point in time. Because the international shipping environment is in a constant state of change, it is important for government to monitor and re-evaluate their shipping assistance programs.

V. WORLD SHIPPING ASSISTANCE MEASURES

If the Canadian government hopes to introduce effective assistance measures to encourage the development of a deep-sea fleet it must first;

a) familiarize itself with the international shipping environment
b) identify alternative measures that could be used to achieve this objective and
c) predict the impact that such measures would have upon the shipping industry and other sectors of the Canadian economy.

This chapter is devoted to the first requirement, it examines the various shipping assistance measures that exist in the major maritime nations, including Liberia, Japan, Greece, the United Kingdom, Norway, Panama, the United States, France, Italy, and West Germany. On occasion reference is also made to assistance measures that exist in countries with which Canada is a major trading partner, such as Brazil, China, Belgium, Netherlands, Sweden and Mexico.

1. FINANCIAL ASSISTANCE IN THE OPERATING PHASE

To facilitate the discussion of financial assistance measures in the operating phase, separate sections have been included for each of the following; operating subsidies, government-provided facilities, special subsidies, and tax incentives. Most of the information presented in this chapter was drawn from the Maritime Administration's publication, Maritime Subsidies . Unless otherwise stated, all dollar figures given are in U.S. dollars.

A. Operating Subsidies

The country most involved in the administration of operating subsidies is the United States.[1] Through the Merchant Marine Act of 1936, operating subsidies were originally extended to American shipping companies which provided regular service on essential routes. The purpose of these subsidies was to offset the higher operating costs experienced by American operators, thus enabling them to compete against foreign-flag operators. The subsidy granted was based on "the difference between the fair and reasonable costs of insurance, maintenance, repairs, wages of officers and crews, and subsistence of officers and crew and the estimated costs of these same items if the vessel were operated under foreign registry."[2] These subsidies are only paid to ships owned, registered and built in the U.S. that are operating on "essential trade routes".[3] Prior to 1970, these subsidies were granted only to liner operators, but the 1970 Amendments to the Act extended the privilege to include bulk-carrier vessels operating "essential services". Since 1970, owners who lease rather than own their boats may also be eligible for operating subsidies.

Prior to 1970, the size of the subsidy was based on the difference between the estimated costs of a foreign operator and the actual costs of the American operator. This method of calculation was cumbersome and inefficient since an American operator's inefficiency could be passed on to the government. In response to this shortcoming, the Maritime Administration (MARAD) introduced a new formula for calculating operating subsidies.

The new formula, introduced in 1971, pays U.S. operators

the difference between their "subsidizable costs" and the costs of their foreign competitors. The concept of "subsidizable costs is based on an indexing formula and is applied specifically to wage costs (the most important component of the operating difference). Each year the index, based on wage increases from several other industries, is multiplied by the previous year's "subsidizable costs" to get the current year's "subsidizable costs." With the new system, ship operators can no longer acquiesce to labour's demands and still be reimbursed by the government. Under the new system, if an operator is successful in keeping down his labour costs, then he may keep the difference between his actual and "subsidizable" costs. If actual wage rates increase by more than the allotted percentage, then the owner may only claim "subsidizable" costs. In effect, the operator "foots the bill" for the excess amount.

In return for these operating subsidies owners commit themselves to certain requirements. Subsidized vessels that become obsolete must be replaced by new ships, the number and design specified in the agreement between individual owners and the government.[4] In 1977, the U.S. government distributed $344 million in operating susidies to American ship operators.[5]

An operating subsidy program also exists in France where the government budgeted $222 million to be paid out to merchant fleet operators over the next five years.[6] These operating subsidies are granted to semi-public firms engaged in "services taken in the national interest." If a company earns sufficiently high profits on its "regular" trade routes,[7] then it may not be eligible for subsidies on its "national-interest" routes even if

an actual loss is experienced.

It is a popular practice in many countries to offer operating subsidies to companies that undertake transportation services in the "national interest" that would not otherwise be commercially viable. In the United Kingdom, shipping services to some of the outlying islands are subsidized. In Norway, the servicing of outlying districts with "adequate" transport services are granted financial assistance. The Italian government grants operating subsidies to companies offering "new services or the maintenance of old ones which are economic or specifically required by the national economy."[8]

In Peru, Brazil, the USSR and the Eastern Bloc countries, all shipping losses incurred by the national lines are covered by the government. Similarily, in Spain, the federal government pays operating subsidies to two shipping companies engaged in special services in the national interest. All losses on coastal shipping are paid by the government since such operations are are classified as being a "public utility."[9]

F. Government-Provided Facilities

In many of the countries reviewed[10] the federal government is actively involved in port expansion and development (especially in Singapore and the South American countries). However, the most common example of government provided services was that of research funding.

In Japan, there are two ship research departments that receive government funding; the Ship Research Institute and the Nuclear Ship Development Agency. In Britain, the government

suppcrts the National Physical Laboratory which does some shipping research, and also apportions funds to selected R & D projects and the British Ship Researach Association.

Both Finland and Norway provide partial funding for shipping-related research. In Finland, the government may cover 50 percent cf particular research projects although only about 2 percent of such grants are used for shipping-related projects. In Ncrway, most of the shipping research is done by private firms but such prcjects may qualify for state assistance.

In India, all insurance, including marine insurance, has been nationalized and ship operators are benefitting from subsidized insurance premiums. In the United States, U.S. operators may purchase special types of insurance (i.e., war insurance) from the government that might otherwise be unavailable.

Many ccuntries provide schools and institutions for training seamen and officers. For example, France supports a program cf retraining shipyard employees who move to other industries.

Finally, in both Britain and France there are prcgrams designed to protect shipbuilders from "exceptional and unpredictable" escalations in builing costs.

C. Special Subsidies

The most prevalent form of special subsidies is the exemption cf materials to be used in shipbuilding, from custom duties and taxes. In Spain and Canada, this exemption is only granted to imported materials that are used for ships that are

to be exported. However, in most countries (United Kingdom, Italy, West Germany, China, Brazil, France, Belgium and the Netherlands) this duty exemption on construction material is available to both domestic and exported ships. Quite often this duty exemption is extended to materials used in the alteration, cleaning, repair, and reconditioning of ships. In Norway, a custom rebate of 6 percent on new imported ships is granted to help offset the generally higher Norwegian custom taxes. In Spain, a rebate of 7 percent is given on materials imported and used in the construction of domestic ships.

The following countries also exempt imported ships, materials and supplies from a value-added-tax; Belgium, Denmark, France, West Germany, Netherlands, Sweden, Italy and the United Kingdom.

Peru is a good example of a country where special subsidies, in the form of discriminatory practices, exist. In that country, it costs Peruvian-flag vessels $0.05 per ton for dry-docking privileges, while foreign-flag vessels pay $0.15 a ton for the same services. Similarly, Peruvian operators pay only half of the regular prescribed rate for ship clearance services. Peruvian-flag vessels pay 40-50 percent less than foreign flag operators for the following items; mooring/ unmooring, wharf demurrage, docking for repairs, and fueling.

Shipowners in Panama are not required to withhold tax from crew members' salaries provided they are not engaged in coastal trading.

Special subsidies abound in Greece which has recently introduced legislation intended to coax Greek shipping interests

back to Greece. In that country, banks can extend short-term loans to shipping companies for particular reasons; such as for covering revictualling, for compensating discharged seamen or making advance payments to the family of crew members. Banks are also authorized to discount, without a supporting voucher, 90-day promissory notes of shipping companies operating vessels under the Greek flag.

Special benefits are also extended to Greek seamen. Greek seamen and workers abroad are permitted to open foreign currency deposits with Greek commerical banks at rates that are substantially above domestic market rates (i.e., 6.25 percent vs. 5 percent for savings accounts). Also persons of Greek descent, established abroad or employed abroad (including seamen serving onboard sea vessels) are exempt from transfer taxes (11-13 percent) if they purchase real property in Greece through the importation of foreign exchange.

D. Tax Subsidies

Taxes are a prominent factor in determining where shipping companies locate and conduct their business. Therefore, it is not surprising to find that many countries offer very attractive tax subsidies to shipping companies that choose to locate in their countries.

One way of attracting shipowners to a country is by offering generous depreciation allowances. In some countries different depreciation rates are allowed depending on the type of ship involved. In China, depreciation allowances are 12 percent to 15 percent for tankers and 15 to 20 percent for cargo

carriers[11] while in West Germany the rates are based on an active life of 14 years for cargo vessels and 12 years for other types.[12] In the United Kingdon, up to a 100 percent deduction in the first year may be made on newly constructed vessels. The rate cn seccnd-hand ships is 25 percent straight line.[13]

The calculation of depreciation allowances for tax purposes may be based on a straight-line, declining balance, or formula basis. In Italy a straight line rate of 10 percent is permitted. In Belgium 20 percent of a vessel's capital cost may be written off during the first year of a vessel's life, 15 percent in each of the next 2 years, and then 10 percent each year until the ship is fully depreciated.[14] In France, half the vessel's cost may be charged against income during the first three years of a vessel's life, one quarter over the next two years and the remaining quarter over the next three years.[15]

Swedish ship operators have a choice of depreciation allowances, a 30 percent declining balance or a five-year straight life.[16] In Norway, the ordinary depreciation allowances are: 6-8 percent on passenger, tanker, ore carriers and other special trade ships and 5-7 percent on dry cargo ships. However, Norwegian operators may choose between two alternative accelerated depreciation methods.[17] In Germany, either the declining or straight-line method may be used, but if the declining balance method is used the rate applicable is limited to twice that of the straight-line method.[18]

Advance depreciation, allowing shipowners to depreciate vessels before they are actually received, is permitted in Denmark, Sweden, and the Netherlands. In Denmark, 30 percent of

a vessel's contracted price may be written-off between the signing of the contract and the actual delivery date.[19] Similar conditions exist in, Sweden but only on ships delivered during the period 1966-80.[20] In the Netherlands, one-third of a ship's investment cost can be depreciated in advance of regular allowances.[21]

Another form of depreciation allowance assistance is accelerated or special depreciation methods. For example, in West Germany, owners may deduct allowances of 40 percent spread over the first five years of a vessel's life in addition to the regular allowances permitted. This privilege is only for German owners who are using straight-line depreciation and who agree to keep the ship for at least eight years. The special depreciation cannot be used to generate accounting losses in excess of 15 percent of the vessels cost and can only be used if at least 30 percent of the construction costs were financed by the owner's capital fund.[22] In Italy, 40 percent of a ship's construction cost may be spread over the first three years from the date of the contract but not more than 15 percent may be claimed in any one year.[23] The Japanese government grants special depreciation deductions (on ships over 3,000 g.r.t.) equal to 20 percent of costs in the first year, effective until March, 1981.[24] In Norway, owners may choose between two special depreciation alternatives, 15 percent of cost allocated over four years not to exceed 1 1/2 times ordinary depreciation for the period or 25 percent of cost over four years, the amount not to exceed 50 percent of "otherwise taxable income."[25]

In the United States, a reserve fund program known as the

Capital Construction Fund exists (CCF). The rules governing the CCF allow the following deposits to be made; 1) earnings realized from the operation of agreement vessels, 2) net proceeds from the sale or loss of a vessel 3) earnings from investment of amounts in the fund. The fund is divided into three separate accounts; the ordinary account (consisting of earnings from the operation of ships), the capital gain account (gains from sale of ships) and the capital account (after tax depreciation deposits). Withdrawals from the fund must be used to purchase U.S.-built and registered vessels that will operate in the U.S. foreign trade, in U.S. noncontiguous domestic trade, on the Great Lakes, or the fisheries of the U.S. Rules exist that govern from which accounts the funds for new ships are drawn, since each account results in a different base for determining the capital cost of the newly acquired vessel.[26]

Countries such as Panama, Liberia, and Singapore totally exempt from income tax, earnings from the operation of ships engaged in international trade. In place of income tax, owners and operators must pay an initial registration fee (Liberia $1.20/n.r.t.,[27] Panama $1/n.r.t, Singapore $2.50/n.r.t.) and an anual tonnage fee of $1.20/n.r.t., Panama $1/n.r.t., Singapore $2.50/n.r.t.) and an annual tonnage fee of $0.10 per n.r.t. in both Liberia and Panama. In Liberia legislation exists which assures that these fees will not be increased during the 20 years following the initial legislation.

Several other countries have recently introduced tax-free exemption for shipping income similar to the Liberian and Panamanian examples. In China, income taxes are not levied on

newly built Chinese registered ships for the first 4-5 years of a ship's operation.[28] In Cyprus "income derived by the owner of a Cypriot ship for a period of 10 years until 1983" will not be taxed.[29]

As was mentioned previously, the Greek government introduced special emergency legislation as part of a major effort to repatriate the Greek fleet operating abroad. Included among these legislative changes were several tax measures. For example, the new laws waived all forms of taxation, duties and fees for shipping companies that are established in Greece. Greek ships are now taxed on a tonnage/age base. According to Emergency Law No. 465, "First Category" ships[30] are taxed according to the following schedule;

Ship Age	U.S. $ charge/ net ton
Over 10 but less than 20 years	$0.20
Over 20 but less than 25 years	0.30
Over 25 years	0.40

Ships less than ten years old are granted tax exemption until they reach that age while Greek-built and registered vessels enjoy a twelve-year tax holiday. Finally, ships less than 20 years old that are reconstructed, converted, or repaired in Greece are eligible for partial tax exemption for a ten-year period.

2. FINANCIAL ASSISTANCE IN THE CAPITAL PHASE

As was done in the previous chapter, financial assistance in the capital phase will be subdivided into the following

categories; loan guarantees, direct loans, construction subsidies and government ownership.

A Loan Guarantees

Since the reconstruction of the West German fleet in the 1950s, the German governments, both local and state, have supported various loan guarantee programs. At the local level such guarantees are usually tied to local projects and construction, at the federal level they are linked to the national flag. Both levels of government have issued second mortgages covering 60 to 80 percent of the initial investment. Owners pay 0.75 to 1 percent for such guarantees and are subject to government audits before such guarantees are granted.[31]

In Belgium, the government guarantees not only the reimbursement of principal but also interest and administration charges. Only certain kinds of loans may qualify for the guarantee program.[32]

In Greece, loans extended to shipowners by Greek financial institutions may qualify for the Greek Government Guarantee. Qualifying loans are those made for Greek built and registered ships that do not exceed 80 percent of the vessel's construction cost and bear a maximum rate of 7.5 percent . Furthermore, the Bank of Greece will reimburse financial institutions for the difference between the 7.5 percent rate applied on these loans and the rate at which these institutions may have to borrow. In addition, the institutions are guaranteed a 2 percent profit margin.[33]

In Norway, where it has been estimated that 80 percent of

ship financing is done abroad,[34] there exists an extensive government loan guarantee program. To enable Norwegian shipowners to obtain the finanacing required at reasonable rates, the Norwegian government issues guarantees for ships bought abroad (totalling $308 million in 1977) and for ships built domestically ($98 million).

Sweden is another country with a loan guarantee program which applies to loans obtained by Swedish shipyards from domestic or foreign institutions. Since 1977 the guarantee program has been extended to include loans to shipowners.[35]

In the United Kingdom, loans extended to shipowners by clearing banks are eligible for government guarantees. The Export Credits Guarantee Department, under arrangements with the banks, will issue a financial guarantee on loans intended to encourage the export of British-built ships.[36]

Finally, in the United States there is a program called Title XI that provides government insurance on interest and principal payments for mortgages used to finance the construction of certain vessels. To be eligible for the guarantee, the managing agent, the bareboat charterer, and the shipowners must all be U.S. citizens.[37] The vessels which may qualify for the loan guarantee are passenger, cargo, and fishing vessels plus tankers, towboats, dredges and barges that are designed principally for research or to be used in the domestic or foreign commerce of the U.S. Normally, the guarantee may not exceed 75 percent of the cost; however, in special cases the limit may be increased to 87 1/2 percent .[38] The purpose of Title XI is to encourage private enterprise rather than

government involvement in the financing of ships. As of 1977, the U.S. government had loan guarantees outstanding of approximately $5.8 billion.[39]

E. Direct Loans

In Belgium, the Minister of Commerce is responsible for advancing interest bearing loans to shipbuilders to be used for the construction of vessels or for renewing or developing maritime equipment. These loans must meet the Opportunity for Economic Co-operation and Development's (OECD) guidelines. The guidelines limit the amount of the loan to 70 percent of the vessel's construction costs, and such loans may have a maximum term of 7 years, and may not have interest rates of less than 8 percent . Interest-free loans may be approved by the Council of Ministers if a project is deemed as being in the national interest.[40]

In Denmark, the Ship Credit Fund, approves loans to Danish owners for ships purchased either domestically or abroad. Loans are also available to foreign owners purchasing Danish-built vessels. Also the government may extend credit, amounting to a maximum of 50 percent of the transaction value, for the purchase of ships of fairly new construction. In October, 1977 a new loan program was introduced for Danish owners purchasing ships from domestic yards. The terms were a maximum credit of 30 percent of the construction costs, a ten-year repayment plan, and an 8 percent rate of interest. There also exists supplementary credit for the difference between the domestic program and OECD guidelines for ships constructed in foreign yards.[41]

In West Germany, individual government loans may not exceed $3 million or 70 percent of the ship's construction costs. The maximum repayment period was twelve years and the interest rate was only 5.5 percent (1976 terms). Provisions in the loan agreement provided for a two-year grace period in which no repayments on principal needed to be made.[42]

Shipping companies in West Germany may also be eligible for loans on conversions (repayable over seven years, at 7.5 percent interest), the building of certain ships[43] (twelve and a half years, at 7.8 percent with a 2 1/2 year grace period), or repairs (up to 80 percent at 9 percent rates).

Japan is the world's most prodigious producer of deep-sea vessels and it is not surprising to find that the industry is assisted by a goverment loan program. This program, administered under auspices of the Development Bank of Japan extends loans up to 70 percent of a ship's cost. The interest rates on these loans ranged from 6.5 percent to 7.5 percent as of April 1977. The Japanese government may also covers one third of the costs associated with exported vessels, and a further 27 percent may be paid as a loan directly to the shipyard.[44]

Three European countries, Italy, Portugal and Spain, also have government loan programs. In Italy, shipowners "may be granted up to 70 percent of the cost of construction, modernization, or repair of ships."[45] On these loans, repayable over fifteen years maximum at 15.5 percent interest, half the interest expense is subsidized by the government on vessels greater than 3,000 g.r.t. In Portugal the government has extended an open line of credit to cover the needs of the two

government-owned shipping companies. In Spain, a loan program established by Royal Decree grants eight to twelve year loans on certain vessels at interest rates of 7.5-8 percent.[46]

Among the Scandanavian countries, Norway as of March 1977 permitted the issuance of second mortgages up to 80 percent of costs with interest rates in the range 8 1/2 to 9 percent.[47] Credit terms on loans to lesser developed countries for the purchase of Norwegian-constructed vessels were especially attractive (90 percent of the costs, 15 years to repay, interest rates of 5-6 percent with a 3-year grace period). Loans made to shipyards for the restructuring of facilities are twelve-year loans and may be interest free. In Sweden, there is somethng called the "write-off loan" for Swedish owners purchasing ships from domestic yards. The five-year loan may be granted for up to 25 percent of the vessel's cost. If at the end of five years the assessed value of the ship is greater than the original purchase cost, then the gain must be shared 50/50 with the government.[48]

Finally, in Brazil the government grants credit to shipping lines up to 85 percent of the costs associated with having a ship constructed in Brazilian yards at 8 percent interest rates.[49]

C. Construction Subsidies

In Brazil, the Marine Refinancing Fund,[50] supplies funds to help finance the construction of cargo vessels built in that country. The shipowners are able to borrow money from the fund and must repay to the fund an amount equivalent to estimated construction costs of a similar ship built abroad. In effect,

the Brazilian government is subsidizing shipowners for the difference between the higher Brazilian building costs and the lower foreign yard's costs. Obviously, no real benefit is accruing to the shipowners, since they are paying the same price for ships that they would have paid if there had been no subsidy program and they had been allowed to purchase ships abroad.

In France, French owners may only place orders abroad if they can show that domestic construction costs would be at best 10 percent higher than for a similar ship constructed in foreign yards. Between 1976 and 1980, shipowners ordering French-built ships intended for French registry, may qualify for a construction subsidy that varies with the kind of ship ordered.[51] The subsidy rates are, (15 percent) for containerships, barge carriers and RO/RO vessels, 10 percent for vessels with several decks, 2-8 percent on bulk carriers and 3 percent on small carriers. A modernization subsidy exists in West Germany, and is paid to German owners agreeing to put such ships under German registry vessels constructed with the aid of such subsidies.[52] If these vessels are sold within six years the full amount of the subsidy must be repayed (4-year limit on vessels constructed after 1979). After six years, the amount of the subsidy to be repaid declines by 20 percent per year.

The Dutch government has undertaken to repay shipowners for five years an annual amount equal to 4.75 percent of a ship's construction cost. To qualify for the subsidy, vessels must be Dutch-built, registered, and crewed. Shipbuilders also may receive interest subsidies that are intended to enable them to extend credit at competitive rates.[53]

In Italy, in addition to the regular 30 percent subsidy paid on Italian-built ships, there is also a "scrap and build" subsidy program. Shipowners who scrap obsolete vessels and replace them with approved vessels may receive a subsidy of 30,000 lire per weight ton ($417 Cdn/ton). Vessels scrapped must be at least 15 years old and the new vessel constructed must be put under Italian registry for a minimum five-year period.[54]

In the United Kingdom, new shipbuilding and programs must first be approved by the European Community Council (ECC). The Industry Act of 1975 provides for government credit to help finance the construction of ships in U.K. yards ordered by U.K. owners.[55]

An extensive construction subsidy program exists in the United States pursuant to Title V of the Merchant Marine Act of 1936. According to the Act, the government will subsidize shipyards for an amount equal to the difference between the actual U.S. costs and a representative foreign construction, up to a maximum of 50 percent of the vessel's actual cost. To qualify, the following conditions must be met, the owner must be a U.S. resident, the ship must be placed under U.S. registry for at least twenty years, and it must be crewed by American seamen.[56] Military features built into a ship's design are fully paid by the government.

D. Government Ownership

Brazil, is probably one of the best examples of government ownership in international shipping. The government there controls 80 percent of the merchant fleet tonnage and all the

operating losses of Lloyd Brazileiro, the country's principal foreign trade shipping company, are covered by the government. The government is by far the largest shareholder in Lloyd Brazileiro, the Vale de Ric Dcce Nabegacao (DOCENAVE - oil and iron ore) and in Frota Nacionale de Petercleiros (FRONAPE) the nation's largest tanker fleet. Government ownership and involvement exists to the same extent in most of the other South American countries.[57]

France is another country where the government is actively involved in shipping. The government of that country makes up any losses experienced by the nation's largest shipping line, the Compagnie Generale Maritime. Furthermore, the government contributes a sufficient subsidy to pay a small dividend to its public shareholders.[58]

In Finland, the government has a minority interest in Finnlines Ltd. (a Finnish shipping company), and has equity in several non-commercial ships, such as icebreakers and survey ships. Valmet Oy, the country's largest ship producer, is also controlled by government interests. In Sweden the shipyards have been nationalized under a holding company known as Swedyards Corporation. In Denmark, government ownership is limited to ferry services on internal routes or operating between Denmark and Sweden or Germany.

The government in Liberia has recently become involved in shipping through the Liberian Shipping Corporation (LSC) and has become a 50 percent partner in two Liberian Shipping companies, Total Involvement and The Providence Shipping Company.[59]

A high degree of British government ownership is vested in

the British Shipbuilding Corporation (BSC) established July 1, 1977. The corporation consists of 19 shipbuilding companies, 5 diesel marine engine companies and 3 training companies and is totally government owned. The government also has an interest in BP Tankers through its interest in the parent company, British Petroleum.[60]

3. NONFISCAL ASSISTANCE MEASURES

The last form of assistance measure to be examined in this chapter is nonfiscal measures. Nonfiscal measures do not require any direct cash transactions or credit, and can be categorized as being, a) cargo preference, b) flag discrimination, c) bilateral agreements and d) others.

A. CARGO PREFERENCE

In most of the countries studied, cargo preference practices were restricted to government aid and military cargoes. However, in some countries cargo preference is also extended to cover specific commodities thought to be in the national interest.

In Brazil, and most of the other South American countries, imports and exports in which the government provides financial assistance must be carried in national-flag ships when available (unless a 50-50 bilateral agreement is in effect). The Brazilian government also has a monopoly over the transportation of petroleum and has proclaimed that all ordinary paper products must be carried in national bottoms.[61]

In Peru, the Compagnie Peruana de Vapores (CPU) is to be

given preference in the carriage of all government cargoes. Also, all cargoes that are exempted from import duties must be carried in Peruvian ships.[62]

In France, two-thirds of the crude oil imported for domestic usage must be carried in French-flag ships or in ships belonging to approved charter parties. An antiquated law passed in 1931 dictates that 50 percent of French coal exports are to be carried in French vessels; however, waivers are frequently granted to foreign operators wishing to carry coal exports.[63]

Four countries that have designated petroleum as a preferred cargo are: Korea, Saudi Arabia, Mexico, and Spain. In Saudi Arabia, 25 percent of that country's oil exports are to be carried in Saudi-owned tankers. In Korea and Spain, oil is only one of several protected commodities. The Transportation Ministry of Korea stipulates that imported crude, iron ore, logs, grains, and fertilizers are to be carried in Korean-flag ships whenever possible. Petroleum, tobacco and cotton are the Spanish imports that are restricted to national flag vessels. In Mexico, the government agency PEMEX owns and operates the nation's oil tanker fleet that moves all the oil exports of that country.

In the United States, the Cargo Preference Act of 1954 provides that 50 percent of specialized goods must be carried by privately-owned U.S.-flag ships when avaiable. the specified goods are defined as including "goods purchased by the government for its own accounts, goods provided by the government for the account of any foreign nation, and goods for which the government has advanced funds."[64] The Military

Transportation Act[65] dictates that all supplies transported by sea for the U.S. armed services must be carried aboard U.S. registered or owned vessels.

B. FLAG DISCRIMINATION

Flag discrimination refers to "a variety of policies, laws, regulations, or trading practices that some countries employ to favour their own shipping industries."[66] It seems that such practices are becoming more and more prevalent in international shipping, especially in the South American countries.

In Brazil, it is government practice to approve only those conferences in which Lloyd Brasileiro is a member, and only conferences that are approved may engage in shipping operations in Brazil. Such rules guarantee a portion of the Brazilian liner trade for the Brazilian-flag vessels of Lloyd Brazileiro.[67]

In Peru, Decree Law No. 20759 (Oct. 74) dictates that all public bodies are to give preference to the Compania Peruana de Vapores (CPV) in the transportation of goods for import or export. Fifty percent of imports and exports (calculated on a monthly basis) must be reserved for Peruvian-flag ships.[68]

In the Phillipines, exporters are allowed to deduct from income for tax purposes, 150 percent of their shipping costs if they use Phillipian-flag vessels. This privilege is increased to 200 percent if the company is registered with the Board of Investments.[69]

In Mexico, a cheaper export tax is charged for honey and cotton if they are transported in Mexican-flag vessels. Provisions under the Mexicc Export Tax allow special rebates if

Mexican insurance agents or carriers are used.[70]

Cabotage is another form of flag discrimination that "denotes the widespread practice of reserving the trade along a nation's coast to ships of the national fleet".[71] Cabotage is perhaps the oldest and most common form of assistance to shipping. In Europe, the following nations have invoked cabotage legislation; Denmark, Finlnd, France, West Germany, Spain, Greece, Italy.

Some countries may make allowances to cabotage restrictions in case of a shortage of national-flag vessels. For example, in Brazil, coastwise trade is reserved for national ships "unless public interest demands an increase in services which national vessels cannot supply."[72] In West Germany, foreign ships are allowed in domestic trade only if no German ships are available or if only available at substantially higher rates.[73] In Panama, coastwise trade is restricted to Panamanian-flag vessels, however, it is possible for foreign ships to obtain a permit enabling them to take part in coastal shipping providing the required fee is paid.

In the United States, vessels must not only be U.S. registered to engage in U.S. coastwise trade, but they must also be U.S. built. Other legislation extends the coasting laws to U.S.[74] territories and possessions.

C. BILATERAL TRADE AGREEMENTS

Many countries[75] , in an endeavour to guarantee cargo for their national fleets, have signed trade agreements with other countries. These agreements generally apportion trade between

the contracting states on a 50/50 basis.

In Brazil, Resolution 3669, dated April 1974, originally stipulated that coffee and cargo shipments from Brazil to the U.S. were to be reserved on a 50/50 basis for Brazilian and U.S.-flag vessels. The rule was actually implemented on a 40/40/20 basis (40 percent reserved for Brazilian ships, 40 percent American and 20 percent others) but was changed in 1971 to a 50/40/10 plan. Brazil also has 50/50 trade agreements with Argentina, Chile, Mexico, Peru, Uruguay and Algeria. Further agreements have also been signed with the USSR, Poland, Romania and West Germany.

France has 50/50 agreements with Tunisian and Algeria plus a 40/40/20 agreement with the Ivory Coast. Germany has also signed a similar agreement with the Ivory Coast.

As of 1978, Greece had signed shipping agreements with the following countries; the U.S.S.R., Poland, China, and Singapore. India has agreements with Bulgaria, the Soviet Union, Poland and the German Democratic Republic. India also has an agreement with the United Arab Republic which stipulates 50-50 parity in terms of cargo tonnage and earnings. Agreements among other countries include South Korea and the following countries; the United States, West Germany, and Japan.

Finally, the U.S. has, in addition to the agreements already mentioned, an understanding with Brazil that ensures equal access to government controlled cargoes traded between the two countries. There even exists a trade agreement between the two super powers, the U.S. and USSR that provides that each country shall carry a "substantial share" (33 1/3 percent) of

the bilateral cargo traded between them.

D. OTHER NONFISCAL MEASURES

Included in this section are flag-related assistance measures that did not seem to fit under any of the previous three categories. These include legislation restricting the importation of ships, repair stipulations, and measures intended to combat flag discrimination. In France, the government has the statutory authority to restrict the charter agreements that French owners may have with foreign interests. In Spain, special import licenses must be obtained for ships brought into the country and such licenses are granted only with great reluctance.[76] In both Peru and the United States there is legislation that favours the repair of national-flag vessels in domestic yards. In late 1975, the Norwegian government introduced legislation allowing Norwegian ship owners to register their ships under foreign flags under certain circumstances (i.e., Norwegian manning cost too high or to avoid flag discrimination practices).[77]

Finally, at least three countries have measures to protect their national-flag fleets from the discriminatory action of other countries. In West Germany there exists "Measures Against Detrimental Shipping Policies of Foreign Countries" which specifies that the "government can restrict conclusions of freight contracts between German residents and carriers of countries which exclude German ships from free competition."[78] Contracts with carriers resident in Brazil, Burma, Indonesia, Uruguay, Venezuala and the East Block countries must be licensed

by the West German government. Similar retaliatory legislation also exists in Italy[79] and Japan[80] where the governments may restrict the use of ships, or prohibit their loading/ unloading if German ships are excluded from trade in those countries.

These are the shipping assistance measures that exist in the major maritime nations, and in some of the countries that are principal trading partners with Canada. The chapter demonstrates how, and to what extent, governments of other nations assist their shipowners and operators. This raises the question of, "Which of these measures, if any, should Canada attempt to match"? To be able to tackle this question, it is first necessary to examine the assistance measures that currently exist in Canada. This is done in the next chapter entitled "Shipping Policy in Canada."

VI. SHIPPING POLICY IN CANADA

The previous chapter examined the shipping assistance measures that exist throughout the world. Now it is time to see what shipping assistance measures exist in Canada. This chapter discusses current Canadian shipping policy, and some of the more important Canadian shipping studies that have influenced the formulation of this nation's shipping policy. Finally, this chapter finishes with a presentation of the specific shipping assistance measures that exist in Canada today.

1. MAJOR CANADIAN SHIPPING STUDIES OF THE PAST DECADE

Since 1970 there have been two major quantitatively-oriented studies conducted investigating particular facets of the Canadian merchant marine issue.

The first of these, produced in 1970 by Hedlin-Menzies & Associates for Transport Canada, was entitled Canadian Merchant Marine: Analysis of Economic Potential. One objective of the study was;

> To evaluate the potential benefits and costs to the Canadian economy that would be associated with the operation of privately owned deep-sea Canadian ships.[1]

The study also attempted to quantify the public cost of various assistance measures that could be used to encourage the development of a privately-owned Canadian deep-sea fleet.

One of the conclusions of the report was that the "net benefits generated by a Canadian merchant marine are extremely sensitive to assumptions and cost projections adopted."[2] The study also investigated the type of vessels that would be most commercially viable. In this category were ships over 45,000

d.w.t. designed to transport iron ore and coal exports or crude oil imports. These conclusions were based on a 6 percent social discount rate. However, if a higher discount rate were used (equal to a private investor's expected return) then none of the vessels investigated would be economical. Furthermore, a cost-benefit analysis using the higher discount rate showed a social efficiency loss if Canadian privately-owned ships were introduced.

The Hedlin-Menzies study also conducted sensitivity analysis on several of the model's key variables. These included the usage of different social and private discount rates, varying assumptions regarding the opportunity costs of crewing, and various other cost assumptions (i.e. fueling costs, crew sizes, vessel costs, interest rates, vessel life and vessel scrap value).

With regards to specific measures intended to encourage the development of a Canadian fleet, the study concluded by saying;

> The preceeding analysis indicates that preferred forms of assistance would include loan guarantees as a basic measure. In addition, investment grants, investment allowances, and direct government loans provide effective methods for granting financial assistance to merchant shipping.[3]

and furthermore that;

> The selection of a particular type or form of assistance is beyond the scope of this study, and could involve consideration of non-economic goals related to Canadian merchant shipping.[4]

The second major shipping study done was the Alcan Study published in September 1977, for the Research and Development Centre of Transport Canada. Listed among the objectives was the following;

To quantify and compare direct benefits and costs which would accrue to the Canadian economy from the carriage of bulk, neo-bulk, general cargo and containers in selected commodity trades using:

1. foreign shipping services
2. Canadian managed and operated foreign-flag ships
3. Canadian managed and operated Canadian-flag ships with vessels being purchased from the cheapest source of supply.
4. Canadian built, managed, and operated Canadian-flag ships[5]

The report projected costs and revenues of the four options listed above then calculated their commercial viability under varying assumptions. The most attractive option was option 2 listed above, which was followed closely by option 1. Substantially less attractive was option 4 which was followed closely by option 3.[6]

2. CURRENT CANADIAN SHIPPING POLICY.

The major Canadian statute dealing with shipping is the Canada Shipping Act.[7] This Act covers many aspects of Canadian shipping including; the recording, registry and licensing of ships (PART I), certification of officers (PART II), the rights of seamen (PART III), pilotage rules (PART VI), safety legislation (PART VIII), pollution of the water and air (PART IX), and the coasting trade of Canada (PART XV).

In 1975 the Liberal government introduced Bill C-61 in parliament. This bill, referred to as the Maritime Code was intended to update certain provisions contained in the Canada Shipping Act that dealt with the registration and licensing of ships and the coasting trade. The Bill, was never passed in that form because of the opposition raised to the proposed sections on the coasting trade. These sections were subsequently removed

from the Maritime Code and the Act was reintroduced into parliament where it finally received royal assent in the 30th session of parliament.

The objectives of the Maritime Code are stated in Book I, Section 2 of the new Act. The objectives are to ensure that Canadian shipping laws;

> (a) more adequately recognize and provide for the interrelationship between the interests of Canadians in the continued and expanded use of that mode of transport and in other economic, sociological and environmental considerations, including traditional considerations related to the safety of life at sea;
> (b) express the extent to which such law must, under current conditions, apply to ships and to persons on board ships both within and outside Canadian waters in order to adequately protect legitimate Canadian interests; and
> (c) establish a more effective base of Canadian law from which to seek international regulation of shipping for the protection of the environment.[8]

The Act outlines the requirements for owning and registering ships in Canada (Book II of the Code) and defines the rights, privileges and responsibilities of the owners of Canadian recorded, registered, and licensed ships. Section 19 of Book II declares that the only groups that are qualified to own Canadian registered ships are "Canadian citizens domiciled in a province" and corporations that meet certain requirements concerning place of incorporation, place of business and the degree of Canadian management and directorship (see Appendix 5). The new rules concerning the registration of Canadian ships are much more stringent that they previously were under section 6 of the Canada Shipping Act (see appendix 6). Canadian registry is no longer extended to other British Commonwealth subjects as it

was previously.

In March 1979, the government of Canada published its long awaited policy paper on Canadian deep-sea shipping. The report, A Shipping Pclicy for Canada "set out the main elements of a deep-sea shipping policy for Canada, taking into account recent and anticipated developments in Canada and abroad."[9] The report examines the nature of Canadian waterbourne trade, recent trends and developments and international shipping, and other major Canadian shipping issues. Section 5 of the report discusses the question of a Canadian deep-sea fleet, its commercial viability, and hcw it could be encouraged.

The paper expresses the objectives of federal government ccncerning Canada's deep-sea trade, "to ensure the continuing availability of adequate and economic shipping services as part of the overall transpcrtation system serving Canada."[10] A second ancillary objective is identified as "being able to capitalize on significant cpportunities." The exact interpretation of "adequate and econcmic shipping" or "capitalize on significant opportunities" is not elaborated on in the report. Despite this ambiguous phrasing, the report does clarify, to a certain extent, the federal government's stance on the issue. The basic conclusion of the report is;

> that present circumstances do not warrant the provision of new tax or financial measures to support the development of a Canadian deep-sea fleet.[11]

Finally, the report mentions possible areas of further government study. These include; Canadian-flag participation in government aid cargoes, Canadian-flag participation in Arctic develcpment, and legislaticn tc protect Canadian interests when

they are threatened by the action of foreign governments or carriers.

The Conservative government, during its brief sojourn in power, published, in October 1979, a report entitled Background Paper on Deep-Sea Shipping . The conclusions reached in this report are contrary to those reached in the earlier Liberal report A Shipping Policy for Canada. The conclusion reached in the Conservative report is;

> ... in addition to steps to increase governmental competence and capacity in the shipping field, it would be desirable to put in place measures to encourage the gradual development of a Canadian deep-sea fleet.[12]

During the May 1979 election, one of the platforms of the Progressive Conservative party was the encouragement of a Canadian deep-sea fleet, so it was not surprising that the background paper reached the conclusions it did. Once again the Canadian merchant marine question has become a political 'hot potato'.

The most recent Transport Canada publication on deep-sea shipping is a collection of briefs from various shipping parties on the topic of Measures to Encourage the Gradual Development of a Canadian Deep-sea Fleet. The purpose of this publication is obviously as a follow up to the Background Paper and addresses the question "What measures should the government use to encourage the gradual development of a Canadian deep-sea fleet"?[13]

Once again the political climate in Canada has changed with the re-election of the Liberal party. Transport Canada officials have once again begun discussions with industry leaders involved

in shipping. It should be very interesting to see which course of action Transport Canada will follow under the new Liberal regime. Will they revert back to their original 'no assistance' stance promulgated earlier or will they continue along the Conservative's line of thinking? In the meantime the industry is left in a state of limbo and does not know what to expect.

3. THE CANADIAN MERCHANT MARINE ISSUE

No discussion on Canadian shipping policy would be complete without mention of the Canadian merchant marine issue.[14] The basic dispute is whether the government should undertake measures to encourage the establishment of a Canadian merchant marine (ships registered in Canada). The merchant marine issue has dominated Canadian shipping policy discussions for the past thirty years and, as can be seen from the previous section, still remains an unresolved issue.

The two most commonly cited reasons against the establishment of a Canadian merchant marine are that the costs involved would be prohibitive and, reliance on competitive foreign flags has worked well in the past, so why upset the status quo? Proponents of the free-market system argue that the needs of Canadian suppliers and consumers are best fulfilled through reliance on international shipping markets. Any government involvement is seen as interference in an otherwise competitive market.

The advocates of a Canadian merchant marine argue that not all the benefits associated with such a project are being considered and that international shipping is no longer a perfectly competitive market. These supporters of the merchant

marine argue that if it was possible to quantify all the intangible benefits, then social benefits would surely outweigh the social costs of such a program. The question thus becomes what are these nonquantifiable benefits and are they important enough to justify the costs generally associated with the establishment of a Canadian merchant marine? The major arguments and counterarguments for a merchant marine are presented below.

Employment

Establishing a merchant marine will generate jobs for Canadian officers, seamen, and people involved in related industries such as shipbuilding, insurance, and freight forwarding. Through the economic multiplier the benefits will spill-over into many other sectors as well.

The counter to this argument is that the labour and resources attracted to shipping because of the new government incentives must ultimately be drawn from other sectors in the economy. Productivity gains will occur in shipping but they will be offset by a decline in productivity in the industries from which the factors of production are drawn.

Balance of Payments

Shipping because of its international structure is an excellent earning source of foreign currency. Canada pays $2.5 billion in shipping bills to foreign shippers every year. If this money were kept in the country and paid to Canadian ship operators instead then the balance of payments problem would be lessened.

The specious logic behind this argument is that although a national fleet would generate foreign currency it would also have to pay out many of its expenses in foreign currency . Thus international shipping would not help the balance of payments problem as much as originally proposed. A 1966 U.S. Maritime Administration study done of the U.S. Merchant Marine indicated that only $0.30 of every $1 of shipping revenue would be retained by U.S. operators. This 30 percent contribution represents only the *impact* of the merchant marine on the balance of payments, it does not represent the *value* of that impact.

Defence

In case of war, or a threat of war, Canada would have need of a merchant marine that would be capable of fulfilling the logistic requirements of military operations.

The natural counter to this is that Canada does not need a merchant marine to support her during times of war because she can rely on her NATO allies. Secondly, Canada cannot afford the luxury of a military standby merchant fleet.

Continuity of Service

If Canada has a merchant fleet then there will always be a supply of ships to carry Canadian goods to market regardless of the political situation.

The counter to this type of reasoning is that shipping services are offered by many countries and that if one source of shipping were withdrawn then numerous other sources can be found.

Prestige

Showing the Canadian flag on international vessels brings prestige and honour to Canada and advertises the fact that Canada can compete in the international markets. Canada is the tenth most important country for waterbourne trade, yet only has the forty-third largest national fleet, does this have to be?

The rebuttal to this is that Canada can gain prestige and honour in a host of other activities in which we have a competitive advantage such as communications or electronics. A merchant marine is an expensive method of gaining world recognition.

Protection from Discrimination

With the increasing amount of flag discrimination that is occurring the only way of protecting Canadian interests is through the establishment of a Canadaian merchant marine. A strong merchant marine would dissuade foreign countries from implementing discriminatory measures against Canadian ship operators.

The contrary reasoning is that Canada can always designate Canadian-carriers and that they need not be flying the Canadian flag. The establishment of a Canadian merchant marine is a more drastic measure than is required.

These are the arguments for and against a merchant

marine.[15] The issue still remains unresolved and judging from the latest government developments the controversy is likely to continue.

4. EXISTING CANADIAN GOVERNMENT ASSISTANCE MEASURES

To facilitate the comparison between the assistance measures that exist in Canada and those that exist elsewhere the same three class categorization, as introduced in chapter IV, will be used, financial assistance in the operating phase, financial assistance in the construction phase and nonfiscal assistance measures.

A. Financial Assistance In The Operating Phase

Operating Subsidies:

In Canada, no operating subsidies are paid to ships operating in foreign trade. Some subsidies are granted to a few ships that are engaged on "essential and coastal waters"[16] Subsidy applications are reviewed by Transport Canada officials and are only granted on the grounds of public convenience or because such a service will promote trade and be of economic service to the communities serviced.[17] Domestically, the major ferry operators are in receipt of subsidy payments and payments "of the excess of the expenditures over revenue " are made to Canarctic Shipping Company Limited who own and operate the M.V.Artic, an experimental ice-breaking bulk-carrier.[18]

Government-provided Facilities:

The Canadian government provides many shipping related facilities most of which are intended to aid domestic shipping,

but many of these facilities are also used by deep-sea operations as well. Transport Canada provides funds to the Atlantic and the Great Lakes Pilotage Authorities, the National Harbours Board, the St. Lawrence Seaway Authority, and the Marine Transportation program. The funds allocated to these programs are used for a variety of uses including the construction of canals, maintenance of navigational aids, ship channels, search and rescue operations, icebreaking, and traffic control. The Department of Public works also allocates funds ($52.76 million in the 1977-78 fiscal year)[19] to its marine program for construction projects associated with harbours and rivers.

Special Subsidies:

Special subsidies, as defined earlier, include exemptions from custom duties and value-added taxes for ships and ship construction materials, discriminatory dues and fees favouring national-flag ships, special exchange rate benefits, and the availibility of short-term operating loans.

The only special subsidy existing in Canada is that custom duties need not be paid on ships that are imported and which are to be used exclusively in international trade. Materials imported for the building of ships to be exported are also exempt from customs duties. This is not, in the true sense, a subsidy to shipping since it is general Canadian policy to exempt from customs duties any materials that are to be used in goods intended for export. Thus shipbuilding is not the recipient of a "special right or privilege" and is treated the same as any other industry that may be involved in the export

trade.

Vessels that are constructed and registered in a Commonwealth country are admitted into the country duty free and are permitted to operate in the Canadian coasting trade. Commonwealth registered vessels that were built in a non-Commonwealth country must pay a duty of 25 percent before they may engage in coastal trading.

Tax Subsidies:

Before investigating the tax subsidies existing in Canada it is appropriate to provide a little background on the Canadian tax law system.

The first item of importance is who is liable to pay Canadian income tax. The Income Tax Act states that a PART I tax will be levied on "the taxable income for the taxation year of every person[20] resident in Canada at any time in the year" and also upon taxable income earned in Canada by a non-resident. The important difference is that Canadian residents are taxed on their world income while residents are only taxed on their Canadian-source income.

The tests for determining the residency of individuals are quite different from those that are applied to corporations. An individual will be considered a resident in Canada, for the purpose of the Income Tax Act, if they "were at the relevant time ordinarily resident in Canada,"[21] or if they fall within the extended scope of residency as defined in section 250(1). "Ordinarily resident" has been interpreted by the courts as "where in the settled routine of his life he regularly, normally, and customarily lives." Factors considered when

determining "ordinarily resident" may include the length of time the person stayed in Canada, their reasons for being in (out of) Canada, the person's background and family ties, citizenship held, and other factors indicating permanence. According to section 250(3), an individual may also be deemed to be a resident of Canada if they were, during the year, physically present in Canada for 183 days or more, or if they were a member of the Canadian armed forces. A corporation is deemed a resident if its 'mind and management' meet in Canada or if the corporation was incorporated in Canada according to some specific rules.[22]

Many Canadian companies are able to defer the payment of Canadian taxes by establishing a foreign subsidiary in a tax-haven country. Since the new corporation is not incorporated in Canada and the mind and management do not meet there, the shipping company is only liable for tax on any income earned in Canada, providing that Revenue Canada does not view the operation as being one established for the purpose of tax avoidance. However, even the shipping income earned in Canada may not be taxable because of a special provision in the Act which states that "income earned in Canada by a non-resident from the operation of a ship or aircraft in international traffic" shall not be included in taxable income provided that the non-resident's country extends similar relief to Canadian operators.[23] Thus, it is possible to defer payment of Canadian tax entirely by establishing a head-office in Bermuda, Bahamas, or any one of the many so called "tax haven" countries that extend similar relief. Naturally the company must pay tax in

that other country but the tax rate is considerably lower or shipping income is exempt from tax.

It is important to stress that Canadian taxes are deferred, not entirely avoided in these kind of arrangements. When profits from these 'off-shore' offices are repatriated back to Canada a tax must be paid on them then. However, until the company elects to repatriate its shipping profits it may accumulate and reinvest its profits in shipping virtually tax free.[24]

Unless specifically excepted, ships are included in asset class 7 that allows a maximum annual capital cost allowance (CCA) of 15 percent based on a declining balance to be deducted from income.[25] The exceptions to this general rule are i) vessels acquired by fishermen before 1972 and ii) vessels fulfilling the requirements set out in Reg 1100(1)(v). Regulation 1100(1)(v) allows a 33 1/3 percent straight-line capital cost allowance on i) new ships that were constructed in Canada and which are registered in Canada or in a country under satisfactory conditions of the British Shipping Agreement[26] and ii) on conversion costs done in Canada.[27] Each vessel or conversion fulfilling these requirements is set up as an individual asset class and then subject to the usual rules regarding capital gains and recapture.

Ships do <u>not</u> qualify for the government's investment tax credit that is applied to the purchase of prescribed machinery and equipment. The basic total credit is 5 percent of the asset's capital costs and is deductible from <u>tax</u> otherwise payable. Ships, however, do not qualify for the credit because

they are not used in Canada in a designated activity as defined in section 127(10). The advantages to shipowners would be substantial if the investment tax credit were extended to include ships since the industry is very capital intensive.[28]

Concerning the disposition of ships, insurance proceeds that are used to acquire replacement property within a specified time will not be included in taxable income. Otherwise if a ship is disposed of, the owner is subject to pay taxes on half of any capital gain experienced, and an amount known as recapture may also have to be brought into income. The amount recaptured would be equal to the amount by which the selling price exceeded the undepreciated capital cost. If the sale price was in excess of the original capital cost (adjusted cost base) then there would be full recapture of depreciation and the excess of the selling price over the original capital cost would be treated as a capital gain. There used to be tax legislation in Canada that made it possible to defer taxes on the recaptured portion of a ship's capital cost but these sections are no longer in force. However, it is still possible for individuals who own ships to defer tax on recapture or capital gains by purchasing an income averaging annuity. Prior to 1972, it was also possible to avoid capital gains on the disposition of ships since capital gains were not taxable at that time.

Canada has tax treaties with many countries and in some of these treaties shipping income receives special treatment. For example there is the Canada-United States Tax Convention which states that "shipping income earned in one State from the operation of ships registered in that state shall be exempt from

taxation in the other contracting State."[29] This means that a company that is deemed to be a resident in Canada for tax purposes is not subject to tax on income earned in the U.S. by any U.S.-flag vessel that it might operate. Similar provisions exist in the Canada-U.K. Tax Treaty and in other tax agreements that Canada has signed with other reciprocating nations. When conflicts arise between the Income Tax Act and a Tax Treaty it is the Tax Treaty that overrules the Act.

There are several other tax provisions that directly affect Canadian shipowners and operators, the first of these deals with leasing.[30] These sections are relevant because many ships that are operated in Canada are on lease or charter agreements (as was described in chapter II). These particular sections of the Act limit the amount of CCA which may be claimed by the owner of leased equipment. These restrictions make it unattractive for banks and other intermediataries to become involved in leasing operations. In a capital intensive industry such as shipping leasing restrictions eliminate an alternative source of financing capital.

Another contentious issue is the applicability of PART XIII tax to charter and leasing arrangements with non-residents. The Act through PART XIII levies a 15 percent withholding tax on certain payments to non-residents. One of these is rental payments and the debate is whether some types of charter arrangements are in fact lease payments and thus subject to the 15 percent withholding tax. Although the government has threatened to interpret charter arrangements as consisting of rental payments it has yet to actually apply this particular

part of the Act to such payments. However, the uncertainty created by the entire matter, has forced many chartering arrangements tc be done through "offshore" subsidiaries.

B. FINANCIAL ASSISTANCE IN THE CAPITAL PHASE

The Canadian government does not have any government guarantee programs to assist domestic ship owners and operators. Canadian shipyards, however, do benefit from a guarantee-type program provided by the Export Development Corporation (EDC). This program "ccnsists of insurance of export credit normally provided by Canadian charterd banks beyond five years"[31] and enables shipyards to offer favourable credit terms to foreigners purchasing ships in this ccuntry.

The EDC is also involved in providing direct loans to foreign owners and operators who contract to purchase vessels from Canadian shipyards. The credit terms of these loans meet OECD guidelines (1977) which insist that loans not be greater than 70 percent of the vessel's costs, do not exceed seven years, or carry less than an 8 percent rate of interest. Canadian shipowners and operators are eligible for thes EDC loans and must raise capital through the usual commercial channels or from the export loan programs of other countries.

The shipbuilding industry last year received construction subsidies from the federal government amounting to $75 million. These funds came from two basic sources, the Department of Industry Trade & Commerce (the Trade Industrial Program $59.2 million)[32] and the Department of the Environment (the Fisheries and Marine Program).[33] As can be seen from Appendix 7 the construction susidy rate offered by IT&C has fluctuated widely

from a high of 40 percent in 1961-62 to a low of 0 percent from February 3, 1965 to December 31, 1965.

Effective March 6, 1975 the Ship Building Industry Assistance Program was introduced. The construction subsidy rate was set at 14 percent and was to be reduced by 1 percent each subsequent year until it reached the 8 percent level. However, on March 1, 1977 the government introduced temporary stimulus measures for the shibuilding industry and increased the subsidy rate to 20 percent. These temporary measures have since been allowed tc lapse, and on July 1, 1980 the rate reverted back to 9 percent with a planned reduction to 8 percent next year.[34]

Under a 1976 program, money spent by shipbuilders for the modernization of equipment will be matched by the federal government up to a maximum of 3% of the modernization costs.[35]

Government ownership in shipping is almost non-existent in Canada and is restricted to the ownership of six ferry vessels that are on charter to private ferry operators. The government also has 51 percent equity in Canartic Shipping Company Ltd. which operates the M.V. Arctic the world's first ice-breaking bulk-carrier.

C. NCN-FISCAL ASSISTANCE MEASURES

In Canada, there do not exist any bilateral shipping agreements or cargo preference laws, although the Canadian government has recently stated that it "intends to assess the possibilities for Canadian-flag participation in the shipment from Canada of aid and certain commercial cargo."[36] The government also intends to restrict the carriage of processed or partially prccessed resources from the Arctic regions to

Canadian-flag vessels "where they are available at a reasonable price."[37]

Canada, similar to many other countries, has legislation that reserves some areas of shipping for national-flag vessels only. Traffic between Canadian ports located in the Great Lakes, and the St.Lawrence is restricted to Canadian-flag vessels. Vessels other than Commonwealth registry are not entitled to engage in the Canadian coasting trade.[38] Vessels that are constructed and registered in Commonwealth countries are allowed to operate in the Canadian coasting trade with the exception of the Great Lakes and the St.Lawrence regions. The entire subject of the Canadian coasting trade is currently being investigated by the federal government authorities.

This chapter has examined current shipping policy in Canada; the factors affecting its formulation, the major deep-sea shipping issues, and the specific assistance measures. The next chapter evaluates the appropriateness of these, and other proposed assistance measures.

VII A CANADIAN PLAN OF ACTION

This chapter addresses the central question of this thesis, "What assistance measures, if any, would be appropriate for encouraging the development of a Canadian deep-sea fleet"?

The word "appropriate", used in the question, was chosen after great deliberation because it could be defined in such a manner so as to encompass all the desired characteristics that an assistance measure should possess. Thus the word "appropriate", as used in this thesis, transcends its dictionary meaning, "suitable for, or belonging to the person, circumstance or place."[1] An appropriate assistance measure is seen as one that is adequate, economically efficient, equitable, acceptable, adaptable and reliable.[2] The meaning of each of these characteristics is discussed below. An assistance measure fulfilling the majority of these characteristics is held to be a more appropriate assistance measure than one that fulfills just a few.

Adequate:

Adequate means being "equal to what is required."[3] An adequate shipping assistance measure is one that has the power to achieve the desired objective, in this case, the development of a Canadian deep-sea fleet. An assistance measure must be adequate in two respects. First, it must be adequate in relation to assistance measures that are offered in other countries and second, it must be adequate in relation to incentives offered to other Canadian industries. If an assistance measure is inadequate in either respect, then it will not be equal to the task required; the establishment of a Canadian deep-sea fleet.

Economically Efficient:

Economically efficient has been defined as the "absence of waste, in terms of satisfaction people derive from consuming goods and services."[4] Economic efficiency is achieved when all resources are employed in their most productive use.

Equitable:

Any assistance measure that is introduced should be equitable in two respects. First, it should be fair and non-discriminatory towards individual Canadian operators engaged in international shipping. Second, it should also be fair and reasonable in reference to assistance measures offered to other sectors in the Canadian economy. For example, overly generous assistance to international shipping operators may be considered inequitable (and probably economically inefficient also) if similar assistance is not extended to coastal shipping operators, or international air carriers.

Acceptable:

Finding an assistance measure that would be acceptable to all the groups involved in Canadian shipping is a near impossible task. It is possible, however, to identify measures that are acceptable to many of these parties, and others that are not acceptable to any group. Acceptability is a very desirable characteristic for an assistance measure to possess since even the most economically efficient programs may be ineffective if not accepted by the parties involved. Thus the acceptability of a particular measure depends upon how and if benefits can be distributed in a manner such as to to make all parties better off.

Adaptable:

Some assistance measures are more adaptable and flexible than others. In Chapter II, some of the major trends and developments occurring in international shipping were examined. An appropriate assistance measure should have the ability to adapt easily to these changes and new circumstances.

To be able to discuss which assistance measures might be appropriate for developing a Canadian deep-sea fleet, one must have a basic understanding of the information presented in the previous chapters. For example, it would be impossible to determine the adequacy of proposed assistance measures without knowing something about the assistance measures that exist in other countries (Chapter V). A discussion of the economic efficiency and reliability of the various measures demands an understanding of the economic implications associated with each (Chapter IV). Similarily, the equity and acceptableness of the measures would be difficult to ascertain without an appreciation of how the shipping industry operates in Canada, or who are the major parties involved (Chapter III). Adaptability is founded on the principals of change as portrayed in Chapters II and III in the sections dealing with trends and developments.

The analysis and evaluation of the various assistance measures is conducted using the, by now familar, three group classification, financial assistance in the operating phase, financial assistance in the capital phase and nonfiscal assistance measures.

1. FINANCIAL ASSISTANCE IN THE OPERATING PHASE

As was done in previous chapters, financial assistance in the operating phase will be subdivided into, direct operating subsidies, government-provided facilities, special subsidies, and tax-incentive subsidies.

A. Operating Subsidies

Judging from the example of the American subsidy program, a similarily designed Canadian program would probably be successful in attracting more ships to Canadian registry. It is doubtful that American operators of U.S.-registered vessels could be competitive with foreign operators, if the operating subsidy were ever withdrawn.[5] To remain competitive, American operators would be forced to forsake American registry in favour of the cheaper operating costs associated with foreign registry.

A Canadian program, if ever introduced, would be designed to equate the higher costs of operating Canadian-registered vessels, with the lower costs experienced under foreign registry. The major subsidizable costs would probably be crew salaries and wages, repairs and maintenance and insurance costs.[6] Of these three the largest differential would probably be in the area of crew salaries and wages. In the U.S. program, the wage and salary differential accounted for almost eighty-five percent of the total operating subsidy payments made.[7] The reason for this alarmingly high percentage was that American wage rates were three times higher than foreign wages, and that wages constituted approximately thirty percent of total voyage costs.

Data collected from Canadian sources would tend to suggest that Canadian crew costs account for a similar percentage of total voyage costs. Statistics, supplied by some of the operators interviewed, reveal that manning costs comprised twenty-five to thirty percent of total operating expenses or fourteen percent of total operating revenue.[8]

The Alcan Study , done in 1976, revealed that Canadian manning costs were sixty-five to seventy-five percent higher than European manning costs (see Appendix 8). Since the time of that study, the Canadian dollar has depreciated in value by approximately fifteen percent which has tended to narrow the gap between Canadian and foreign manning costs. Today, Canadian costs are probably forty to fifty percent higher than foreign manning costs.

If the Canadian government were to subsidize Canadian operators for only the difference in crew salaries and wages, then these operators would experience approximately a 7.6 percent decrease in their operating costs and a 4.8 percent increase in their operating margin (after tax benefits of 2.6% - see Appendix 10). This represents a fairly substantial after tax increase in profitability and would undoubtedly encourage more Canadian operators to become involved in deep-sea activities.

The cost to the federal government of such a program would inherently depend on the number of ships qualifying for the operating subsidy. For the purpose of analysis, it is assumed that the ships that would qualify for the operating subsidy are the same ones that were identified in the Alcan Study as being commercially viable under option 3 at the ten percent cutoff

rate.[9] The routes covered by this fleet and the vessel requirements to service these routes are presented in Appendix 11. By hypothesizing the number of ships qualifying for the operating subsidy, and knowing the difference in Canadian versus foreign manning cost, it is possible to estimate the cost of a Canadian differential operating subsidy program. It is estimated that such a program would cost the federal government a total of $5.5 million annually, with costs escalating to $7.7 million five years hence and to $9.9 million by 1990 (see Appendix 12).

Appendix 13 shows another way of calculating the estimated costs of a Canadian operating subsidy program. Saguenay Shipping Ltd., in a brief presented to the federal government, estimated that Canadian annual wage costs were $250,000 to $350,000 higher per vessel than foreign vessels. If such figures are used then the estimated annual cost of the program would be $4.4-6.2 million in 1979, $6.2-8.6 million in 1985, and $7.9-11.1 million in 1985 which tends to support the cost figures obtained above.

The social costs of an operating subsidy program are not necessarily represented by the cost of the program to the federal government. In fact, the subsidies paid by the government are not really, in the direct sense, a cost to society at all since the government's loss is presumably the shipowners' gain. However, to finance the operating subsidy program, the government may either have to increase taxes or eliminate other programs. Both courses of action must be considered when calculating the social costs of an operating subsidy program. The true social cost of an operating subsidy program is the value of the inputs that are committed to

shipping that might have been used elsewhere. This is the concept that economists refer to as opportunity costs. If resources would have otherwise remained idle then the social cost of using them in shipping operations is in fact zero.[10] Thus, if an operating subsidy program generates jobs for people who might have otherwise been unemployed then the cost to society of employing these individuals in shipping activities is zero.

Therefore, it becomes important to estimate the employment associated with an expanded Canadian deep-sea fleet. Appendix 14 shows the total number of crew and officers that would be required to man the fleet identified earlier in Appendix 11. If we assume that ten percent of the manpower would otherwise have been unemployed then the annual cost of the program decreases by approximately one-half to one million dollars (see Appendix 15). Similar cost adjustment would also have to be made for other inputs used in the production of shipping services (i.e., capital, equipment). Another social cost that must also be considered is the costs associated with establishing and administering such a program.

Benefits of an operating subsidy program are represented by the increase in revenues experienced by Canadian operators and by any other intangible benefits that might occur, such as increases in reliability of service, increases in national security, and pride and prestige.

Operating subsidies are an inappropriate form of shipping assistance in the Canadian situation because they do not encourage ship operators to use resources in an economically

efficient manner. Operators tend to use more of the subsidizable resources than they would normally use. For example, in the U.S. of every $1.00 in wages paid aboard American subsidized vessels, $0.67 is paid by the government.[11] The distortion of costs, caused by the introduction of an operating subsidy program, encourages operators to use more labour resources than is optimal from a societal perspective.

Operating subsidies are also not an appropriate form of assistance because they are not acceptable to many of the groups involved in Canadian shipping. Ship operators, perhaps fearing a public backlash, simply have not asked for operating subsidies at all. The government does not want to implement such a program, because of the costs involved, the amount of data that needs to be collected, and the strong objections that would be voiced by Canadian shippers opposed to such a program. Also an operating subsidy program does not guarantee that either the average freight rate will decline or that shipped tonnage will increase.

Finally, operating subsidies also fail the adaptability test. Once an operating subsidy is in place, its becomes very difficult to remove at a future date. A good example of this is the U.S. program which has now been in effect for fifty-four years and which shows no signs of being terminated.

B. Government-provided Facilities

We have seen that many national governments assist their shipping industries by providing funds for shipping and that Canada is no exception. For the fiscal year 1979-80 the Research

Branch of the Canadian Transport Commission has been allocated $2.5 million, a percentage of which will be used to finance marine-related studies.[12]

Increasing research expenditures would not attract many ships, if any , to Canadian registry. This is because shipowners prefer tangible benefits that can be counted in dollars and cents. Benefits associated with increased research expenditures are difficult tc identify, nearly impossible to value, and accrue over an indeterminant time horizon. Thus, it is impossible to identify an optimal level for research and development funding. In this sense research funding is also a somewhat unreliable form of assistance which many or may not benefit ship operators.

Some areas of shipping research appear that they might be more beneficial to society than others. I am referring here, to areas such as Arctic shipping, offshore drilling technology, and ice-breaking. In these areas Canada seems to hold a competitive advantage and increasing research and development funding could result in substantial benefits to Canadian society such as sovereignty, security, and prestige.

C. Special Subsidies

We have already seen that vessels imported into Canada to be used exclusively in international trade, are admitted free of any customs duties. If an imported vessel is not to be exclusively in international trade, then customs duties, amounting tc 25 percent of its appraised Canadian value, must be paid. trade. On imported vessels that will not be used

exclusively in international trade, customs duties amounting to twenty-five percent of the vessel's appraised Canadian value. How much do operators of international trade vessels benefit from this customs duty exemption?

Calculations done in Appendix 17 show that, for a shipowner purchasing a 28,000 dwt bulk-carrier, the benefit is quite substantial, amounting to about $3 million (if a 20 percent construction subsidy is assumed). In the case of a nine percent construction subsidy the benefits are even larger, totalling almost $6 million. The exclusion from customs duties, results in Canadian owners purchasing ships abroad which from a Canadian standpoint is probably more economically efficient than having them purchase vessels from domestic sources. With Canadian prices (before construction subsidy is considered) being approximately fifty percent higher,[13] it makes sense to purchase vessels abroad, both from an individual and societal perspective. Why should $27.5 million in Canadian resources be committed to building a ship domestically if the same ship can be purchased from foreign yards for $19 million?[14] Granted, building the ship in Canada will generate employment, but how many of the people employed in shipbuilding activities would have otherwise been unemployed? Unless the benefits of the increased employment, generalted by building these ships in Canada, total more than $8.5 million then it makes sense from an economic efficiency standpoint to have the ship built abroad.

Currently, materials imported into Canada, that are to be used in the building of ships to be exported, are also exempt from customs duties. If customs duties were eliminated on all

shipbuilding materials, regardless of whether the ship is to be exported, would this benefit shipowners? No doubt such measures would benefit shipbuilders since it would enable them to purchase their material from the cheapest source, whether Canadian or foreign.

Presumably, the lower costs would be reflected in lower shipbuilding prices and the cost difference between building a ship here and building abroad would narrow. The degree to which shipbuilding prices fall would be dependent upon market conditions, such as the portion of shipbuilding material purchased here and abroad, and the elasticities of supply and demand for new ships. Benefits to owners of deep-sea vessels will result if, after the blanket exemption of shipbuilding material from customs duties, they are able to purchase ships at lower prices than before. Whether this would occur is uncertain, thus this type of assistance measure is not a reliable form of assistance with which to aid Canadian shipowners.

Many Canadian operators engaged in domestic shipping have complained that the exemption from import duties should be extended to include all imported ships, whether they are to be used in international or domestic trade. It should be remembered, however, that domestic ship operators enjoy a privilege that is not afforded to Canadian operators engaged in international shipping, that of a protected market. Domestic operators enjoy the protection of cabotage restrictions, that limit and in some cases excludes foreign competition. Thus the exemption of only ships to be used exclusively in international trade, is not inequitable in this sense, it merely enables

Canadian to engage in services from which they might otherwise be excluded.

D. TAX INCENTIVES

There are four general areas in the Canadian tax law system that could be modified for the purpose of encouraging the development of a Canadian deep-sea fleet. These areas are, the investment tax credit (ITC), capital cost allowances (CCA), tax rates applied to taxable income, and replacement or reserve funds.

The benefit to shipowners and operators of a tax incentive measure is represented by the present value of taxes that would otherwise have been payable, if not for the existence of that particular tax incentive. Of course, any benefit accruing to shipowners and operators represents a cost to the government in the form of taxes foregone. The cost to the federal government of the four tax subsidy areas is examined in the subsequent sections.

When examining the economic efficiency of tax subsidy programs, taxes saved or taxes foregone become almost irrelevant to the discussion except to the extent that they cause distortions in other sectors of the economy. This is because taxes represent a transfer of resources from one sector in society (ship operators) to another group (government) and as such, they do not result in any change in the total wealth of Canadian society.

This is not to infer that tax subsidies have no effect whatsoever on the welfare of society. The decrease or

elimination of taxes otherwise payable, enables Canadian operators to compete in more markets, thus benefits accrue to Canadians in the form of increased shipping revenues. What then are the corresponding social costs? To increase shipping services , more Canadian resources will have to be committed to shipping. Therefore, the social costs are equal to the value or opportunity cost of these resources in their best possible alternative use. If resources, that might have otherwise been unemployed , are used to produce shipping services, then the cost of these resources is zero.

Sometimes the benefits associated with tax incentives may not be measurable. In these cases the benefits are left as intangibles and the nature, rather than the value, of the benefit is discussed. All social benefits and costs are to be valued at their pre-tax value, and discounted by an appropriate discount rate. For the purpose of analysis, a ten percent social discount rate is assumed.[15]

The adequacy of the various tax assistance measures will, naturally, vary from measure to measure and is also discussed in subsequent sections. Tax subsidies, are also perhaps the most adaptable form of assistance, since the infrastructure required to administered them is already in place. Finally, tax subsidies are a fairly reliable form of assistance in that they are a direct benefit to shipowners and operators, provided that taxes are otherwise payable. A brief submitted to the federal government by the Council of Marine Carriers is quoted as saying the "Canadian companies achieve a pre-tax profit rate of return on sales of only two to three percent."[16] Statistics Canada data

suggests a somewhat higher rate of return, about eight percent.[17] For the purpose of this thesis an average return on sales of five percent will be used.

Investment Tax Credit

Shipping is a rather captial intensive industry and it would seem that an investment tax credit would be an appropriate assistance measure, one capable of attracting more ships to Canadian registry. However, upon closer inspection the benefits of an investment tax credit may not be as bountiful as they might initially appear. Tax credits are applied against taxes otherwise payable. However, if the company that qualifies for the tax credit, is not earning sufficient income then the tax credit deduction can not be used and must be carried over to subsequent years when taxes might otherwise be payable. If shipping pre-tax profits are only two to three percent on total sales as suggested by the Council of Marine Carriers' report, then it is questionable as to when such tax credits could be used.

How much tax revenue would the federal government forego if a five percent investment tax credit on new ships were introduced. That would depend on the number of ships that would qualify for such a credit and when such credits could be claimed.

Using the data collect by Mr. K.C. Griffin, Marketing Director Overseas Trade & Petrochemicals with CP Rail, it is estimated that twelve ships (valued at $184 million) would have qualified for the tax credit deduction in 1977 (see appendix 16 for a list of the ships that would have qualified for such a tax

credit). For the year 1978, seven ships would have qualified (value $125 million) and in 1979 seven ships (value $95 million). The following analysis assumes that only newly-constructed Canadian-owned ships engaged in international trade would qualify for the deduction. Based on such an assumption it is estimated that the eligible investment tax credits for the years 1977, 1978, and 1979, would have been $9.2 million, $6.75 million, and $4.75 million respectively (see Appendix 16). It must be emphasized that the investment tax credit could only be claimed against Canadian taxes otherwise payable. Thus, one advantage of an investment tax credit assistance program is that the benefits accrue primarily to Canadian-resident individuals and corporations. Unclaimed credits could, naturally, be carried over and claimed in subsequent years.

The cost to the federal government of an investment tax credit program for new ships would be marginally lower than the figures quoted above since claiming an investment tax credit decreases the capital cost base of the newly acquired vessel. This means that capital cost allowance claimed in subsequent years will be smaller than they would have been if no tax credit had been claimed. Thus the cost of an investment tax credit program may have ranged from $3 million to $8 million depending on when such credits could have been claimed. Thus, an investment tax credit program is only a reliable form of assistance if taxes are otherwise payable.

The social benefits and costs of a tax credit program are similar to those discussed previously. Taxes paid or foregone represent neither a cost or benefit to society, except to the

extent that they cause distortions in other sectors of the economy. The true social cost of such a program is equal to the increase in revenues less the corresponding increase in costs (adjusted to reflect opportunity costs) associated with the introduction of the program. These increases in revenues and costs should be discounted using the social discount rate of ten percent.

Capital Cost Allowances

Chapter V examined the depreciation tax allowances that exist in other maritime nations. In Canada, we saw that two CCA rates exist, 33.3 percent straight-line on newly constructed vessels built and registered in Canada, and 15 percent for all other types of vessels. This dual rate system was obviously intended to encourage shipowners to build and register ships here in Canada rather than abroad. A shipowner who operates a $20 million vessel that qualifies for the 33.3 percent rate will experience a present value cash flow tax saving of $2.124 million compared to an operator with a similar vessel that must be depreciated at the fifteen percent rate (assuming a 12 percent cost of captial, a vessel life of fifteen years, and a tax rate of fifty percent - see Appendices 18 and 19). The present cash flow savings associated with Canadian-built and registered vessel may partially offset the higher cost of constructing ships in Canadian yards (estimated to be about $3.45 million on a 28,000 dwt bulk carrier[18]), however, it is not large enough to offset the higher annual operating costs associated with Canadian registry.[19]

The Canadian fifteen percent declining CCA rate is

approximately equal to a ten percent rate under the assumptions listed above. Thus the Canadian system is approximately equal to the rates allowed in Italy. The Belgium and French formulae systems are equivalent to about a fifteen straight line rate. Appendix 19 shows the cash flow savings that would accrue to Canadian percent shipowners if the CCA rates were increased to levels that exist in some of these other countries.

Changing from a fifteen percent declining balance method to a fifteen percent straight-line method would result in present value cash flow savings of $886,000 per $20 million vessel. Changing to a twenty percent straight-line method, such as found in Sweden, would result in a $1.4 million saving. If the CCA rate was changed from a fifteen percent declining rate to a fifty percent straight-line rate then a cash flow saving of $2.5 million would accrue to shipowners.

The CCA rate allowed on Canadian-built and registered new ships is fairly generous in comparison to rates allowed in other countries. If the rate for this type of vessel were increased from 33.3 percent to 50 percent then a cash flow saving of $397,000 would result. If increased still further to a 100 percent rate, such as found in Britain, then an additional benefit of $327,000 would accrue to shipowners.

Another incentive for encouraging the development of a deep-sea fleet is to allow special or advance depreciation. For example, suppose Canadian tax authorities were to introduce legislation which would allow thirty percent of a vessel's cost to be written off between the contract and delivery date (see Appendix 20). Under similar assumptions as before (and assuming

a one year gap between date of contract and date of delivery) cash flow benefits amounting to $1.17 million[20] would accrue to shipowners, an an amount comparable to changing from a fifteen percent to twenty-five percent declining rate.

The benefits accruing to shipowners could also be substantial if special depreciation were introduced. If a special depreciation system similar to the Italian system were introduced[21], cash benefits of approximately $1.25 million would accrue to Canadian shipowners on each vessel (see Appendix 20). The introduction of a special or advance depreciation system would certainly be a start at narrowing the gap that exists between Canadian shipping costs and foreign shipping costs.

The overall cost to the government is once again dependent on the number of ships involved. Increasing CCA deductions might be a more effective assistance measure than tax credits since CCA can be deducted from taxable income and can be used to create a business loss for tax purposes. This loss can then be carried back one year or forward five years and applied against income in any of those years. Thus the flexibility emanating from a CCA assistance program makes it appear to be a fairly attractive assistance measure, one that would be acceptable to both government and private industry.

Reduction in Income Tax Rates

In chapter V, we saw that in several coutries income earned from the operation of vessels engaged in international trade is exempt from income taxes.[22] In Canada, such a provision does not exist and Canadian earnings from international shipping are taxed in a similar manner as any other Canadian source income.

How serious a disadvantage does this pose for Canadian operators trying to compete in international markets? And would the removal or reduction in income tax rates be an appropriate form of assistance to implement?

It is interesting to notice that none of the briefs submitted for publication in the federal government's Measures to Encourage the Gradual Development of a Canadian Deep-Sea Fleet - Industry Submissions requests the elimination or reduction of the present tax rate. It seems that shipowners would rather have assistance measures that could be used to reduce their taxable income rather than a reduction in the rate that is applied. The reason for this apparent preference would seem to stem from the belief of shipowners, that the government would be more willing to grant income-reducing incentives than it would be to reduce rates. This is probably a realistic attitude to take, since decreasing the tax rate applied to international shipping income might be a dangerous precedent, one which would be viewed by other industry officials as favouritism.

There is also a question of how reliable a reduction in tax rates might be in encouraging the develoment of a Canadian deep-sea fleet. Such an assistance measure would only be effective if taxable earnings exist. Reducing tax rates may be an effective incentive measure during periods of excess demand in the shipping markets, but they would likely have a negligible effect during periods of excess supply. Shipping profits tend to display cyclical patterns and so it may be difficut to determine when and if rate reductions should be applied. Because of the

uncertainty associated with shipping profits a reduction in tax rates on international shipping income would probably not be a particularily reliable form of assistance.

Suppose that the government did agree to totally exempt from income tax, shipping earnings on international shipping operations and that this benefit was extended to Canadian domiciled ship operators. What would such a shipping assistance program cost the government? Estimates are that the federal government under these conditions would forego approximately $6.74 million (see Appendix 21). If the tax exemption were restricted to Canadian-owned and registered vessels then the program might cost close to $4.5 million (assuming average revenue per ship of $2.5 million and a 5 percent return on sales).[23]

Reserve Funds

Reserve funds enable shipowners to defer the payment of taxes otherwise payable, on the condition that certain requirements are met. These requirements vary from country to country but they usually specify who may create such funds, what deposits may be made to the fund, and under what conditions the funds can be withdrawn.

If a reserve fund program similar to the current American program were introduced here in Canada, then Canadian operators would probably be permitted to make the following deposits to the reserve; shipping profits earned from the operation of vessels in international trade, taxable capital gains experienced from the sale of ships, CCA deductions, and interest accruing on the reserve itself. Earnings, taxable capital gains

and accrued interest deposited into the fund would decrease the shipowner's immediate tax liability. However, the capital cost base of the newly acquired vessel would be reduced to the extent that these funds were used to purchase the new vessel. This will result in smaller CCA deductions in subsequent years. The deposit of CCA deductions into the reserve would not effect the immediate tax liability of the shipowner since these amounts are normally deducted from taxable income anyhow. Thus, they would not alter the capital cost base of the new asset purchased with such funds. An example may help clarify how such a reserve program would function.

Suppose that a shipowner made $3 million in international shipping earnings, that his CCA allowances totalled $1 million and that a $1.5 million capital gain had resulted from the sale of a ship. If no reserve fund program existed, the owner's tax liability would be $1,265,000[24] assuming a 46% tax rate. With a reserve fund program, similar to the one described above, the operator could deposit $600,000 of earnings into the reserve (assuming that a maximum of twenty percent total earnings can be deposited into the fund). The operator could also deposit $750,000 in capital gains and $1 million in CCA deductions to the reserve. Accordingly, the owner's tax liability would be reduced to $644,000[25] representing an immediate tax saving of $621,000. However, when withdrawls are made from the fund to purchase a new ship the CCA deductions made in subsequent years will be smaller because the capital cost base of the new vessel will be $621,000 less than it would otherwise have been. By continuously reinvesting shipping earnings it is possible for

the shipowner to avoid paying taxes entirely through the use of the reserve fund.

How much would such a program cost the federal government? Based on studies done on the American reserve program, and allowing for the fact that the Canadian registered fleet is only one sixteenth the size of the U.S. registered fleet, a Canadian reserve fund program might cost in the neighbourhood of $2 million to $3 million annually (see Appendix 22).

Other Tax Subsidies

In Canada, the filing of consolidated tax returns is not permitted. If it were allowed, then international shipping losses could be written-off against other forms of income thus mitigating the payment of income taxes. This is unlikely to occur, however, since it would represent a rather abrupt change in Canadian tax policy.

Another contentious Canadian tax law area, in respect to shipping, is the applicability of withholding taxes to charter payments made to foreigners. Supposedly, a withholding tax of fifteen percent is to be withheld from charter payments made to foreigners. In practice, however, the government has been hesitant to enforce the tax. If the withholding tax provisions were enforced then a couple of things might happen. First, foreigners might increase charter prices so that they could still earn the same after tax profit as before. Second, Canadian shipping companies might establish "off-shore" subsidiaries to conduct their charter business. In either case, the application of the withholding tax does not result in any net benefits to Canadian society. Furthermore, the current confusion that exists

concerning the application of the withholding tax does not make for a situation that is conducive for stable charter agreements.

Finally, in 1976, Regulations 1100(15) to 1100(20) of the Income Tax Act were added which restricted the amount of leasing losses that could be claimed. These Regulations make it unattractive for banks, trust companies and other financial institutions to become involved in ship leasing arrangements. Before the introduction of these provisions it was possible for banks and commercial enterprises to offset leasing losses (created by the large CCA deductions permitted during the first years) against other income thus decreasing their taxes payable. Some of these savings would would be passed on in the form of lower interest rates to the operators who are leasing the vessels from the bank. Leasing is a form of financing that was popular in many industries, and it is unlikely that shipping would receive a special exemption from these provisions.

2. FINANCIAL ASSISTANCE IN THE CAPITAL PHASE

Chapter V examined some of the capital phase assistance measures that exist in the various nations throughout the world. In some of these nations such programs have been very successful in establishing and promoting the national fleets of those countries. Included among the measures are loan guarantees, direct loans, construction subsidies and government-ownership.

A. Loan Guarantees

Extensive loan guarantee programs for shipping exist in

most of the major maritime nations, including West Germany, Greece, Norway, the United Kingdom and the United States. With a loan guarantee program, the government, in the event of default by the shipowner, guarantees payment of any principal and interest on the obligation. Such programs are advantageous to shipowners because it enables them to secure better credit terms on their loans. These may include lower interest rates, longer repayment periods, or larger loans than might otherwise be possible without the guarantee.

Analysis done in the Alcan Study indicated that a change in loan terms could, depending on the precise terms, make the Canadian-flag options more profitable than the foreign-flag options,"Canadian competitiveness is highly sensitive to financing cost."[26] Appendix 23 shows that benefits accruing to a shipowner from a decrease in borrowing costs from 13 percent to 12 percent could amount to $3.1 million on a $20 million loan.

Measuring the costs and benefits to society of a loan guarantee program is a little more difficult. Shipowners will benefit since they will be able to obtain loans with more favourable repayment terms, which should enable them to compete in more markets. From these benefits to shipowners must be subtracted the premium payments made to the government (usually one-half to one percent of the total loan value) by shipowners to secure the loan guarantee. The banks may or may not benefit from a loan guarantee program. They will be receiving smaller repayment amounts from shipowners but the certainty of the repayments is increased due to the guarantee from the government. Finally, the government receives benefits in the

form of premium payments received from the shipowners, but then must pay out some of these benefits to cover defaulted loan repaymants. Thus the cost or benefit to the government of a loan guarantee program will depend on the premium rate charged to owners for the guarantee privilege and the stringency exercised by the government in granting the guarantees.

In the case of foreign borrowing, the analysis is slightly different. Shipowners must still pay premiums to the government which neither represents a cost or benefit to society. As a result of the government guarantee shipowners are able to secure lower interest rates from foreign lending institutions. This represents a gain or benefit to society. However, if Canadian operators default on their payments then the Canadian government would be obligated to pay the defaulted amounts. The payment by the government to foreign lending institutions thus represents a social cost to Canada. Whether a net benefit situation arises will depend upon the number of payments the government must make on defaulted loans and the savings experienced by the shipowners through lower interest rates.

Suppose that the Canadian government decided to guarantee loans made to Canadian shipowners by foreign institutions and that because of these guarantees shipowners are now able to secure a lower rate of interest on their foreign borrowings (say 12 percent instead of 13 percent). Calculations done in Appendix 23 reveal that net benefits accruing to shipowners might total almost $1 million per vessel. Similar net benefits to Canadians might also result if owners could obtain longer repayment periods or larger loans. Another advantage of loan guarantee

programs is that they retain incentive for shipowners to manage their operations efficiently.[27]

Loan guarantee programs would probably be one of the more acceptable assistance measures from a governmental viewpoint. This is because loan guarantee programs do no involve any direct outlays of government funds, nor do they involve the foregoing of tax revenues. These programs are also easy to administer and easily understood by operators. From a shipowner's perspective a loan guarantee program takes fairly high priority and is an attractive form of assistance since it keeps government involvement in shipping to a minimum.

The adaptability of loan guarantee programs is ensured by the fact that rates, terms and conditions can be changed to meet the conditions prevailing at the time. Also guarantee programs are reliable,in that they directly benefit the group that they were intended to benefit, the shipowners.

E. Government Loans

In the Hedlin-Menzies study dated 1970, the following conclusions were reached concerning the adequacy of a government loan program to aid shipowners;

> ... a programme of government loans would by itself not provide an adequate amount of assistance for Canadian shipowners (unless subsidized interest rates were provided to shipowners that were significantly below six per cent). Government loans utilized in co-ordination with another form of assistance (i.e., moderate increase in capital cost allowance rates), however, could generate adequate assistance for many of the vessels examined.[28]

Although general conditions may have changed in shipping and

financial markets, there is no reason to doubt the validity of this statement when applied to today's situation.

Shipowners have listed the implementation of a government loan program as one of their top priorities (along with tax incentives). Shipowners visualize a government loan agency that would provide financing to Canadian operators at rates and terms similar to those extended by the Export Development Corporation. Such loans would be limited to seventy percent of the vessel's cost, would not exceed seven years, nor bear a rate of interest lower than eight percent.[29] On the government's part, there seems to be general reluctance to establish such a program. The government would prefer not to become involved in ship financing leaving the responsibility to private Canadian financial institutions.

If the government decided to implement a loan program for shipowners, the cost of such a program would, once again, depend on a couple of factors. These factors would include how stringent the government decides to be in granting credit, the rates and terms at which these loans are made, and the relative level of interest rates elsewhere in the world.

A discussion concerning the economic efficiency of direct government loan programs seems to evolves about the central issue of which social discount rate should be used. Take for example a statement taken from the Hedlin-Menzies study;

> ... assuming that interest charged for foreign financing is less than the opportunity cost of Canadian capital (the national discount rate), the Canadian economy would clearly be penalized by utilizing relatively more costly Canadian capital resources.[30]

A numerical example may help to elucidate this idea. Suppose a ship costing $25 million is to be built and financed with an eight year loan. The money can be borrowed abroad at nine percent or here in Canada at eleven percent. If the loan is financed in Canada then the Canadian economy has, in effect, immediately committed $25 million in capital resources to the vessel's construction (a social cost). The benefits associated with this investment is the value of the services it provides (say $5 million per annum). If the money is borrowed abroad, costs to the Canadian economy occur when loan repayments are made to these foreign interests. Benefits are, once again, represented by the value of the services provided by the new ship ($5 million per annum). Appendix 24 shows that under such assumptions, the net benefits of borrowing abroad are $0.9 million if a ten percent social rate of discount is applied. However, if the social discount rate is lowered to eight percent then borrowing in Canada becomes more economically efficient from society's perspective. Therefore, the determination of the net benefits to Canadian society depends upon the relationship between the Canadian social discount rate and the foreign lending rate.

The introduction of a Canadian government loan program can therefore result in either negative or positve net benefits as shown in the following set of examples. In case A, the foreign lending rate is eleven percent, the Canadian is twelve percent and the Canadian social discount rate is ten percent. In such a set of circumstances, shipowners will seek financing abroad since it is cheaper to them. However, because the social

discount rate is less than the foreign borrowing rate, it would be more advantageous from society's view if shipowners borrowed funds here in Canada. If the government implemented a loan program so that shipowners could now borrow funds in Canada at, say, 10.5 percent a net benefit would result as Canadian shipowners started taking out Canadian rather that foreign loans. In case E we assume the same Canadian and foreign borrowing rates, only this time the Canadian social discount rate is assumed to be twelve percent. Under this set of assumptions shipowners would, as before, borrow abroad which is in agreement with society's desires since the foreign cost of borrowing is less than the Canadian social discount rate. If a government loan program were introduced, and loans were issued at a 10.5 percent rate of interest then shipowners would seek to borrow in Canada which would be contrary to the social desire. Hence, such a program would generate negative net benefits to the Canadian economy.

Loan programs would be a reliable form of assistance to shipowners since they directly aid this group by decreasing the cost of capital. Loan programs, probably lack the desired adaptability characteristic, since once such a program is established it would be very difficult politically to terminate. Establishing a loan program to assist shipowners would involve setting up the administrative structure necessary to run such a program, which in itself would represent a social cost. Finally, it seems redundant that in a country like Canada, that has such a well-established banking institution, the government should also have to become involved in the lending function.

C. Construction Subsidies

It is a generally accepted principle that construction subsidies are more an aid to shipbuilders than they are to ship purchasers. Gerald Jantscher in his book Bread Upon the Waters comments,

> It [a construction differential subsidy] is in fact a subsidy to U.S. shipbuilders, despite the purely technical feature that until 1970 it was given upon application by the purchaser of the vessel - not the builder. Buyers do not benefit from it, because the subsidy only lowers the price of a new vessel to what the buyer would pay if he ordered the vessel from a foreign yard.[31]

In Canada, we do not have a construction differential subsidy but rather a straight-rate form of construction assistance. Such subsidies are calculated as a percentage of the vessel's price and paid to Canadian shipbuilders according to the Canadian Shipbuilding Industry Assistance Program. The construction subsidies are only a benefit to Canadian shipowners if the subsidy paid to shipbuilders is passed on to shipowners in the form of lower vessel prices. To be of any benefit to shipowners the subsidy must have the effect of lowering the effective Canadian price below the price that a shipowner might pay abroad for the construction of a similar ship.

The Alcan study compared shipbuilding prices in Canada with those of other nations and found that prices quoted by Canadian yards (after considering the subsidy) were twenty to twenty-five percent higher than most European yards. The discrepancy between Canadian and Japanese yards was even larger, ranging from sixty to 110 percent higher.[32] With such a substantial price

difference it is little wonder that two-thirds of the Canadian owned deep-sea tonnage in 1978 was of Japanese construction. To be competitive with Japanes yards, the Canadian government would have to offer construction subsidies equal to forty-five to sixty percent of the equivalent Canadian cost which might increase the cost of the present program to $150 to $200 million a year. In view of the fact that the federal government has just recently allowed construction subsidies to fall from twenty percent to nine percent, it is doubtful that Canadian shipowners would ever experience substantial decreases in vessel prices.

Even if a large enough construction subsidy rate were introduced to allow Canadian yards to be competitive with foreign yards, it is questionable whether the benefits would ever be passed on to shipowners. The benefits accruing to shipowners from a large construction subsidy would depend on the elasticities of demand and supply (see discussion in Chapter IV). And so, in addition to being inadequate and inefficient, construction subsidies are also an unreliable form of shipping assistance measure.

D. Government Ownership

While governments in the Eastern Block countries and the South American countries are directly involved in the ownership and operations of ships it is highly unlikely that the Canadian government would consider similar action. Since the end of World War II the Canadian government has elected to abstain from interference in international shipping matters. Today, the only examples of government ownership in Canadian shipping are six

vessels that are on charter to private ferry corporations, and a controlling interest in the M.V. Arctic, the experimental ice-breaking bulk-carrier. Although it may become more active in Arctic shipping technology in the future, the government has expressed no intention, for the time being, of becoming shareholder in any shipping companies. Thus government-ownership assistance is automatically ruled out as being unacceptable to the government.

3. NONFISCAL ASSISTANCE

Currently, Canada makes no use of nonfiscal assistance measures (other than cabotage restrictions) to promote its national flag fleet. However, in its most recent shipping policy paper, A Shipping Policy for Canada the government stated that it,

> ... intends to assess the possibilities for Canadian flag participation in the shipment from Canada of aid and certain commercial cargoes. With respect to Arctic shipping, the government intends that, as a condition of approval to export unprocessed or partially processed resources, Canadian registered vessels must be used if they are available at reasonable cost.[33]

In short, the government intends to examine the advantages and disadvantages of cargo preference measures for foreign and Arctic cargoes. If such measures were ever implemented they would probably be an adequate form of assistance for vessels operating in those areas.

However, other than the adequacy criteria, nonfiscal measures fail to satisfy any of the remaining criteria, most notably those of economic efficiency and acceptability. If nonfiscal shipping assistance measures were ever introduced they

would have the effect of replacing cheaper foreign-flag shipping services with more expensive Canadian-flag services. The social costs to the Canadian economy would thus be the difference in the shipping costs of the Canadian versus foreign flag ships. Today, Canadian-flag shipping costs have been estimated to be twenty to thirty percent higher than foreign costs. Although no immediate cash outlays would be required with nonfiscal measures the indirect costs of higher transportation costs, hence higher prices could not be avoided. Further social costs might be incurred in the form of time delays, if shippers must wait until a Canadian ship is available to carry the preference cargo.

Nonfiscal assistance measures would not be acceptable to several key shipping interest groups. The most vociferous opposition to the establishement of cargo preference or flag discrimination measures would undoubtedly come from Canadian shippers. Groups that depend on shipping transportation to get their goods to market will naturally oppose any proposed assistance measures that might result in an increase in their transportation costs. Thus groups such as the Canadian Export Association, The Canadian Manufacturers' Association and the Council of Forest Industries of B.C. vehemently oppose cargo preference or flag discrimination practices in any form.

Another group, to which nonfiscal assistance measures would be unacceptable, is foreign governments. Although the federal government should always be guided by the desires of the Canadian public it must nevertheless consider the fact that foreign governments may take retaliatory action, thus affecting Canadian interests.

Shipowners, probably realizing that such demands would never be met, have refrained from requesting nonfiscal assistance measures. Thus there is really no group in Canada that advocates cargo preference or flag discrimination measures to encourage the development of a Canadian deep-sea fleet.

Nonfiscal measures also fail to meet the adaptability criteria. By setting up a protected market for national-flag vessels the government upsets the competitive markets and there is a corresponding reduction in the flexibility of Canadian ships to respond to changes in the market.

Cargo preference or flag discrimination could conceivably be justified from an economic efficiency standpoint, if Canadian shippers were, before the introduction of such measures, captive customers to a foreign shipping company enjoying monopolistic pricing. If Canadian shippers had the choice of only one shipping company to choose from, then that company could charge higher prices than would be possible in a competitive situation. Creating another source of shipping service supply or excluding the foreign shipping company from particular markets might result in lower shipping rates for Canadian shippers. Any decrease in shipping rates would represent a net benefit to Canadian society.

Finally, flag discrimination and cargo preference practices are by their very nature inequitable. Flag discrimination favours Canadian-ship carriers over foreign-carriers which, as we saw, could conceivably lead to retaliatory measures by foreign governments. However, cargo preference measures are also inequitable in that they discriminate among Canadian carriers.

Those companies involved in the transportation of preference cargoes will benefit while those in other markets will not. Why should one group of ship operators be favoured over another?

VIII SUMMARY AND CONCLUSIONS

Recent trends and developments in international shipping have prompted many national governments to re-evaluate their international shipping policies. Canada, because of its heavy reliance on foreign-flag shipping should be particularily concerned over these changes that are occurring.

One proposed solution to deal with some of these recent developments is through the development of a Canadian deep-sea fleet. The issue is not a new one, in fact, it has dominated Canadian shipping policy for the past thirty years. No one is against the concept of more Canadian participation in the carriage of international seaborne exports and imports, nor is there anyone who would not care to see more ships flying the Canadian vessels. The controversy arises over whether the establishment of a Canadian fleet warrants the costs involved, and how such a fleet can most appropriately be developed. Naturally, each group involved in Canadian shipping has its own views on the matter.

Shippers, are not opposed to the establishment of a Canadian deep-sea fleet <u>if</u> they are left with the choice of using either Canadian or foreign services. Governments would probably support the notion of a Canadian deep-sea fleet if it could be inexpensively achieved and if it could be justified on cost-benefit terms. Meanwhile, shipowners are seeking assistance measures which would put them on equitable footing with their foreign flag competition who enjoy the benefits of various assistance measures offered in their home countries. The appeal for a Canadian deep-sea fleet is seen by many as one way in

which this equality can be achieved.

It is these criteria that this thesis endeavours to emcompass in its analysis and it is for this reason that the word 'appropriate' was chosen to be used in the central question of this thesis. This thesis is founded on the premise that if an assistance measure could be found which is adequate, economically efficient, acceptable to a majority of the parties involved, adaptable, equitable , and reliable in achieving its end, then such an assistance measure should be implemented. Realizing that finding an assistance measure that fulfills all these criteria is somewhat like chasing dreams, it is nevertheless possible to identify some measures that are more appropriate than others for encouraging the development of a Canadian deep-sea fleet. It is along these lines that the analysis in Chapter VII is conducted.

Operating subsidies were considered to be an inappropriate shipping assistance measure primarily because they had never been requested by shipowners or are not supported by any other groups,and because they were shown to be economically inefficient. Government-provided facilities and services assist international shipping but by themselves are not adequate forms of assistance. However, if a Canadian deep-sea fleet is established then such government-provided services as research and port management will take on increasing importance. Special subsidies (i.e., removal of customs duties on all materials to be used in the construction of vessels) are another form of assistance which by themselves are not adequate. With some of the special subsidy measures it is questionable to what degree

they will assist shipowners, hence the reliability of these measures is also questioned.

Tax subsidies are perhaps the most promising group of operating phase assistance measures examined. Although the government would probably oppose a special status for international shipping income it might be willing to grant other special tax incentives, foregoing short-term tax revenue in the hope of long-term gains. When compared to other countries, the capital allwance rates allowed in Canada on ships ineligible for the 33.3 percent CCA deductions were rather low. It is recommended that capital cost allowance deductions be marginally increased or that special or advance depreciation methods be introduced. Both investment tax credits and tax rate reductions would only be effective if taxes were otherwise payable. With shipping earnings that traditionally display cyclical tendencies the reliability of such measures is in doubt. In times of low profits these measures would also be found to be inadequate forms of shipping assistance. Reserve funds, permitted in many other maritime nations, do seem to make sense from an economic efficiency argument provided that a sufficiently long accumulation period is allowed. Such a measure would not affect the efficiency of shipping operations and would assist owners in accumulating funds to be used in this capital intensive industry. Although leveraged leasing would be an attractive measure to assist shipowners and operators it is doubtful whether shipping would be granted a special exemption from the current leasing provisions. The filing of consolidated reports is not allowed in Canada nor is it expected to become a part of

the Canadian tax system. Finally, the confusion surrounding the application of the 15 percent withholding tax to charter payments should be cleared up immediately. It is recommended that they should not be subject to such a tax since this would only result in an increase in Canadian charter costs and result in charter companies going off-shore.

It is difficult at the present time to justify the imposition of nonfiscal assistance measures to encourage the development of a Canadian deep-sea fleet, although such practices do seem to be gaining popularity in some regions of the world. Nonfiscal assistance measures fail the economic efficiency and acceptability tests. Interviews conducted with industry personnel suggest that the problems of cargo preference and flag discrimination have not yet seriously affected Canadian shipping interests. Thus the introduction of nonfiscal measures is seen as a premature solution to the problems of flag discrimination and cargo preference. If such problems do persist and worsen, finally posing a threat to Canadian interests then possibly nonfiscal retaliatory measures might be justified. At the present time this does not seem to be the case. However, it is recommended that Canada begin to prepare legislation to protect Canadian interests from detrimental foreign discriminatory action. Canada might look to the countries of West Germany, or Japan for examples of such protective legislation.

In conclusion, the federal government, if it hopes to encourage the development of a Canadian deep-sea fleet - ships owned and registered in Canada - then it should marginally

increase the CCA rates or introduce special or advance depreciation provisions. The government should reintroduce the use of tax reserve funds for tax purposes. Such a program could be similar to the one that existed before in Canada, or could be patterned on the current American Capital Construction Fund. To assist the shipowners obtain more favourable credit terms the federal government should establish a government guarantee program, one which covers vessels purchased from local yards and also from foreign yards. It would also be beneficial in conjunction with these other measures for the government to increase research and development in areas of Canadian expertise and areas which may promote Canadian sovereignty and security in the Arctic.

These are the recommended assistance measures that would be appropriate for the federal government to introduce to encourage the development of a Canadian deep-sea fleet. Such measures for the most part will be adequate, economically efficient, acceptable, adaptable, equitable and reliable. Having done this the government can rest assured that they have done their part. It would then be up to Canadian shipowners and operators to determine whether they can survive in the highly competitive international shipping industry. If successful they will float, if unsuccessful they will sink.

NOTES

Notes for Chapter I

[1] Institute of Shipping Economics Bremen, Shipping Statistics (Bremen, Germany: number 4, April 1980), p. 9.

[2] Transport Canada, A Shipping Policy for Canada (Ottawa: Minister of Supply and Services Canada, 1979), p. 15.

[3] Maritime Administration of the U.S. Department of Commerce, Maritime Subsidies (Washington D.C.: Government Printing Office, October 1976), p. 30.

[4] Transport Canada, Background Paper on Deep-sea Shipping (n.p., October, 1979), p. 7.

[5] "Once Again, Tough Talk about a Merchant Marine," Financial Post, 14 April, 1979.

[6] K.C. Griffin, "Canada's Deep Sea Fleet is Hidden Offshore," Seaports & the Shipping World (February 1979), p. 23.

[7] Transport Canada, Background Paper , p. 7.

Notes for Chapter II

[1] Thorsten Rinman and Rigmor Linden, Shipping - How It Works (Gothenburg, Sweden: Rinman & Linden AB, 1978), p. 14.

[2] In 1975, world trade, in terms of ton-miles, decreased by seven percent. This was atributable to an eight percent decrease in world oil trade experienced that year; the result of the Arab oil boycott and a world recession.

[3] Deadweight tonnage (d.w.t.) expresses the number of tons (of 2240 lbs.) a vessel can transport of cargo, stores and bunker fuel. It is the difference between the number of tons of water a vessel displaces "light" and the number of tons it displaces when submerged to its loadline.

[4] Tramp shipping is "carrying cargoes on a time or voyage charter basis usually catering to a single customer and carrying one or two commodities at a time."

[5] Rinman and Linden, Shipping - How it Works , p. 16.

[6] Rinman and Linden, Shipping - How It Works , p. 55.

[7] Samuel A. Lawrence, International Sea Tranport: The Years Ahead Lexington, Massachusetts: Lexington Books, 1972), p. 7.

[8] Richard Rienow, The Test of the Nationality of a Merchant Vessel , as quoted in Boleslaw Adam Boczek, Flags of Conveneince: An International Legal Study (Cambridge, Massachusetts: Lexington Books, 1972) p. 16.

[9] Rienow, Nationality of a Merchant Vessel , as quoted in Boczek, Flags of Convenience , p. 215.

[10] Liberian Code of Laws 1956, vol. II tit. 22, Maritime Law.

[11] Commercial Code of Panama, UNLS, p. 129.

[12] These countries include the U.K., Brazil, Mexico, Peru, the U.S., Germany, Norway, and the USSR.

[13] The most notable example being the United States.

[14] S.A. Lawrence, International Sea Transport , p. 5.

[15] Hedlin Menzies & associates Ltd., Canadian Merchant Marine Analysis of Economic Potential , prepared for The Canadian Transport Commission, Government of Canada (Winnepeg: Government of Canada, 1970), p. 44.

[16] Rinman and Linden, Shipping - How It Works , p. 73.

[17] Alan E. Branch, The Elements of Shipping (London,

England: Chapman & Hall, 1977), p. 238.

[18] Lawrence, International Sea Transport , p. 13.

[19] Ibid., p. 36.

[20] As of June 1978, 29 countries had become contracting parties representing 6% of the world tonnage. To become effective the Agreement must be supported by at least 24 countries and 25% of the world tonnage.

[21] Transport Canada, Shipping Policy for Canada , p. 31.

[22] If the EEC decides to support the Code then it will have sufficient 'tonnage' support to bring it into effect.

[23] Transport Canada, Shipping Policy for Canada , p. 14.

[24] In 1975, flag of convenience vessels carried close to 19% of Canadian exports and 23% of Canadian imports by tonnage (includes trade with US).

[25] Branch, Elements of Shipping , p. 214.

[26] Transport Canada, Shipping Policy for Canada , p. 17.

[27] These practices exist in Peru, China, Brazil and Argentina.

[28] C.i.f. (cost, insurance, freight) refers to selling arrangements where it is the responsibility of the seller to arrannge transportation, insurance, and documentation of the cargo. With f.o.b. (free on board) these responsibilities are bourne by the buyer.

[29] S.R. Hill, Study of Measures to Promote or Protect National Fleets Affecting Trade & Shipping .

[30] Transport Canada, Shipping Policy for Canada , p. 24. [31] Ibid., p. 79.

Notes for Chapter III

[1] Transport Canada, Shipping Policy for Canada , p. 4.

[2] Hedlin Menzies, Canadian Merchant Marine , p. 24.

[3] Ibid., p. 28.

[4] Ibid., p. 32.

[5] Institute of Shipping Economics Bremen, Shipping Statistics , p. 9.

[6] Transport Canada, Background Paper , pp. 7-8.

[7] Most of the material of this section was drawn from Transport Canada's Background Paper , pp. 2-8.

[8] A breakdown of these major Great Lakes cargoes is presented in Appendix 4.

[9] Tonnes refers to metric ton units.

[10] C.I.F. (cost, insurance, and freight) terms are where the seller of the cargo must arrange the transportation, insurance and documentation of the cargo. If more Canadian exports were sold on a c.i.f. basis rather than an f.o.b. basis there would probably be more Canadian participation in international shipping.

[11] Making a voyage in ballast refers to a ship that is not carrying commercial cargo and which must carry sand, gravel, or water to steady it on its return voyage.

[12] Neo-bulk products are goods that can be shipped either in loose bulk or packaged form.

[13] "Ottawa moves to Encourage Buy Canadian Policy for Marine Insurance," Globe & Mail , 22 May 1980.

[14] F.O.B. stands for free-on-board which means that it is the buyer's responsibility to arrange for the transportation, insurance and documentation of the cargo.

[15] "Windfall for Exporters," Financial Post , 14 April 1979.

[16] Transport Canada, Shipping Policy for Canada , p. 8.

[17] Transport Canada, Background Paper , p. 8.

[18] "Conference Calls," Financial Post , 14 April 1979, p. 35.

[19] Most of the material for this section is taken from K.C.

Griffin's article entitled "Canada's Deep Sea Fleet is Hidden Offshore" published in Seaports & the Shipping World .

[20] These suggested measures are examined later in Chapter VII.

[21] The responsibilities and objectives listed here are a summarization of the objectives listed in the Council of Marine Carriers' corporation charter.

[22] "Conference Calls," Financial Post , 14 April 1979.

[23] Canadian Manufacturers Asscciation's brief submitted to Transport Canada and contained in the Background Paper .

[24] Receiver General, The Public Accounts of Canada - 1979 , vol.II (Ottawa: Ministry of Supply and Services, 1979), pp. 27.3-27.5.

[25] Canada, Laws, Statutes, etc. Transport Act . Chapter T-14 of the Revised Statutes of Canada 1970.

[26] Statistic Canada, Water Transportation 54-202, p. 28..

[27] "Seafarers steer calm course now," Financial Post , 14 April 1979.

[28] "They're Subsidized but Shipyards Humming Along," Financial Post , 26 January 1980, p. 1.

[29] "Shipyard Production Value Rises 17.4%," Globe & Mail , 8 May 1980, p. B12.

Notes for Chapter IV

[1] Gerald R. Jantscher, Bread Upon the Waters: Federal Aids to the Maritime Industries Studies in the Regulation of Economic Activity (Washington, D.C.: The Brookings Institution, 1975), p. 10.

[2] This classification scheme is similar to that used in the Hedlin-Menzies' study, Canadian Merchant Marine with the exception of a couple of modifications

[3] Jantscher, Bread Upon the Waters , p. 20.

[4] Ibid., p. 54.

[5] G.E. Germane, "Subsidy Mechanisms - The U.S. Experience" Transportation Subsidies - Nature and Extent , ed. Karl Ruppenthal (Vancouver, British Columbia: Centre for Transportation Studies, University of British Columbia, 1974), pp. 9-20.

[6] Hedlin Menzies, Canadian Merchant Marine , p. 69.

[7] Transport Canada, Shipping Policy for Canada , p. 17

[8] Ibid., p. 17.

[9] For a more rigorous treatment on the economic effects of construction and operating subsidies the reader should consult Franz Eversheim's book entitled: Effects of Shipping Subsidization (Bremen, Germany: Institute for Shipping Research Bremen, 1958).

[10] This situation could only exist in the short run. Some shipping companies would eventually go bankrupt or decide not to replace obsolete vessels thus resulting in a decrease in long run supply. This would eventually lead to an increase in prices in the long run.

[11] Ibid., pp. 29-36.

[12] Ibid.

Notes for Chapter V

[1] An excellent description of the US differential operating subsidy program is provided in Jantsher's book, Bread Upon the Waters chapter 3.

[2] Jantscher, Bread Upon the Waters , p. 20.

[3] An "essential service" is a commodity trade route or area that is determined by the Maritime Administration to be of vital national interest.

[4] For a more thorough description of the rights and responsibilities of subsidized operators, the reader is referred to Richard E. Madigan's book; Taxation of the Shipping Industry (Cambridge, Maryland: Cornell Maritime Press Inc., 1971)

[5] Maritime Admin., Maritime Subsidies , p. 170.

[6] Ibid., p. 47.

[7] A "regular" trade route is one that is not a "national interest" route.

[8] Maritime Admin., Maritime Subsidies , p. 86.

[9] Ibid., p. 150.

[10] Most of the information presented in this section was drawn from various sections of Maritime Admin., Maritime Subsidies .

[11] Ibid., p. 29.

[12] Ibid., p. 56.

[13] Frank M. Fisser, "Financial Factors to be Considered before Venturing Into the International Arena," paper presented at the Third National Marine Conference, Ottawa, 22-23 May 1980.

[14] Maritime Admin., Maritime Subsidies , p. 88.

[15] Ibid., p. 48.

[16] Ibid., pp. 155-156..

[17] Ibid., p. 123.

[18] Ibid., p. 56.

[19] Ibid., p. 36.

[20] Ibid., P. 156.

[21] Ibid., P. 115.

[22] Ibid., P. 56.

[23] Ibid., p. 88.

[24] Ibid., p. 93.

[25] Ibid., p. 121.

[26] IBID., P.87.

[27] Jantscher, Bread Upon the Waters , pp. 54-62.

[28] Tonnage fees quoted are for the year 1976 as published in the Maritime Subsidies .

[29] Ibid., p. 29.

[30] Ibid., p. 34.

[31] "First Category" ships are dry cargo vessels, tankers, and refrigerator ships greater than 3000 g.r.t.

[32] Fisser, "Financing Factors," paper presented at Third National Marine Conference.

[33] Maritime Admin., Maritime Subsidies , pp. 12-13.

[34] Ibid., pp. 66-67.

[35] Ibid., p. 120.

[36] Ibid., P. 154.

[37] Ibid., pp. 165-166.

[38] Ibid., p. 173.

[39] In cases where special military features are to be built into a ship's design guarantees for up to 87.5% of the ship's construction cost may be issued.

[40] Maritime Admin., Maritime Subsidies , p. 174.

[41] Ibid., pp. 12-13.

[42] Ibid., p. 36.

[43] Ibid., pp. 54-55.

[44] Ibid.

[45] Ibid., pp.92-93.

[46] Ibid., p. 151

[47] Ibid., pp. 120-121.

[48] Ibid., p. 155

[49] Ibid., p. 17.

[50] Ibid., p. 16.

[51] Ibid., p. 47.

[52] Ibid., p. 54.

[53] Ibid., p. 114

[54] Ibid., p. 87.

[55] Ibid., p. 165.

[56] Madigan, Taxation of Shipping .

[57] Maritime Admin., Maritime Subsidies , p. 19.

[58] Ibid., p. 50.

[59] Ibid., p. 104.

[60] Ibid., p. 167.

[61] Ibid., p. 15

[62] Ibid., p. 130.

[63] Ibid., p. 50.

[64] Jantscher, Bread Upon the Waters , p. 78.

[65] Act of April 28, 1904, 33 Stat.518, 10 U.S.C., 1970 edition, section 2631.

[66] Transport Canada, Shipping Policy for Canada , p. 17.

[67] Maritime Admin., Maritime Subsidies , p. 18.

[68] Ibid., p. 130.

[69] Ibid., p. 134.

[70] Ibid., p. 110.

[71] Jantscher, Bread Upon the Waters , p. 45.

[72] Maritime Admin., Maritime Subsidies , p. 18.

[73] Ibid., p. 58.

[74] Ibid., p. 176.

[75] The bilateral trade agreements presented in this section were taken from various sections of Maritime Subsidies .

[76] Ibid., p. 152.

[77] Ibid., p. 121.

[78] Ibid., p. 58.

[79] Ibid., p. 88.

[80] Ibid., pp. 93-94.

Notes for Chapter VI

[1] Hedlin Menzies, Canadian Merchant Marine , p. 3.

[2] Ibid., p. 227.

[3] Ibid., pp. 304-305.

[4] Ibid.

[5] Alcan Shipping Service Ltd. in association with the Economist Intelligence Unit Limited, Shipping Options for Canadian International Deep Sea Trade (n.p., 1977), p. 1.2.

[6] Alcan Shipping Service Ltd., Shipping Options , p. 3.16.

[7] The Canada Shipping Act of 1952: Chapter 29 of the Revised Statutes of Canada (Ottawa: Queen's Printer and Controller of Stationery, 1953).

[8] The Maritime Code, BkI section 2, paragraphs (a), (b), and (c).

[9] Transport Canada, Shipping Policy for Canada , p. 1.

[10] Ibid. p. 51.

[11] Ibid.

[12] Transport Canada, Background Paper , p. 40.

[13] Submission were received from the Dominion Marine Association, Upper Lakes Shipping, the Royal Bank, the Canadian Export Association, the Canadian Manufacturers Association, the Council of Forest Industries of B.C., The Canadian Merchant Service Guild, and Saguenay Shipping Ltd.

[14] The term "Canadian merchant marine" refers to self-propelled ships of 1000 gross tons and over on Canadian registry.

[15] For a more thorough discussion on the advantages and disadvantages of a Canadian Merchant Marine, the reader is referred to S.G. Sturmey, A Consideration of the Ends and Means of National Shipping Policy (Bergen, Norway: Institute of Shipping Research - The Norwegian School of Economics & Business Administration, 1965).

[16] Maritime Admin., Maritime Subsidies , p. 21.

[17] Ibid.

[18] The M.V. Arctic is the world's first ice-breaking (Class II) bulk-carrier and is designed for operation in the High Arctic.

[19] Public Account of Canada .

[20] The term "person" as used in the Income Tax Act refers to either an individual or a corporation.

[21] Income Tax Act, 9th Tax reform edition, 1978, ed. H. Heward Stikeman (Toronto: Richard DeBoo Limited, 1978), section 250(3).

[22] Income Tax Act, section 250(4).

[23] Ibid., section 81(1)(c).

[24] A prime example of an "offshore" shipping operation in Canada is CP Ships (Bermuda).

[25] See schedule 'B' of the Income Tax Act.

[26] Members of the British Shipping Agreement

[27] "Conversion costs" are defined in section 13(14) of the Income Tax Act.

[28] For example, the investment tax credit on a $20 million ship would be $1 million. The annual deduction allowed from taxes otherwise payable would be limited according to the provisions contained in section 127(5), the section dealing with the investment tax credit.

[29] See either the Canada-U.S. Tax Convention, Article V or the Canada-U.K. Tax Agreement, Article 7.

[30] Leasing rules are covered in the Income Tax Act under Regulations 1100(15) to 1100(20).

[31] Maritime Admin., Maritime Subsidies , p. 22.

[32] Public Accounts of Canada , vol.II, 1978, p 12-12.

[33] Only commercial fishing vessels are eligible for the Department of the Environment subsidies.

[34] "Shipbuilders Criticize Drop In Subsidy," Globe & Mail - Report on Business , 3 July 1980.

[35] Maritime Admin., Maritime Subsidies , p. 23.

[36] Transport Canada, Shipping Policy for Canada , p. 30.

[37] Ibid.

[38] Temporaty use of non-Commonwealth registered vessel may be allowed if no suitable Canadian vessels are available.

Notes for Chapter VII

[1] The Reader's Digest Great Encyclopedic Dictionary, (1975), s.v. "appropriate."

[2] S.A. Lawrence, International Sea Transport , p. 201.

[3] The Reader's Digest Great Encyclopedic Dictionary, s.v. "adequate."

[4] Leonard G. Schifrin et al., Encyclopedia of Economics (Guilford, Conneticut: The Dushkin Publishing Group Inc., 1973), s.v. "economic efficiency."

[5] Container shipping is perhaps, the only area in which American shipowners have remained competitive without the aid of an operating subsidy. This is probably due to the fact that container shipping has a very high capital/labour ratio.

[6] Since these are the areas in which a Canadian operator might be at a substantial disadvantage.

[7] Jantscher, Bread Upon the Waters , p. 20.

[8] Statistics Canada, Water Transportation 1977, p. 15.

[9] Alcan Study , Summary Report, p. 3.10. Option 3 was a Canadian owned, registered and manned vessels.

For a more thorough discussion of social discount rates, and the theory behind them the reader is referred to the book Cost-Benefit Analysis: Selected Readings , comp. Richard Layard (Hamondworths,Penguin, 1972).

[10] In the case of unemployed labour the opportunity cost of that labour would not in fact be zero since people place some value on their idle or leisure time.

[11] Jantscher, Bread Upon the Waters , p. 15.

[12] Budget figures were obtained through a telephone conversation with Transport Canada officials.

[13] Alcan Study , vol.I, pp. 4.1-4.10.

[14] H.E. Bell in his address to the Third Marine Conference in Ottawa, May 22-23, 1980.

[15] The choice of a 10% social discount rate is somewhat arbitrary due to the controversy surrounding the theory and selection of an appropriate discount rate. In some cases, it is assumed to be equal to the government's average cost of borrowing (sometimes even less) while in other situations it is equated with the cost of capital experienced by a private firm engaged in similar projects. In both the Alcan and Hedlin-

Menzies studies, a 10% rate is one of the social discount rates that are applied, and so it was felt that using a 10% rate in this thesis would also be appropriate.

[16] Council of Marine Carriers et al., Joint Brief on the Canadian Shipping Industry , p. 2.

[17] Statistics Canada, Water Transportation , p. 26.

[18] The ships that would have qualified for the investment tax credit are listed in appendix 16.

[19] H.E. Bell in his address to the Third Marine Conference in Ottawa, May 22-23, 1980, estimated that "the cost of a Canadian-built bulk carrier, after subsidy (20%) might be around $22 million US ($25.3 million Cdn.), compared to $19 million US ($21.85 million Cdn.) in Japan.

[20] Canadian operating costs, according to H.E. Bell would be approximately $950,000 Cdn. per year on a 28,000 dwt bulk carrier.

[21] This is similar to the advance depreciation program that exists in Denmark.

[22] The Italian special depreciation allowance permits 40% of the vessel's cost to be written off over the first three years, not to exceed 15 % per year.

[23] These countries include Liberia, Panama, Singapore, Bermuda, Bahamas, China (4-5 years), Cyprus (10 years), and Greece (10 years).

[24] According to Mr. Griffen 78 ships with ocean-going capabilities are owned by Canadians under Canadian registry. If we assume that only these vessels would be eligible for the tax exemption, and that each vessel generates on average $2.5 million (figures provided by industry officials) then taxes otherwise payable would have been equal to;

= $2.5 million x .05 x .46 (per ship)
= $57,500 / ship

This figure times the 78 ships yields a total of $4.485 million which represents the total tax revenue foregone by the federal government.

[25] Taxable income from business sources would be $3 million, less $1 million in CCA deductions plus one-half of the $1.5 million capital gain times a tax rate of 46%.

($3 million - 1 million + (1/2 x 1.5 million)) x .46 = $1.265 million).

[26] Taxable income would be $3 million less $1 million in CCA deductions less $600,000 in allowable earning deposits made to the reserve fund times a tax rate of 46%.

[27] Transport Canada, A Shipping Policy for Canada , p. 44.

[28] Hedlin Menzies, Canadian Merchant Marine Analysis , p. 301.

[29] Ibid.

[30] These credit terms were in agreement with the 1977 OECD guidelines.

[31] Hedlin Menzies, Canadian Merchant Marine Analysis , p. 224.

[32] Jantscher, Bread Upon the Waters , p. 36.

[33] Alcan Study , p. 4.7.

[34] Transport Canada, Shipping Policy in Canada , p. 51.

BIBLIOGRAPHY

Alcan Shipping Services Ltd. in association with Economist Intelligence Unit Limited, Shipping Options for Canadian International Deep Sea Trade . prepared for Transport Canada Research and Development Centre. n.p., December 1977.

Baker, R. Palmer., Jr. "Flags of Refuge for the Shipping Industry - Federal Income Tax Consideration." Tax Law Review 13. (New York: New York University, School of Law, 1957-58) :137-166.

Boczek, Boleslaw Adam. Flags of Convenience:An International Legal Study . Cambridge, Massachusetts: Harvard University Press, 1962: chapter 2.

Branch, Alan E. The Elements of Shipping . London: Chapman & Hall, 1977.

Button, D.L; Charman, R.; Giroux, R; Murray R.S. A Program for a Canadian Merchant Marine . Prepared for Senior Transportation Management Course, n.p., 1974.

Canadian Transport Commission, Research Branch. Transport Review: Trends and Selected Issues . Ottawa-Hull: Minister of Supply and Services Canada, 1979.

Colley, Geoffrey. Tax Principles to Remember . n.p.: The Canadian Institute of Chartered Accountants, 1978 edition.

Council of Marine Carriers; Dominion Marine Association; Newfoundland Shipowners Association; St. Lawrence Shipowners Association. Joint Brief on the Canadian Shipping Industry . Vancouver, British Columbia: n.p., 1978.

Darling, Howard J. The Elements of an International Shipping Policy for Canada . Prepared for Transport Canada, n.p: 1974.

Dosman, Edgar J. The Canadian Deep-Sea Fleet Issue in Comparative Perspective . n.p., 1975.

Eversheim, Franz. Effects of Shipping Subsidization , ed. Gustav Adolf Theel. Bremen, West Germany: Institute for Shipping Research Bremen, 1958.

Ferguson, Allen; Lerner, Eugene M.; McGee, John S.; Oi, Walter Y.; Rapping, Leonard A.; Sobotka, Stephen P. The Economic Value of the United States Merchant Marine . Evanston, Illinois: Transportation Center at Northwestern University,

1961.

Fridlund, H. Maurice. "Tax Problems of the Shipping Industry." In Tulane Tax Institute (New Orleans: The Bobbs-Merrill Co., 1957):744-780.

Germane, G.E. "Subsidy Mechanisms - The U.S. Experience." In Transportation Subsidies - Nature and Extent , pp. 9-20. Edited by Karl M. Ruppenthal. Vancouver, British Columbia: n.p., 1978.

Goss, R.O. "Investment in Shipping and the Balance of Payments: A Case-Study of Import Substitution Policy." In Studies In Maritime Economics , pp. 46-60. Edited by R.O Goss. Cambridge, England:Cambridge at the University Press, 1968.

Griffin, K.C. "Canada's Deep Sea Fleet is Hidden Offshore." In Seaports & the Shipping World (February 1979).

Heaver, Trevor D. "Transport Subsidies in Canada." In Transportation Subsidies in Canada . Edited by Karl M. Ruppenthal. Vancouver, British Columbia: n.p., 1978.

Hedlin Menzies & Associates. Canadian Merchant Marine Analysis of Economic Potential . Prepared for the Canadian Transport Commission. Winnipeg, Manitoba: n.p., 1970.

Hill, S.R. Study of Measures to Promote or Protect National Fleets Affecting Canadian Trade & Shipping , n.p., ***.

Jantscher, Gerald. Bread Upon the Waters: Federal Aids to the Maritime Industries . Studies in the Regulation of Economic Activity. Washington, D.C.: The Brookings Institution, 1975.

Lawrence, Samuel A. International Sea Transport: The Years Ahead . Lexington Books Series. Lexington, Massachusetts: D.C. Heath & Company, 1972.

McGoldrick's Handbook of Canadian Customs and Excise Tariffs . 84th ed. n.p., 1976-77.

Madigan, Richard E. Taxation of the Shipping Industry . Cambridge, Maryland: Cornell Maritime Press, 1971.

Meyers, H. The Nationality of Ships . The Hague, Netherlands: Martinus Nijhoff, 1967.

Naess, Earling D. The Great PanLibHon Controversy: The Fight over the Flags of Shipping . Epping, U.K.: Gower Press, 1972.

Purdy, H.L. Transport Competition and Public Policy in Canada . Vancouver, British Columbia: n.p., 1972.

Rochdale Committee of Inquiry into Shipping Report . Presented to Parliament by the President of the Board of Trade by

Command of Her Majesty. London: Her Majesty's Stationery Office, 1970.

Schifrin, Leonard G.; *** . Encyclopedia of Economics Guilford, Conneticut: The Dushkin Publishing Group, 1973.

Statistics Canada. Shipping Report 5 Parts. 1977.

_____.Water Transportation. 54-202 , 1977.

Sturmey, S.G. A Consideration of the Ends and Means of National Shipping Policy . Bergen, Norway: Institute of Shipping Research - The Norwegian School of Economic & Business Administration, 1965.

Transport Canada, Marine Division. The Coasting Trade Act . Ottawa: Ministry of Supply and Services Canada, 1977.

_____ . Background Paper on Deep-Sea Shipping Ottawa: Ministry of Supply and Services Canada, 1979.

_____ . Measures to Encourage the Gradual Development of a Canadian Deep-Sea Fleet . Ottawa: Ministry of Supply and Services Canada, 1980.

_____ . A Shipping Policy for Canada . Ottawa: Ministry of Supply and Services Canada, 1979.

U.S. Department of Commerce, Maritime Administration. Maritime Subsidies . Washington: Government Printing Office, 1976.

Unpublished Papers Presented at the Third National Marine Conference in Ottawa, May 22-23, 1980;

Bell, H.E. "Financing Considerations in Determining Owners' Choice of Flag."

Fisser, Frank. "Financing Factors to be Considered Before Venturing into the International Arena."

Gibson, Andrew E. "Ships, Finance, Personnel and the Missing Ingredients."

Jebsen, Atle. "Consideration to Ponder before Venturing into Deepsea Operations."

Regan, Joseph M. "Financing Shipping."

Newspaper Articles;

"Algoma Central Railway Expected to Order a Conventional Bulk Carrier." Globe and Mail - Report on Business, 3 July 1980.

"Conference Calls." Financial Post - Special Report, 14 April 1979.

"End of Aid Will Hurt B.C. Yards." Vancouver Province , 23 July 1980.

"Harm Seen in Reduced Subsidy." Globe and Mail - Report on Business, 10 July 1980, p. B11.

"Improved Taxation Climate Urged." Globe and Mail - Report on Business, 5 July 1980.

"Industry Blasts Ottawa's Shipping Policy." Globe and Mail . 26 January 1979.

"Narby Cast his Lot with Mixed Cargo." Financial Post , 11 August 1979, p. 1.

"Once Again, Tough Talk About a Merchant Marine." Financial Post - Special Report, 14 April 1979.

"Ottawa Forced to turn Blind Eye to Officers Lacking Emergency Training." Globe and Mail - Report on Business, 15 May 1980, p. B12.

"Ottawa Moves to Encourage Buy Canadian Policy for Marine Insurance." Globe and Mail - Report on Business, 22 May 1980, p. B12.

"Owner's Charterers Uncertain over which Direction Ocean Freight Market will take." Globe and Mail - Report on Business, 24 April 1980.

"The Ro-Ro Twins." Vancouver Province , 23 July 1980, p. D4.

"Seafarers Steer Calm Course Now." Financial Post - Special Report, 14 April 1979.

"Shipbuilders Criticize Drop in Subsidy." Globe and Mail - Report on Business, 3 July 1980, p. B11.

"Shipyard Production Value Rises 17.4%." Globe and Mail - Report on Business, 8 May 1980, p. B12.

"They're Subsidized, but Shipyards Humming Along." Financial Post , 26 January 1980, p. 1.

"Vessel May Get Canadian Crew." Vancouver Province , 12 October 1979.

"Windfall for Exporters." Financial Post - Special Report, 14 April 1979.

"Yards Obtain Orders." Globe and Mail - Report on Business, 10 July 1980, p. B11.

APPENDICES

Appendix 1
World Bulk Trade Figures

Source: Fearnley & Eger

World Seaborne Crude Oil Trade

Year	*Tons*	*Ton-Miles*
1966	667 000 000	2 629 000 000 000
1967	672 000 000	3 400 000 000 000
1968	768 000 000	4 197 600 000 000
1969	871 000 000	4 853 000 000 000
1970	995 000 000	5 597 000 000 000
1971	1 068 000 000	6 554 000 000 000
1972	1 184 000 000	7 719 000 000 000
1973	1 365 000 000	9 206 000 000 000
1974	1 360 000 000	9 660 000 000 000
1975	1 259 000 000	8 882 000 000 000
1976	1 417 500 000	10 229 000 000 000

World Seaborne Coal Trade

Year	*Tons*	*Ton-Miles*
1966	61 000 000	226 000 000 000
1967	67 000 000	269 000 000 000
1968	73 000 000	310 000 000 000
1969	83 000 000	385 000 000 000
1970	101 000 000	431 000 000 000
1971	94 000 000	434 000 000 000
1972	96 000 000	434 000 000 000
1973	109 000 000	467 000 000 000
1974	119 000 000	555 000 000 000
1975	127 000 000	621 000 000 000
1976	127 000 000	591 000 000 000

World Seaborne Grain Trade

Year	*Tons*	*Ton-Miles*
1966	76 000 000	408 000 000 000
1967	68 000 000	380 000 000 000
1968	65 000 000	340 000 000 000
1969	60 000 000	307 000 000 000
1970	73 000 000	393 000 000 000
1971	76 000 000	406 000 000 000
1972	89 000 000	454 000 000 000
1973	139 000 000	760 000 000 000
1974	130 000 000	695 000 000 000
1975	137 000 000	734 000 000 000
1976	146 000 000	779 000 000 000

World Seaborne Iron Ore Trade

Year	*Tons*	*Ton-Miles*
1966	153 000 000	575 000 000 000
1967	164 000 000	651 000 000 000
1968	188 000 000	775 000 000 000
1969	284 000 000	919 000 000 000
1970	247 000 000	1 093 000 000 000
1971	250 000 000	1 185 000 000 000
1972	247 000 000	1 156 000 000 000
1973	298 000 000	1 398 000 000 000
1974	329 000 000	1 578 000 000 000
1975	292 000 000	1 471 000 000 000
1976	294 000 000	1 469 000 000 000

World Seaborne Phosphate Trade

Year	*Tons*	*Ton-Miles*
1966	27 000 000	96 000 000 000
1967	28 000 000	103 000 000 000
1968	32 000 000	119 000 000 000
1969	32 000 000	118 000 000 000
1970	33 000 000	116 000 000 000
1971	35 000 000	121 000 000 000
1972	38 000 000	135 000 000 000
1973	43 000 000	159 000 000 000
1974	48 000 000	168 000 000 000
1975	38 000 000	127 000 000 000
1976	39 000 000	125 000 000 000

World Seaborne Bauxite and Alumina Trade

Year	*Tons*	*Ton-Miles*
1966	23 000 000	55 000 000 000
1967	25 000 000	62 000 000 000
1968	26 000 000	70 000 000 000
1969	30 000 000	84 000 000 000
1970	34 000 000	99 000 000 000
1971	35 000 000	103 000 000 000
1972	35 000 000	109 000 000 000
1973	39 000 000	133 000 000 000
1974	42 000 000	158 000 000 000
1975	41 000 000	168 000 000 000
1976	42 000 000	138 000 000 000

Appendix 2
The World Merchant Fleet

1. TOTAL WORLD MERCHANT FLEET BY FLAGS AS OF JANUARY 1ST, 1980
WELTHANDELSFLOTTE GESAMT NACH FLAGGEN AM 1. JANUAR 1980

No Lfd. Nr.	Flag	No of ships Anzahl der Schiffe	grt (b) BRT
1	Liberia	2 321	76 756 901
2	Japan	4 086	37 817 616
3	Greece	3 075	35 144 550
4	UK	1 565	25 726 935
5	Norway	904	22 056 747
6	Panama	2 786	21 302 677
7	USSR	2 938	17 121 357
8	US	1 047	15 513 512
9	France	435	11 690 748
10	Italy	966	11 053 162
11	FR of Germany	1 168	8 092 618
12	Spain	733	7 634 529
13	Singapore	737	7 072 887
14	PR China	714	6 055 705
15	India (c)	393	5 629 183
16	Netherlands	690	5 336 930
17	Denmark	668	5 121 372
18	Sweden	361	4 652 603
19	Brazil	365	3 901 780
20	South Korea	442	3 597 463
21	Poland	334	3 132 275
22	Kuwait	117	2 396 083
23	Yugoslavia	312	2 370 690
24	Finland	216	2 307 949
25	Argentina	221	2 226 409
26	Cyprus	631	1 998 544
27	Bermudas	87	1 753 581
28	Belgium	80	1 624 902
29	Romania	183	1 573 289
30	Taiwan	164	1 571 651
31	Hong Kong	107	1 557 137
32	Australia	87	1 504 952
33	Philippines	279	1 472 064
34	GDR	194	1 364 164
35	Turkey	291	1 346 885
36	Saudi Arabia	110	1 237 960
37	Iraq	41	1 229 159
38	Portugal	108	1 204 917
39	Indonesia	550	1 150 333
40	Bulgaria	120	1 141 718
41	Algeria	76	1 126 634
42	Iran	93	977 477
43	Canada	204	963 320
44	Libya	36	851 170
45	Mexico	78	759 004
46	Venezuela	98	718 074
47	Cuba	99	677 912
48	Rep. South Africa	44	645 751
49	Malaysia	94	584 337
50	Peru	63	515 426
51	Pakistan	65	482 829
52	Egypt	109	481 911
53	Israel	51	431 983
54	Chile	59	410 607
55	Nigeria	36	358 791
56	Thailand	90	338 101
57	Morocco	47	308 080
58	Columbia	50	303 431
59	Bangladesh	86	266 709
60	Lebanon	165	253 130
61	Switzerland	27	250 267
62	Cayman Isl.	106	239 514
63	New Zealand	37	217 425
64	Ecuador	30	187 707
65	Vietnam	50	180 859
66	Honduras	80	180 598
67	Uruguay	24	171 505
68	Eire	59	169 604
69	Ivory Coast	20	158 538
70	CSSR	17	155 178
71	Ghana	23	133 855
72	Maledives	39	127 441
73	Tunisia	25	125 194
74	UAE	47	116 184
75	Malta	35	113 174
76	North Korea	20	112 048
77	Sri Lanka	16	83 749
78	Qatar	6	83 025
79	Cameroon	5	81 497
80	Austria	13	80 193
81	Zaire	9	77 951
82	Gabon	3	74 926
83	Hungary	21	73 031
84	Iceland	49	72 055
85	Angola	18	51 427
86	Albania	14	51 338
87	Nauru Rep.	4	50 738
88	Bahamas	28	50 440
89	Madagascar	16	47 348
90	Burma	14	46 389

Appendix 3
The Canadian Registered Merchant Fleet

Region	number of vessels	dwt tonnage
Atlantic Coast		
tankers	25	202,000
general cargo	22	-
dry-bulk	14	-
passenger/cargo	6	-
ferries	16	-
Total Atlantic Coast	83	261,700
Pacific Coast:		
ferries	28	
passenger	1	
general cargo	3	
dry-bulk	2	
tankers	2	
Total Pacific Coast	36	85,000
Inland Waters (including Great Lakes):		
dry-bulk	115	2,300,000
tankers	11	-
general cargo	5	-
ferries	8	-
passenger	1	-
Total Inland Waters	140	2,400,000
Total Deep-sea	4	

Appendix 4
The Canadian Great Lakes Fleet
Dry Bulk Cargoes - 1973

	Tons (2000 lbs)	Ton-Miles	Revenues	% of Total Revenue	Average Revenue per Ton-Mile	Average Length of Haul
	(000)	(000,000)	$(000)	%	¢	miles
Grain	18,706	24,485	64,300	44.9	0.26	1,309
Ore	26,532	24,095	39,700	27.7	0.16	908
Coal	18,750	4,505	18,000	12.6	0.40	240
Salt	2,739	1,353	4,900	3.4	0.36	494
Stone	6,167	937	4,500	3.1	0.47	152
Cement	1,189	609	2,400	1.7	0.40	513
Coke	674	787	2,000	1.4	0.25	1,168
Gypsum	625	686	1,600	1.1	0.23	1,098
Newsprint	158	192	1,400	1.0	0.71	1,221
Pig Iron	131	117	500	0.4	0.46	892
Miscellaneous	1,399	993	3,900	2.7	0.39	710
Total	77,070	58,759	143,200	100.0	0.24	762

Source: Working Papers 1973 Traffic, DMA Study.

Appendix 5
Section BII-19 of the Maritime Code

BII-19.(1) The following classes of persons are qualified to own Canadian registered ships, namely,

(a) Canadian citizens domiciled in a province;and

(b) corporations incorporated by or pursuant to an Act of Parliament or of the legislature of a province,

(i) the principal places of business of which are in Canada,

(ii) at least two-thirds of the directors of which are Canadian citizens resident in Canada,and

(iii) at least two-thirds of the persons who, pursuant to the by-laws or resolutions of the boards of directors or other governing bodies of the corporations, perform functions normally performed by the president, chairman of the board of directors or other governing body, secretary and treasure of a corporation are Canadian citizens ordinarily resident in Canada.

Appendix 6

Section 6 of

The Canada Shipping Act

"6. A ship shall be deemed not to be a British ship unless it is owned wholly by a person qualified to be an owner of a British ship, namely,

(a) a British subject; or

(b) a body corporate incorporated under the law of a country of the Commonwealth or of the Republic of Ireland, and having its principal place of business in that country.

Appendix 7
Canadian Ship Construction Subsidy Rates 1961-80

March 12, 1961	to	March 31, 1963	40%
April 1, 1963	to	February 2, 1965	35%
February 3, 1965	to	December 31, 1965	Nil
January 1, 1966	to	May 31, 1969	25%
JUne 1, 1969	to	Man 31, 1970	23%
June 1, 1970	to	May 31, 1971	21%
June 1, 1971	to	March 5, 1975	19%
March 6, 1975	to	December 31, 1975	14%
January 1, 1976	to	December 31, 1976	13%
January 1, 1977	to	February 28, 1977	12%
March 1, 1977	to	August 31, 1977	20%
September 1, 1977	to	October 31, 1977	20%
november 1, 1977	to	June 30, 1980	20%
July 1, 1980	tc	?	9%

keypunch has LC nc capital automatically

Appendix 8
Difference Between Canadian and Foreign Manning Costs

Vessel	Cdn Portage	Foreign Portage	Difference[1]
1. 350,000 (tanker)	$1,104,535	$617,688	$394,194
2. 175,000 dwt (OBO)	1,048,045	588,456	-[2]
3. 150,000 dwt (bulk-car.)	1,048,045	588,456	-
4. 80,000 dwt (tanker)	1,002,945	591,912	-
5. 65,000 dwt (bulk car.)	946,455	562,680	299,373
6. 40,000 dwt (bulk car.)	911,470	543,040	-
7. 20,000 dwt (bulk car.)	910,465	542,040	-
8. Neo-bulker -	910,465	545,808	282,786
9. Container -	847,545	488,460	285,816
10. General	944,080	533,976	-

1. To reflect the fact that the Canadian dollar has depreciated b approximately fifteen percent since these figures were compiled, foreign portage figures were multiplied by 1.15 to compensate for this. Thus the amcunts given in the "difference" column were calculated in the following manner;

Cdn.manning costs - (Foreign manning costs x 1.15)

2. Entries marked with a dash are unimportant to the following analysis since none of these ships were found to be commercially acceptable.

Cargo

Source: Alcan Study , vol. I, pp. 4.27-4.28.

Manning Cost Ratios (1976 Cdn$ = US$)
(calculated as Cdn. portage / Foreign portage)

1.	1.788	6.	1.676	
2.	1.781	7.	1.680	
3.	1.781	8.	1.668	range= 1.668-1.788
4.	1.694	9.	1.735	
5.	1.682	10.	1.768	

Appendix 9

Breakdown of Canadian Shipping Expenses

	$million	as % of total
Purchased transport	$171.2	23.4%
Crew Wages and Salaries	167.4	22.9
Fuel and Oil	116.9	15.9
Maintenance and Repair	70.3	9.7
Depreciation	51.6	7.1
Agency fees and berthage	49.9	6.8
Vessel and cargo insurance	34.8	4.7
Provisions	11.8	1.6
Other	56.9	7.9
Total	$730.7	100.0

* = subsidizable items

Source: Statistics Canada, Water Transport 1977, 54-202, p.15.

Crew wages as a percentage of total operating revenue
= $167.4 / 1180
= 14%

Appendix 10
Calculations for Change in Operating Margin Associated with an Operating Subsidy

Subsidy rate = (Cdn. manning costs - foreign manning costs) divided by Cdn. manning costs

= (1.5 -1)/ 1.5
= 33%

(assuming Cdn manning costs are 1.5 times foreign manning costs see appendix 8)

Total subsidy payments:
= Cdn. manning costs x 33% subsidy rate
= 167.4 x 33%
= $55.24 million

Operating subsidy without subsidy:

= total revenue less operating expenses / total revenue
= ($1180 million - $731 million) / $1180 million
= 38%

Operating margin with subsidy

=(tot. rev.- (op. exp.+ subsidy)) / tot. rev.
=($1180 million - (730.7 million - 55.24 million))
/ 1180 million
=42.8%

Change in operating revenue:

= 42.8% - 38%
= +4.8%

Change in after tax profit:
= before operating margin change x (1 - tax rate)
= 4.8 x .54
= 2.6%

Appendix 11
Proposed Subsidizable Routes and Vessels

Route	Type of Vessel	Trade route	Cargo
B3	Bulk - 150,000 dwt	Pacific Coast/Japan	Coal/ballast
B6	Bulk - 65,000 dwt	St.Lawrence/W.Europe	Grain/ballast
B9	Bulk - 65,000 dwt	St. Lawrence/S.Amer.	Grain/bauxite
N3	Neobulk-25,000 dwt	St.Lawrence/W.Europe	Forest products /steel
N4	Neobulk-25,000 dwt	Maritimes/W.Europe	Forest products /steel
C2	Container 1,750 TEU*	Maritimes/W.Europe	Container & Ro-Ro
C4	Container 800 TEU	St.Lawrence/W.Europe	Container & Ro-Ro

(* TEU = Twenty foot equivalent units)

Source: Alcan Study , Summary Report, p. 3.10.

Vessel Requirements of Proposed Fleet

Route	Type of Vessel	Ships in fleet 1979	1985	1990	1995
B3	Bulk-150,000 dwt	3	5	6	6
B6	Bulk- 65,000 dwt	1	1	1	1
B9	Bulk- 65,000 dwt	1	1	1	1
N3	Neobulk-25,000 dwt	2	2	2	3
N4	Neobulk-25,000 dwt	3	4	5	7
C2	Container-1750 teu	1	2	3	4
C4	Container- 800 teu	4	6	9	12
Total # of Vessels		15	21	27	34

Appendix 12
Calculation of Cost Associated with an Operating Subsidy Program

For the year 1979:

Type of Vessel	Number	Difference in Manning Costs	Total Manning Dif. (subtotal)
Bulk - 150,000 dwt	3	$394,000	$1,182,000
Bulk - 65,000 dwt	2	299,000	598,000
Neobulk-25,000 dwt	5	283,000	1,415,000
Containerships	5	286,000	1,430,000
Total Subsidizable Manning Costs			$4,625,000

According to figures presented in Gerald Jantscher's book, Bread Upon the Waters , p. 20, the wage component constituted approximately eighty-five percent of the total operating subsidy payments that were made.

Therefore, to estimate total subsidy payments for the Canadian program:

Total subsidizable manning costs = .85
x 1.00

$4.625 million = .85
x 1.00

Similar figures can be calculated for the years 1985,1990,and 199

Total Subsidizable Manning costs:

Year	Tot Sub. manning costs	Total Operating Subsidy
1985	$6.554 million	$7.06 million
1990	$8.375 million	9.02 million
1995	10.368 million	12.19 million

1. See appendix 8
2. See appendix 11

Appendix 13
Alternative Method for Calculating the Costs Associated With an Operating Subsidy Program

Saguenay Shipping Ltd. in its 1979 submission to Transport Canada on the question of a Canadian deep-sea fleet, estimated that Canadian crew costs were $250,000 to $350,000 higher per annum per vessel then were foreign crew costs. The cost of a Canadian differential subdidy can thus be estimated by multiplying the manning cost difference by the number of vessels receiving such a subsidy (see appendix 11) then multiplying by a factor or 1.176 (since subsidized wages account for approximately eight-five percent of total subsidy payments made).

Cost of Subsidy program

for 1979:

high (15 x $350,000) x 1.176 = $6.17 million

low (15 x $250,000) x 1.176 = $4.41 million

for 1985:

high (21 x $350,000) x 1.176 = $8.64 million

low (21 x $250,000) x 1.176 = $6.17 million

for 1990:

high (27 x $350,000) x 1.176 = $11.11 million

low (27 x $250,000) x 1.176 = $7.94 million)

Appendix 14

Crewing Benefits Associated with the Proposed Fleet

Year	# of vessels	# of officers	# of crew	total
1979	15	387	446	833
1985	21	618	729	1347
1990	27	821	972	1793
1995	34	1022	1206	2228

Source: Alcan Study , Summary Report, p. 4.14.

Appendix 15
Social Costs of Labour Associated with an Operating Subsidy Program

Social Cost of Labour = Subsidizable Manning Costs x .90 + Other Subsidizable Items

for 1979:

= ($4.625 million x .9) + ((1/.85 -1) x $4.625 million)
= $4.97 million

for 1985:
= ($6.554 million x .9) + ((1/.85 -1) x $6.554 million)
= $7.06 million

for 1990:
= ($8.375 million x .9) + ((1/.85 -1) x $8.375 million)
= $9.02 million

1. See appendix 12
2. Estimated to be 15% of total payments. See appendix 12

Appendix 16
Vessels Qualifying for a Five Percent Investment Tax Credit

Vessel Name	Registry	Type	Country of Build	Size	Estimated Constructi Cost ($mill
for 1977:					
Fort Victoria	Br	Bulk	Japan	28,320	$15
Fort Yale	Br	Bulk	Japan	28,320	15
Fort Quebec	Br	Bulk	Denmark	60,850	22
Port Vancouver	Br	Bulk	Denmark	60,850	22
Federal Calumet	Li	Bulk	S.Korea	43,630	15
Federal Clyde	Li	Bulk	S.Korea	35,925	13
Federal Fraser	Li	Bulk	Japan	40,200	13
Federal Rhine	Li	Bulk	S.Korea	35,925	13
Federal Schelde	Li	Bulk	S.Korea	35,925	13
Hellespont Cong.	Li	Bulk	Japan	56,090	15
Sanko Trust	Li	Tanker	Netherlnds	56,090	22
Texaco Brave	Li	Tanker	Japan	9,505	6
Total					$184 mil.
for 1978:					
Algobay	Ca	Bulk	Canada	31,000	22
Fort Carleton	Br	Bulk	Japan	22,175	17
Fort Walsh	Br	Bulk	Japan	22,175	17
Arctic	Ca	Bulk	Canada	28,600	22
Federal St.Laurent	Li	Bulk	S.Korea	30,000	19
Fort Hamilton	Br	Bulk	Japan	22,175	17
Federal Saguenay	Li	Bulk	S.Korea	30,000	19
Total					$133 mil.
for 1979:					
Federal Hudson	Li	Bulk	E. Ger.	23,730	18
Federal Huron	Li	Bulk	E. Ger.	23,730	18
Amstelslot	Ne	Cargo	Canada	17,500	23
Amstelsluis	Ne	Cargo	Canada	17,500	23
Amstelstadt	Ne	Cargo	Canada	17,500	23
Total					$105 mil.

Appendix 16 (cont'd) Summary of New Vessels

Type of Vessel	1977	1978	1979
Bulk	10	7	2
Cargo	0	0	3
Tanker	2	0	0
Total	12	7	5
Estimated value of new ships ($mil.)	184	133	95
Estimated ITC (in $ millions)	9.2	6.75	4.75

Appendix 17
Savings Asscciated with the Customs Exemption of Imported Ships to be Used in International Trade

Assuming a 20% Canadian Construction Subsidy:

with no customs tax;

- cwner may purchase a ship from either Canadian yards or from foreign yards with costs being as follows,

Cdn. yard (befcre subsidy)	$27.5 million
Cdn. yard (after subsidy)	22.0 million
Fcreign yard (no customs duties)	19.0 million

The cwner will naturally elect to purchase from the cheap source of supply (assuming all other conditions are similar) and will purchase the vessel abroad for $19 million.

with a 25% customs tax on imported ships;

- cwner now has the following choice to make,

Cdn. yard (after subsidy)	$22.0 million
Foreign yard (after 25% import tax) $19 million + (.25x$27.5m)	25.9 million

The cwner wil purchase from the Canadian yard and will pay a price of $22.0 million for the vessel.

The difference in the price that the owner must pay with and without the 25% customs duties tax represents the benefits to the shipowner cf this particular form of subsidy.

Appendix 18
Capital Cost Allowance Deductions Associated
With Various Rates and Methods
(in $,000s)

yr.	15% dec	30% dec	10% SL	15% SL	20% SL	33% SL	50% SL
2	$3,000	$6,000	$2,000	$3,000	$4,000	$6,666	$10,000
3	2,550	4,200	2,000	3,000	4,000	6,666	10,000
4	2,168	2,940	2,000	3,000	4,000	6,666	-
5	1,842	2,058	2,000	3,000	4,000	-	-
6	1,566	1,441	2,000	3,000	4,000	-	-
7	1,331	1,008	2,000	3,000	-	-	-
8	1,131	706	2,000	2,000	-	-	-
9	962	494	2,000	-	-	-	-
10	818	346	2,000	-	-	-	-
11	695	242	2,000	-	-	-	-
12	591	169	-	-	-	-	-
13	502	119	-	-	-	-	-
14	427	83	-	-	-	-	-
15	363	58	-	-	-	-	-
16	2,054	135	-	-	-	-	-

Assumptions.

1. Ship purchase value is $20 million
2. Disccunt rate used is 12%.
3. Life of the vessel is fifteen years.
4. CCA begins at end of second year (first two years of the vessel's life are spent in the shipyard).
5. Unclaimed Depreciation is claimed at the end of the fifteen year period.
6. Fifty percent tax rate is assumed

Appendix 18 (cont'd)

Yr.	Formula (Belgium)	Formula (France)	PV factors (12%)
2	$4,000	3,333	.79719
3	3,000	3,333	.71178
4	3,000	3,333	.63552
5	2,000	2,500	.56743
6	2,000	2,500	.50663
7	2,000	1,667	.45235
8	2,000	1,667	.40388
9	2,000	1,667	.36061
10	-	-	.32197
11	-	-	.28748
12	-	-	.25667
13	-	-	.22917
14	-	-	.20462
15	-	-	.18270
16	-	-	.16312

Appendix 19
Present Values of Differential Cash Flow Savings of Various Rates

Yr.	15% SL - 15% dec	10% SL - 15% dec	20% SL - 15% dec	33% SL - 15% dec	50% SL - 15% dec
2	$0	$(398.6)	$398.6	$1,461.2	$2,790.2
3	160.2	(195.7)	516.0	1,465.2	2,651.4
4	264.4	(53.4)	582.1	1,429.6	(688.9)
5	328.5	44.4	612.3	(522.6)	(522.6)
6	363.3	109.9	661.6	(396.7)	(396.7)
7	377.5	151.3	(301.0)	(301.0)	(301.0)
8	175.5	175.5	(228.6)	(228.6)	(228.6)
9	(173.5)	187.2	(173.5)	(173.5)	(173.5)
10	(131.7)	190.3	(131.5)	(131.5)	(131.5)
11	(99.8)	187.6	(99.8)	(99.8)	(99.8)
12	(76.0)	(76.0)	(76.0)	(76.0)	(76.0)
13	(57.5)	(57.5)	(57.5)	(57.5)	(57.5)
14	(43.6)	(43.6)	(43.6)	(43.6)	(43.6)
15	(33.6)	(33.6)	(33.6)	(33.6)	(33.6)
16	(1675.5)	(1675.5)	(1675.5)	(1675.5)	(1675.5)
Totals	$886.2	$20.7	$1412.8	$2412.1	$2520.8

SL = straight-line depreciation method
dec = declining balance method

Appendix 19 (cont'd)

Yr.	Belgian formula - 15% declining	30% declining - 15% declining	50% SL - 33% SL
2	$398.6	$1195.8	$1328.9
3	160.2	587.2	1186.6
4	264.4	245.3	(2118.5)
5	44.8	61.3	-
6	109.9	(31.7)	-
7	151.3	(73.1)	-
8	175.5	(85.8)	-
9	187.2	(84.4)	-
10	(131.7)	(76.0)	-
11	(99.8)	(65.1)	-
12	(76.0)	(54.2)	-
13	(57.5)	(43.9)	-
14	(43.6)	(35.2)	-
15	(33.6)	(27.9)	-
16	(167.5)	(156.5)	-
Totals	$882.2	$1355.8	$397.0

Appendix 20
Differential PV Cash Flows for Advance and Special Depreciation Methods

yr.	Method A	15% dec	Method A - 15% dec	Method B	Method B - 15% dec
1	$6000	-	$2679	-	-
2	2100	3000	(358)	5000	797.2
3	1785	2550	(272)	5000	871.9
4	1517	2168	(207)	4000	582.1
5	1290	1842	(157)	2000	44.8
6	1096	1566	(119)	2000	109.9
7	932	1331	(90)	2000	151.3
8	792	1131	(68)	-	(301.0)
9	673	962	(52)	-	(228.6)
10	572	818	(40)	-	173.5
11	486	695	(30)	-	131.5
12	413	591	(23)	-	99.8
13	351	502	(17)	-	76.0
14	298	429	(13)	-	57.5
15	253	363	(10)	-	43.6
16	1437	2054	(50)	-	33.6
Totals			$1173		$1244.0

Methcd A: 30% advance depreciation with regular 15% declining.

Methcd B: 40% special depreciation with regular 15% declining.

Appendix 21
Costs Associated with a Zero Tax Rate On Shipping Earnings

Total Revenue of Canadian domiciled ship operators.

Between Canadian and U.S. Ports (other than Great Lakes ports)	$47,272,174
Between Canadian and other foreign ports	197,588,466
Between two foreign ports	48,140,072
Total	$293,000,712

Assuming a 5% return on revenue (see earlier discussion on operating subsidies) and using a 46% tax rate:

Taxes otherwise payable = $293 million x .05 x .46
= $6.74 million

1. Data taken from Statistics Canada, Water Transportation, 1977, p. 37. Figures listed above include for-hire and private carriers but exclude data for government and sightseeing operators.

Appendix 22
Costs Associated with a Vessel Reserve Fund

The U.S. registered fleet as of April 1980 totalled 15,513,512 g.r.t. while the Canadian fleet totalled 963,320 g.r.t. or approximately one-sixteenth the size of the larger U.S. fleet.

Gerald Jantscher in his book Bread Upon the Waters , pp. 54-68, estimated the cost in 1974 of the U.S. Capital Construction Fund to be $35 million.

Thus the estimated cost of a similar Canadian program might cost in the neighbourhood of $2.17 million.

If such a program was introduced it would undoubtedly encourage the registration of more ships in Canada. Suppose that the Canadian registered fleet grew by 15 percent compared to five percent for the U.S. fleet. Under such assumptions the Canadian fleet would be one-fifteenth the size of the American fleet one year hence. The cost of the Canadian program might cost approximately $2.38 million.

Appendix 23
Benefit to Shipowners of a Loan Guarantee Program

Assumptions.

1. Average ship cost is $20 million.
2. Fifteen ships are ordered
3. Fifty percent of borrowing is done abroad.
4. Loans cover eighty percent of the ships costs.

Under such a set of assumptions $120 million will be borrowed abroad.

(15x $20 million) x .5 x .8 = $120 million

Without the government guarantee, the owners must make repayments amounting to $20,693,936 per annum if the terms of credit are a 13% interest rate and an eight year repayment period.

If because of the government guarantee program the owners are now able to obtain loans at a lower interest rate (say at 12% over eight years) then annual repayments will be reduced to $20,108,586.

This represents a reduction of $585,000 a year in annual repayments. Spread over the eight year period of the loan and discounted by the firm's cost of capital (assumed to be 10%) this yields a total benefit of $3.1 million to owners.

Calculations of Yearly Payments

12% interest rate	13% interest rate

Appendix 24
The Social Benefits Associated with a Loan Guarantee Program

Assumptions.

1. Foreign borrowing rate equals 9% percent
2. Canadian borrowing rate is 11%.
3. The loan is an eight year loan.
4. The loan is for a total of $25 million.
5. Social Discount Rate equals 10 percent.

If borrowing occurs in Canada the social costs and benefits are;

Yr.	Item	Amount	PV (using 10%)
0	loan outlay	$25 million	$(25 million)

If borrowing occurs abroad the social costs and benefits are;

Yr	Item	Amount	Pv (using 10%)
1-8	loan repayments	$4.517 mil.	$(24.097 million)

Net social benefits in this case from borrowing abroad in Canada are equal to the difference in the costs associated with each. This difference totals $0.903 million per vessel.